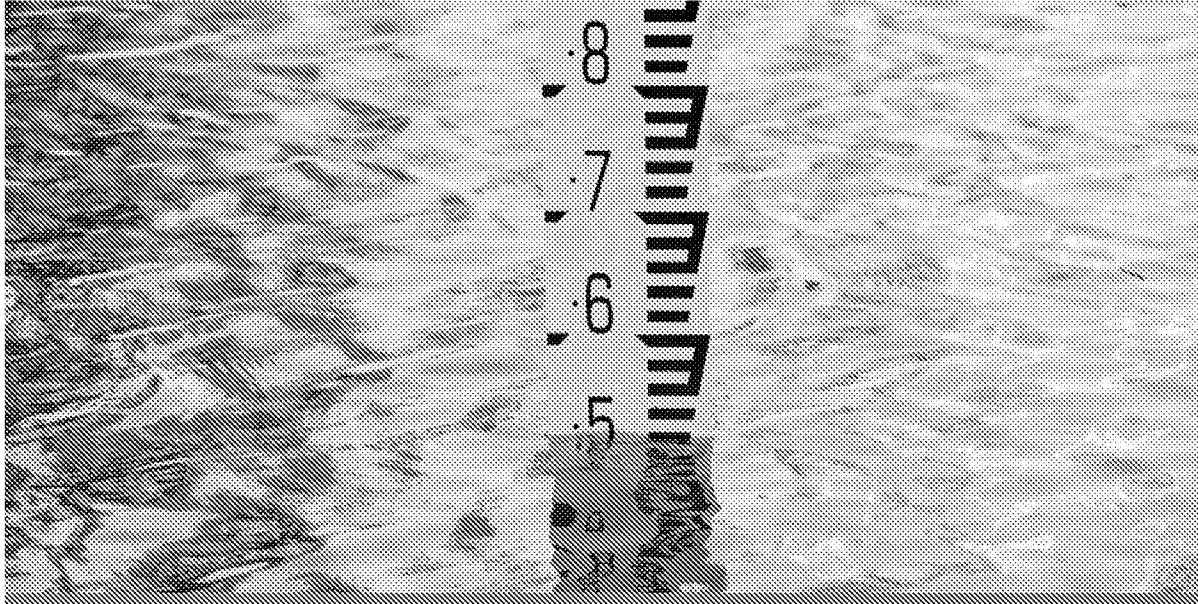




Foul & SuDS Drainage Statement

Land off North End Road, Yapton, West Sussex BN18 0DT

Client

Redrow Homes Ltd
Unit 1, Faraday Office Park
Basingstoke
Hampshire
RG24 8QQ
11228

Date: November 2021

Consulting Engineers

GTA CIVILS & TRANSPORT LIMITED
Gloucester House
66a Church Walk
Burgess Hill
West Sussex
RH15 9AS

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Schedule of Appendices

- A Site Location Maps and Aerial View
- B Topographic Survey & Sewer Records
- C Proposed Drainage Design Layout Sheets
- D MicroDrainage Calculation Sheets
- E Soil Soakage Test Report & Summary Sheet

Issue	Issue date	Compiled	Checked
Preliminary Issue	11 November 2021	JP	MR
Second Issue	22 December 2021	SDL	MR
Third Issue	7 January 2022	SDL	MR

1 Introduction

- 1.1 This Statement has been prepared for Redrow Homes South East in relation to the outline consent of 45 residential dwellings at North End Road, Yapton, BN18 0DT. No responsibility is accepted to any third party for all or part of this study in connection with this or any other development.
- 1.2 GTA Civils & Transport Limited was appointed by the client to provide a Foul & (SuDS) Drainage Statement.
- 1.3 The main objective of this Statement is to assist in the discharging of Condition 12 and 13 which are as follows:

Condition 12

No development shall take place until details of the implementation, maintenance and management of a sustainable drainage scheme have been submitted to and approved in writing by the LPA. The scheme shall be implemented and thereafter managed and maintained in accordance with the approved details. Those details shall include:

- i. A timetable for the scheme's implementation; and*
- ii. A management and maintenance plan for the lifetime of the development which shall include the arrangement for the adoption by any public body or statutory undertake, or any other arrangements to secure the operation of the sustainable drainage scheme throughout its lifetime.*

Condition 13

Construction of the development shall not commence until details of the proposed means of foul water sewerage have been submitted to and approved in writing by the LPA. No dwelling shall be occupied until works for the disposal of sewerage of sewerage have been fully implemented in accordance with the approved details.

- 1.4 A separate drainage maintenance document has been prepared to respond to Condition 12. This statement also provides a summary of the drainage networks for Condition 12 along with calculations.

2 Existing Site

- 2.1 The application site comprises a vacant agricultural field accessed from North End Road. The site area is approximately 1.8ha. A site location map and aerial view are shown in Appendix A.
- 2.2 Hydrology: An unnamed watercourse approximately 330m north of the site. It continues to flow east to join River Arun.
- 2.3 Topography: The topographical survey in Appendix B shows the site to be relatively flat with a fall from north to southwest. Levels range from approximately 7.62m AOD in the north to 6.16m AOD in the south.
- 2.4 Public Sewers: Southern Water's sewer records show the nearest foul sewer is close to the access in North End Road (manhole ref 9901). Refer to Appendix B. The nearest surface water sewer is at the junction between North End Road and Maypole Lane, some 90m to the NE of the site access.
- 2.5 Geology: The BGS online map shows that the site is underlain by Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation, Culvert Chalk Formation and Portsdown Chalk Formation. Superficial deposits description as River Terrace Deposits (undifferentiated) – sand, silt and clay.
- 2.6 Soakage tests undertaken in accordance with BRE365 – initially in January '20. The average rate of the 5 results is **$9.58 \times 10^{-7} \text{m/s}$** . Refer to Appendix E. This is the rate used in the SuDS design. Since then, 2 further series of tests were undertaken (in October '20 and October '21). The recommended overall rate from *all the tests* in the overarching report is **$1.5 \times 10^{-6} \text{m/s}$** .
- 2.7 Flood Risk: the proposed development lies entirely within Flood Zone 1. It is clear from flooding from reservoirs source and is therefore 'appropriate' in terms of consideration of the Sequential & Exception Tests (Table 3 of the NPPF).

3 Proposed Surface Water Drainage

- 3.1 Full planning permission is being sought for building 45 residential dwelling houses with associated roads, garages, driveways and gardens. The proposed site layout is in Appendix C.
- 3.2 The NPPF states that SuDS should be utilised unless there are practical reasons for not doing so. The SuDS hierarchy has been applied, with infiltration features at top of this list. As set out in section 2.6 above, the soil soakage rate on this site is reliable for soakage.
- 3.3 Because of the variation in soakage rates, the *lower* rate of $9.58 \times 10^{-7} \text{m/s}$ has been used in the drainage strategy layout. It is contended that this is a sturdier, conservative approach than relying on the higher rate, where there are pockets of lower porosity.
- 3.4 As infiltration is suitable, porous paving will be used in all catchments. the total area is divided into 13 catchment 'zones' plus 2 trench soakaways - which include all the contributing area in the site. MicroDrainage calculations are shown in Appendix D.
- 3.5 The following table summarises the area for infiltration at each catchment in the site:

Zones	Catchments (ha)
Zone 1	0.215
Zone 2	0.107
Zone 4	0.057
Zone 5	0.0343
Zone 6	0.0589
Zone 7	0.059
Zone 8	0.044
Zone 9	0.077
Zone 10	0.0325
Zone 11	0.0094
Zone 12	0.0177
Zone 13	0.0101
Trench 1	0.017
Trench 2	0.006

- 3.6 The structures will hold the volume in the critical 1 in 10 years event as well as the 100 yrs + 40% event. The calculated "half drain times" in the 1 in 10 years event are less than 24 hours and so comply with Building Regulations.

- 3.7 Ownership and maintenance responsibilities for the proposed drainage system are set out in the Drainage Management and Maintenance Plan – refer to the Annex of this Statement.
- 3.8 It is contended that this development's SuDS design is compliant with the PPG/NPPF.

4 Proposed Foul Water Drainage & Conclusion

- 4.1 The majority of development's foul network will drain by gravity - and connect to a public foul sewer in North End Road. A Pump Station is needed for the lower area to connect with the private foul network within the site. Refer to Appendix C.
- 4.2 The connection to the foul sewer has been approved by Southern Water under a Section 106 application.

It is contended that this proposal is fully compliant with national and local drainage policies. The items outlined in the Outline Planning decision notice have been addressed.

- End of Statement -

Appendix A

Site Location Maps and Aerial View





Appendix B

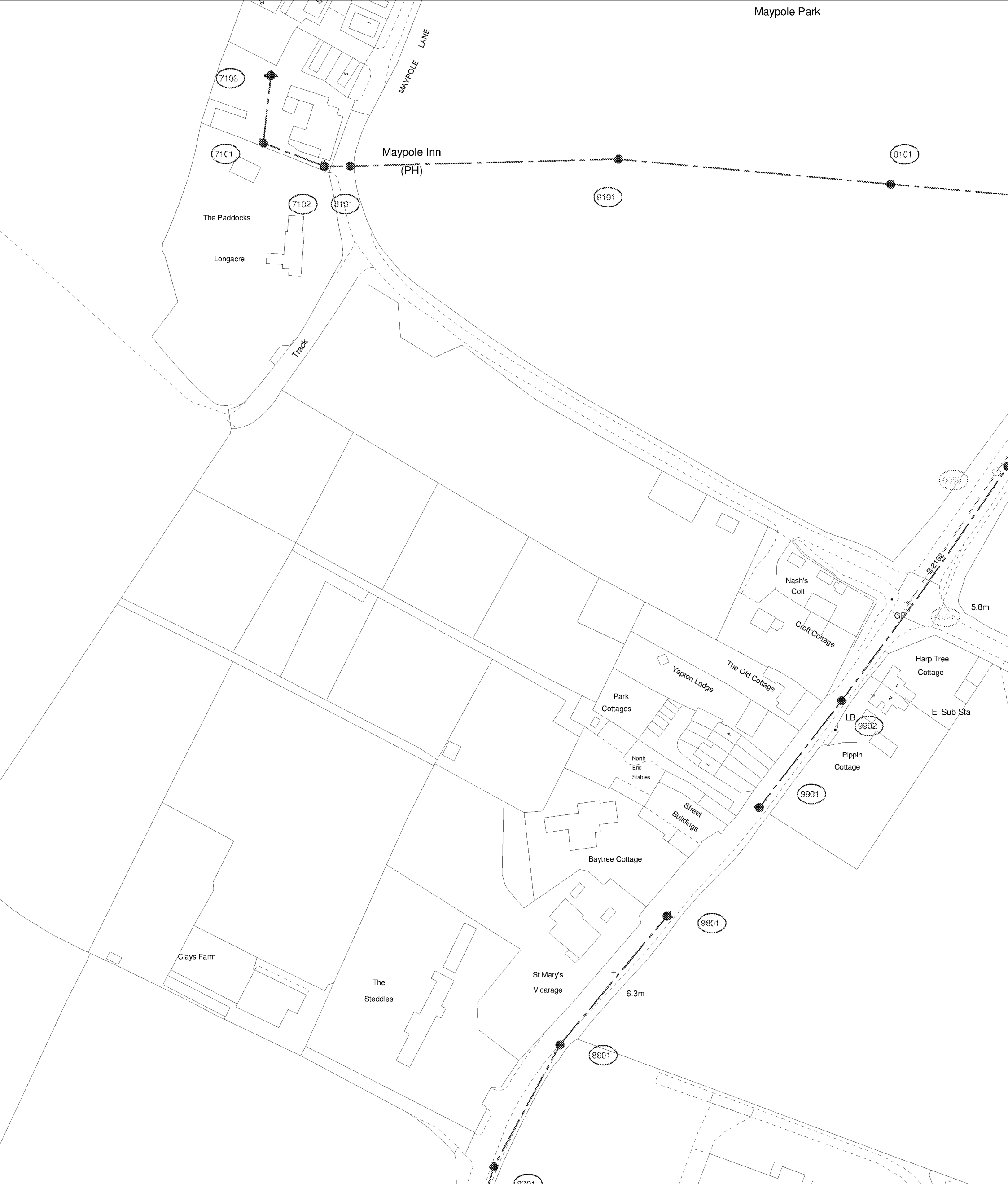
Topographic Survey & Sewer Records



Scale 1:200	Sheet Size: A0	Sheet Number: 1	Date: January 2019
Project Number: 26436	Rev: 9	Surveyed By: JL	Approved By: AJ / CP
			



SOUTHERN WATER



The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site.

Based upon Ordnance Survey Digital Data with the permission of the controller of H.M.S.O. Crown Copyright Reserved Licence No. WU 298530

O.S. REF: SU9703NE

Scale: 1:1250

Sewer Plot

WARNING: BAC pipes are constructed of Banded Asbestos Cement
WARNING: Unlabeled (UNK) materials may include Banded Asbestos Cement
ARUN DISTRICT COUNCIL Y/163/21/DOC



Printed By: Roopa

Date: 9-1-2019

Site Plan

Requested By:

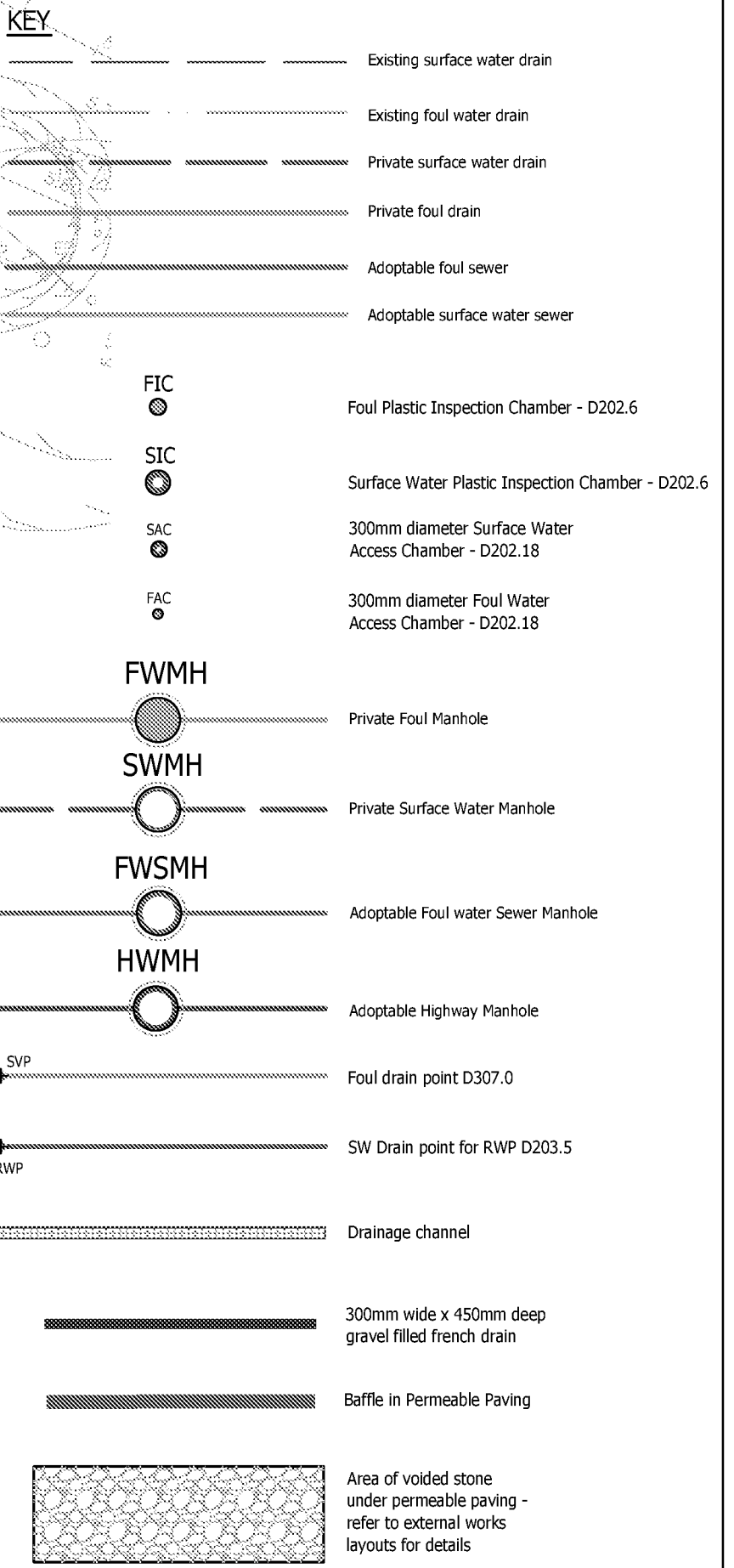


Appendix C

Proposed Drainage Design Layout Sheets



- GENERAL NOTES**
- The location, size, depth and identification of existing services that may be shown or referred to on this drawing have been assessed from non-intrusive observations, record drawings or the like. The contractor shall safely carry out intrusive investigations, trial holes or soundings prior to commencing work to satisfy himself that it is safe to proceed and that the assessments are accurate. Any discrepancies shall be notified to gta prior to works commencing.
 - Tender or billing drawings shall not be used for construction or the ordering of materials.
 - Do not scale. All dimensions and levels to be site confirmed.
 - This drawing shall be read in conjunction with all relevant architects, consultants drawings and specifications, together with H&S plan requirements.
 - Copyright: This drawing must not be copied, amended nor reproduced without the prior written agreement of gta.
 - All drawings, specifications and recommendations made by gta are subject to Local Authority and other relevant statutory authorities approval. Any works or services made abortive due to the client proceeding prior to these approvals is considered wholly at the Client's risk. gta hold no responsibility for resulting abortive works or costs.



- DESIGN NOTES**
- PERMEABLE PAVING DESIGN BASED ON AVERAGE INFILTRATION RATE OF 0.958 X 10⁻⁶ M/S FROM EASTWOOD & PARTNERS TEST RESULTS FOR SHALLOW TEST PITS SA1-5 DATED JANUARY 2020, EXCEPT ZONE 6 BASED ON ACTUAL NEARBY RESULT SA103 AT 6.7X10⁻⁶M/S
 - CONTRACTOR TO ESTABLISH LOCATIONS OF ALL EXISTING SERVICES PRIOR TO COMMENCING.
 - EXISTING TREES TO BE PROTECTED WHERE EXCAVATIONS RUN CLOSE.
 - SECTION 106 APPROVAL TO BE GAINED FROM SOUTHERN WATER FOR CONNECTION TO FOUL SEWER

SPECIFICATION NOTES

All drainage shall be constructed and commissioned in accordance with BS EN 256 & BS EN 752, Building Regulations Doc. H and any particular requirements of the Building Control Officer.

Drainage pipelines shall be in PVC-U below ground as Manley or similar approved, or verified clay.

All sewer pipelines to be VC only.

This drawing shall be read in conjunction with all other relevant drainage drawings, architectural drawings and structural drawings.

For manhole details, gully details, bedding etc, refer to gta detail sheets.

All foul water drain runs shall have a fall of 1:40 or steeper, unless noted otherwise.

All cement used for concrete drainage installations shall be sulphate resistant to class 3 or BS EN 12620, 30.5 (Grade 37.5).

The use of short radius or 90° bends for changes in direction is not permitted, only long or medium radius 45° bends shall be used. All junctions shall be 45°.

All drains shall have granular bed and surround as class 'S' bedding, unless noted otherwise.

All drainage works shall commence from the downstream end first unless agreed otherwise. Detail level to be checked by contractor prior to any works commencing and any discrepancy identified to engineer prior to laying and drainage.

ABBREVIATIONS

DETAIL NUMBER - SEE DRAINAGE DETAIL SHEET	
D207.0	FOUL DRAIN
FD	SURFACE WATER DRAIN
SWD	ADAPTABLE FOUL WATER SEWER
SWS	ADAPTABLE SURFACE WATER SEWER
HM	MANHOLE
IC	INJECTION CHAMBER
SC	450mm DIA. FOUL INSPECTION CHAMBER - D202.6
SIC	450mm DIA. SURFACE WATER INSPECTION CHAMBER - D202.6
FAC	300mm DIA. FOUL ACCESS CHAMBER - D202.18
SAC	300mm DIA. SURFACE WATER ACCESS CHAMBER - D202.18
CL	CAST IRON
VC	VITRIFIED CLAY
COC	CONCRETE
PVC-U	POLY(VINYL CHLORIDE) - UNPLASTICISED
G	SMALL GULLY - D202.0
YG	YARD GULLY - D202.2
RG	ROAD GULLY - D202.1
CPG	CAR PARK GULLY - D202.2
BCP	BELOW GROUND CATCH POINT
SV	SOIL VENT PIPE DROP
STP	STUB STACK OR DIRECT DRAIN CONNECTION
EP	EXTERNAL EXPOSURE POINT - D212.1
DT	SURFACE WATER DISTRIBUTION TANK
FL	FINISHED FLOOR LEVEL
SL	STRUCTURAL SLAB LEVEL
GL	GROUND LEVEL
CL	COVER LEVEL
DL	DOWN LEVEL
SL	SURF LEVEL
BL	BASE LEVEL
HL	HIGH LEVEL
BD	BLOCK/POD
CS	CONCRETE BED & SURROUND
CLASS S	CLASS S GRANULAR BED & SURROUND
CLASS B	CLASS B GRANULAR BED

P2	Sewer sizes amended	15.12.21	GS	MR	
P1	INITIAL ISSUE	29.01.21	AE	MR	
Rev	Amendments	Date	Drawn	CDA	
Status					
PRELIMINARY					
Client					
Architect					
RHP					
Project					
LAND OFF NORTH END ROAD YAPTON					
Title					
SITE DRAINAGE LAYOUT SHEET 1 OF 2					
Date	SEPTEMBER 2021	Scale @ A0	1:200		
Drawn/Rev	Project Ref		11228		
					
Gloster House, 50a Church Walk, Burgess Hill, West Sussex, BN15 5AG Tel: 01444 871444 Web: www.gtacivils.co.uk					
Drawing Number			Rev:		
11228/1601			P2		

GENERAL NOTES:

- All dimensions to be checked on site. All details and dimensions relating to sub-contractors or suppliers work must be checked and agreed between the sub-contractor or supplier and the main contractor.
- This drawing is to be read in conjunction with all relevant architects, services and engineers drawings and specifications.
- The location, size, depth and identification of existing services that may be shown or referred to on this drawing have been assessed from non intrusive observations, record drawings or the like. The contractor shall safely carry out intrusive investigations, trial holes or soundings prior to commencing work to satisfy himself that it is safe to proceed and that the assessments are accurate. Any discrepancies shall be notified to gsp prior to works commencing.
- Tender or billing drawings shall not be used for construction or the ordering of materials.
- Do not scale. All dimensions and levels to be site confirmed.
- Copyright : This drawing must not be copied, amended nor reproduced without the prior written agreement of gta.

SPECIFICATION NOTES

All drainage shall be constructed and commissioned in accordance with BS EN 295 & BS EN752, Building Regulations Doc. H and any particular requirements of the Building Control Officer.

Drainage pipelines shall be in PVC-u below ground as Marley or similar approved, or vitrified clay.

All sewer pipelines to be VC only.

This drawing shall be read in conjunction with all other relevant drainage drawings, architectural drawings and structural drawings.

For manhole details, gully details, bedding etc, refer to gta detail sheets.

All foul water drain runs shall have a fall of 1:40 or steeper, unless noted otherwise.

All cement used for concrete drainage installations shall be sulphate resistant to class 3 of BRE Digest 363. (Grade ST5)

The use of short radius or 90° bends for changes in direction is not permitted, only long or medium radius 45° bends shall be used. All junctions shall be 45°.

All drains shall have granular bed and surround as class 'S' bedding, unless noted otherwise.

All drainage works shall commence from the downstream end first unless agreed otherwise. Outfall level to be checked by contractor prior to any works commencing and any discrepancy identified to engineer prior to laying and drainage.

ABBREVIATIONS

DETAIL NUMBER - SEE DRAINAGE DETAIL SHEET

D307.0 FOUL DRAIN

SWD SURFACE WATER DRAIN

FWS ADOPTABLE FOUL WATER SEWER

SWS ADOPTABLE SURFACE WATER SEWER

MH MANHOLE

IC INSPECTION CHAMBER

SA SOAKAWAY

FIC 450mm DIA. FOUL INSPECTION CHAMBER - D202.6

SIC 450mm DIA. SURFACE WATER INSPECTION CHAMBER - D202.6

FAC 300mm DIA. FOUL ACCESS CHAMBER - D202.18

SAC 300mm DIA. SURFACE WATER ACCESS CHAMBER - D202.18

CI CAST IRON

VC VITRIFIED CLAY

CONC CONCRETE

PVC-U POLYVINYL CHLORIDE - UNPLASTICISED

G SMALL GULLY - D209.0

YG YARD GULLY - D209.2

RG ROAD GULLY - D208.1

CPG CAR PARK GULLY - D208.2

DP BELOW GROUND DRAIN POINT

SVP SOIL VENT PIPE DROP

SS STUB STACK OR DIRECT DRAIN CONNECTION

RP EXTERNAL RODDING POINT - D213.1

DT SURFACE WATER DISTRIBUTION TANK

FFL FINISHED FLOOR LEVEL

SSL STRUCTURAL SLAB LEVEL

GL GROUND LEVEL

CL COVER LEVEL

IL INVERT LEVEL

SL SUMP LEVEL

BL BASE LEVEL

HL HIGH LEVEL

BD BACKDROP

CBS CONCRETE BED & SURROUND

CLASS S GRANULAR BED & SURROUND

CLASS B GRANULAR BED

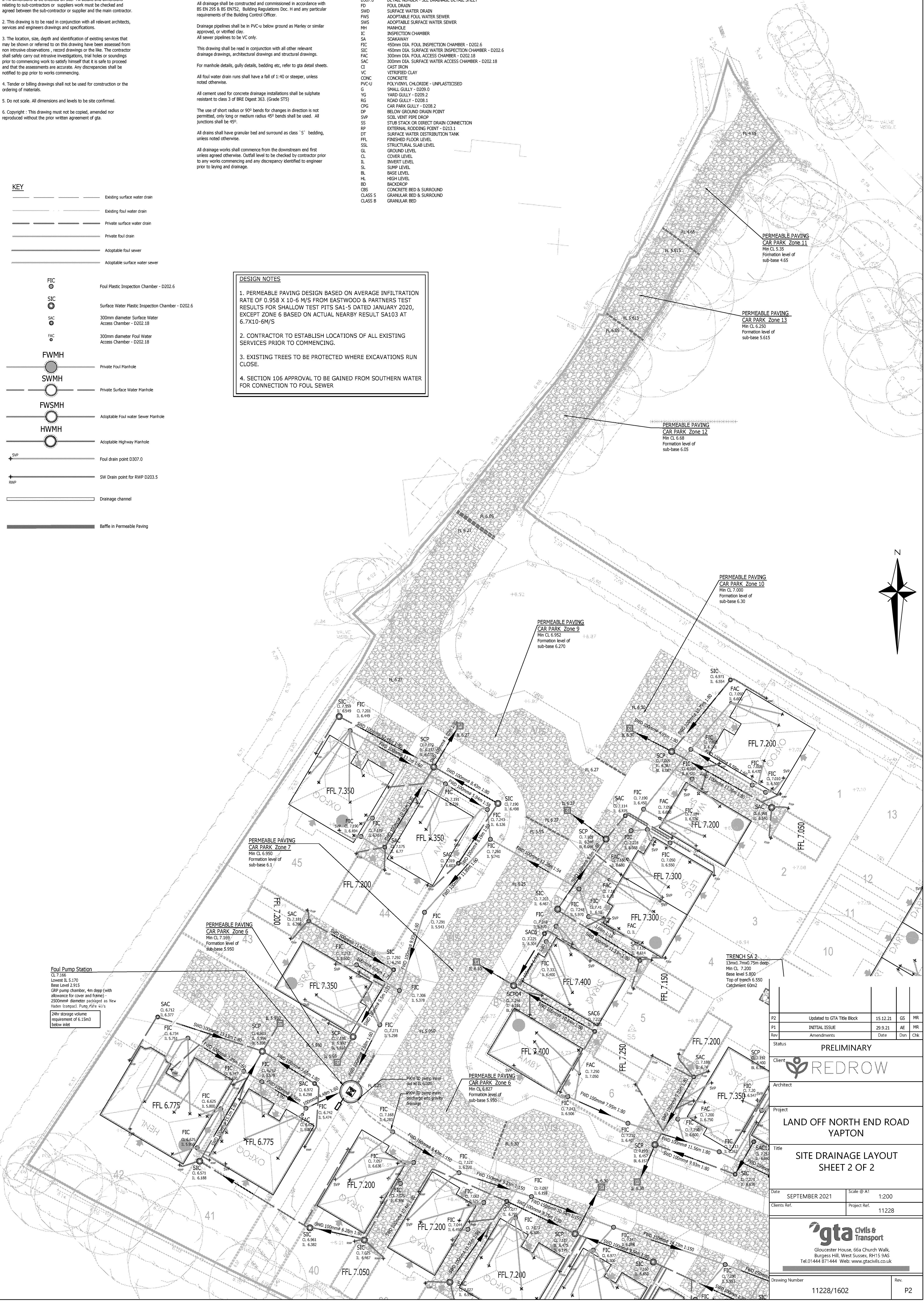
KEY

- Existing surface water drain
- Existing foul water drain
- Private surface water drain
- Private foul drain
- Adoptable foul sewer
- Adoptable surface water sewer

- FIC Foul Plastic Inspection Chamber - D202.6
- SIC Surface Water Plastic Inspection Chamber - D202.6
- SAC 300mm diameter Surface Water Access Chamber - D202.18
- FAC 300mm diameter Foul Water Access Chamber - D202.18
- FWMH Private Foul Manhole
- SWMH Private Surface Water Manhole
- FWSMH Adoptable Foul water Sewer Manhole
- HWMH Adoptable Highway Manhole
- SVP Foul drain point D307.0
- RWP SW Drain point for RWP D203.5
- Drainage channel
- Baffle in Permeable Paving

DESIGN NOTES

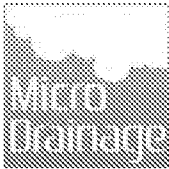
- PERMEABLE PAVING DESIGN BASED ON AVERAGE INFILTRATION RATE OF 0.958 X 10⁻⁶ M/S FROM EASTWOOD & PARTNERS TEST RESULTS FOR SHALLOW TEST PITTS SA1-5 DATED JANUARY 2020, EXCEPT ZONE 6 BASED ON ACTUAL NEARBY RESULT SA103 AT 6.7X10⁻⁶M/S
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- SECTION 106 APPROVAL TO BE GAINED FROM SOUTHERN WATER FOR CONNECTION TO FOUL SEWER



P2	Updated to GTA Title Block	15.12.21	GS	MR
P1	INITIAL ISSUE	29.9.21	AE	MR
Rev	Amendments	Date	Dsn	CHK
Status				
PRELIMINARY				
Client				
Architect				
Project	LAND OFF NORTH END ROAD YAPTON			
Title	SITE DRAINAGE LAYOUT SHEET 2 OF 2			
Date	SEPTEMBER 2021	Scale @ A1	1:200	
Clients Ref.		Project Ref.	11228	
Gloucester House, 66a Church Walk, Burgess Hill, West Sussex, RH15 9AS Tel: 01444 871444 Web: www.gtacivils.co.uk				
Drawing Number	11228/1602	Rev.	P2	

Appendix D

MicroDrainage Calculation Sheets

GTA Civils Ltd		Page 1
Gloucester House 66a Church Walk Burgess Hill RH15 9AS	North End Road, Yapton 11228 Trench SA1 1 in 10 yr	
Date 28/09/2021 18:28 File Trench SA 1.SRCX	Designed by mroberts Checked by	
Micro Drainage		Source Control 2020.1

Summary of Results for 10 year Return Period

Half Drain Time : 1440 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	5.589	0.089	0.0	2.0	O K
30 min Summer	5.616	0.116	0.0	2.6	O K
60 min Summer	5.645	0.145	0.0	3.2	O K
120 min Summer	5.677	0.177	0.0	3.9	O K
180 min Summer	5.696	0.196	0.0	4.4	O K
240 min Summer	5.707	0.207	0.0	4.6	O K
360 min Summer	5.721	0.221	0.0	4.9	O K
480 min Summer	5.727	0.227	0.0	5.1	O K
600 min Summer	5.730	0.230	0.0	5.1	O K
720 min Summer	5.731	0.231	0.0	5.1	O K
960 min Summer	5.730	0.230	0.0	5.1	O K
1440 min Summer	5.723	0.223	0.0	5.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	19
30 min Summer	41.172	0.0	34
60 min Summer	26.015	0.0	64
120 min Summer	16.169	0.0	124
180 min Summer	12.093	0.0	184
240 min Summer	9.770	0.0	242
360 min Summer	7.145	0.0	362
480 min Summer	5.684	0.0	482
600 min Summer	4.750	0.0	602
720 min Summer	4.097	0.0	720
960 min Summer	3.241	0.0	960
1440 min Summer	2.334	0.0	1198

GTA Civils Ltd		Page 2
Gloucester House 66a Church Walk Burgess Hill RH15 9AS	North End Road, Yapton 11228 Trench SA1 1 in 10 yr	
Date 28/09/2021 18:28 File Trench SA 1.SRCX	Designed by mroberts Checked by	
Micro Drainage		Source Control 2020.1

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	5.716	0.216	0.0	4.8	O K
2880 min Summer	5.709	0.209	0.0	4.7	O K
4320 min Summer	5.700	0.200	0.0	4.5	O K
5760 min Summer	5.693	0.193	0.0	4.3	O K
7200 min Summer	5.687	0.187	0.0	4.2	O K
8640 min Summer	5.683	0.183	0.0	4.1	O K
10080 min Summer	5.680	0.180	0.0	4.0	O K
15 min Winter	5.599	0.099	0.0	2.2	O K
30 min Winter	5.630	0.130	0.0	2.9	O K
60 min Winter	5.663	0.163	0.0	3.6	O K
120 min Winter	5.699	0.199	0.0	4.4	O K
180 min Winter	5.720	0.220	0.0	4.9	O K
240 min Winter	5.734	0.234	0.0	5.2	O K

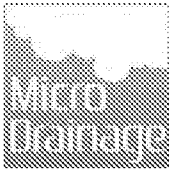
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	1.694	0.0	1576
2880 min Summer	1.362	0.0	1984
4320 min Summer	1.021	0.0	2808
5760 min Summer	0.845	0.0	3632
7200 min Summer	0.738	0.0	4464
8640 min Summer	0.666	0.0	5272
10080 min Summer	0.615	0.0	6056
15 min Winter	62.552	0.0	19
30 min Winter	41.172	0.0	33
60 min Winter	26.015	0.0	64
120 min Winter	16.169	0.0	122
180 min Winter	12.093	0.0	180
240 min Winter	9.770	0.0	240

GTA Civils Ltd		Page 3
Gloucester House 66a Church Walk Burgess Hill RH15 9AS	North End Road, Yapton 11228 Trench SA1 1 in 10 yr	
Date 28/09/2021 18:28 File Trench SA 1.SRCX	Designed by mroberts Checked by	
Micro Drainage		Source Control 2020.1

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	5.749	0.249	0.0	5.6	O K
480 min Winter	5.758	0.258	0.0	5.7	O K
600 min Winter	5.762	0.262	0.0	5.8	O K
720 min Winter	5.764	0.264	0.0	5.9	O K
860 min Winter	5.764	0.264	0.0	5.9	O K
1440 min Winter	5.758	0.258	0.0	5.7	O K
2160 min Winter	5.747	0.247	0.0	5.5	O K
2880 min Winter	5.738	0.238	0.0	5.3	O K
4320 min Winter	5.721	0.221	0.0	4.9	O K
5760 min Winter	5.707	0.207	0.0	4.6	O K
7200 min Winter	5.695	0.195	0.0	4.4	O K
8640 min Winter	5.685	0.185	0.0	4.1	O K
10080 min Winter	5.677	0.177	0.0	3.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	7.145	0.0	356
480 min Winter	5.684	0.0	472
600 min Winter	4.750	0.0	588
720 min Winter	4.097	0.0	702
860 min Winter	3.241	0.0	926
1440 min Winter	2.334	0.0	1354
2160 min Winter	1.694	0.0	1688
2880 min Winter	1.362	0.0	2136
4320 min Winter	1.021	0.0	3068
5760 min Winter	0.845	0.0	3928
7200 min Winter	0.738	0.0	4824
8640 min Winter	0.666	0.0	5624
10080 min Winter	0.615	0.0	6464

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 Trench SA1	
Burgess Hill RH15 9AS	1 in 10 yr	
Date 28/09/2021 18:28	Designed by mroberts	
File Trench SA 1.SRCX	Checked by	
Micro Drainage	Source Control 2020.1	

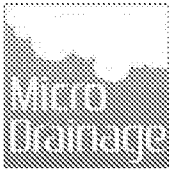
Rainfall Details

Rainfall Model	FEH	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
FEH Rainfall Version	2013	Cv (Winter)	0.840
Site Location	GB 497736 103464 SU 97736 03464	Shortest Storm (mins)	15
Data Type	Point	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.017

Time (mins)		Area
From:	To:	(ha)
0	4	0.017

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 Trench SA1	
Burgess Hill RH15 9AS	1 in 10 yr	
Date 28/09/2021 18:28	Designed by mroberts	
File Trench SA 1.SRCX	Checked by	
Micro Drainage	Source Control 2020.1	

Model Details

Storage is Online Cover Level (m) 6.500

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.00300	Invert Level (m)	5.500	Cap Volume Depth (m)	0.000
Infiltration Coefficient Side (m/hr)	0.00300	Trench Width (m)	4.5	Cap Infiltration Depth (m)	0.000
Safety Factor	2.0	Trench Length (m)	16.5		
Porosity	0.30	Slope (1:X)	0.0		

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66a Church Walk Burgess Hill West Sussex RH15 9AS	North End Road, Yapton 11228 Trench SA2 1 in 10 yrs	
Date 27/09/2021 18:20 File Trench SA 2.SRCX	Designed by MROBERTS Checked by	
Micro Drainage		Source Control 2020.1

Summary of Results for 10 year Return Period

Half Drain Time : 1437 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	5.905	0.105	0.0	0.7	O K
30 min Summer	5.938	0.138	0.0	0.9	O K
60 min Summer	5.972	0.172	0.0	1.1	O K
120 min Summer	6.010	0.210	0.0	1.4	O K
180 min Summer	6.032	0.232	0.0	1.5	O K
240 min Summer	6.046	0.246	0.0	1.6	O K
360 min Summer	6.062	0.262	0.0	1.7	O K
480 min Summer	6.070	0.270	0.0	1.8	O K
600 min Summer	6.073	0.273	0.0	1.8	O K
720 min Summer	6.075	0.275	0.0	1.8	O K
960 min Summer	6.073	0.273	0.0	1.8	O K
1440 min Summer	6.066	0.266	0.0	1.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	19
30 min Summer	41.172	0.0	34
60 min Summer	26.015	0.0	64
120 min Summer	16.169	0.0	124
180 min Summer	12.093	0.0	184
240 min Summer	9.770	0.0	242
360 min Summer	7.145	0.0	362
480 min Summer	5.684	0.0	482
600 min Summer	4.750	0.0	602
720 min Summer	4.097	0.0	720
960 min Summer	3.241	0.0	960
1440 min Summer	2.334	0.0	1196

GTA Civils Ltd		Page 2
66a Church Walk Burgess Hill West Sussex RH15 9AS	North End Road, Yapton 11228 Trench SA2 1 in 10 yrs	
Date 27/09/2021 18:20 File Trench SA 2.SRCX	Designed by MROBERTS Checked by	
Micro Drainage		Source Control 2020.1

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.058	0.258	0.0	1.7	O K
2880 min Summer	6.051	0.251	0.0	1.7	O K
4320 min Summer	6.041	0.241	0.0	1.6	O K
5760 min Summer	6.034	0.234	0.0	1.5	O K
7200 min Summer	6.028	0.228	0.0	1.5	O K
8640 min Summer	6.025	0.225	0.0	1.5	O K
10080 min Summer	6.022	0.222	0.0	1.5	O K
15 min Winter	5.918	0.118	0.0	0.8	O K
30 min Winter	5.954	0.154	0.0	1.0	O K
60 min Winter	5.993	0.193	0.0	1.3	O K
120 min Winter	6.036	0.236	0.0	1.6	O K
180 min Winter	6.061	0.261	0.0	1.7	O K
240 min Winter	6.078	0.278	0.0	1.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	1.694	0.0	1560
2880 min Summer	1.362	0.0	1964
4320 min Summer	1.021	0.0	2808
5760 min Summer	0.845	0.0	3632
7200 min Summer	0.738	0.0	4464
8640 min Summer	0.666	0.0	5272
10080 min Summer	0.615	0.0	6056
15 min Winter	62.552	0.0	19
30 min Winter	41.172	0.0	33
60 min Winter	26.015	0.0	64
120 min Winter	16.169	0.0	122
180 min Winter	12.093	0.0	180
240 min Winter	9.770	0.0	240

GTA Civils Ltd		Page 3
66a Church Walk Burgess Hill West Sussex RH15 9AS	North End Road, Yapton 11228 Trench SA2 1 in 10 yrs	
Date 27/09/2021 18:20 File Trench SA 2.SRCX	Designed by MROBERTS Checked by	
Micro Drainage		Source Control 2020.1

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	6.096	0.296	0.0	2.0	O K
480 min Winter	6.106	0.306	0.0	2.0	O K
600 min Winter	6.111	0.311	0.0	2.1	O K
720 min Winter	6.113	0.313	0.0	2.1	O K
960 min Winter	6.114	0.314	0.0	2.1	O K
1440 min Winter	6.106	0.306	0.0	2.0	O K
2160 min Winter	6.095	0.295	0.0	2.0	O K
2880 min Winter	6.085	0.285	0.0	1.9	O K
4320 min Winter	6.067	0.267	0.0	1.8	O K
5760 min Winter	6.053	0.253	0.0	1.7	O K
7200 min Winter	6.041	0.241	0.0	1.6	O K
8640 min Winter	6.031	0.231	0.0	1.5	O K
10080 min Winter	6.022	0.222	0.0	1.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	7.145	0.0	356
480 min Winter	5.684	0.0	472
600 min Winter	4.750	0.0	588
720 min Winter	4.097	0.0	702
960 min Winter	3.241	0.0	924
1440 min Winter	2.334	0.0	1342
2160 min Winter	1.694	0.0	1668
2880 min Winter	1.362	0.0	2136
4320 min Winter	1.021	0.0	3068
5760 min Winter	0.845	0.0	3928
7200 min Winter	0.738	0.0	4824
8640 min Winter	0.666	0.0	5696
10080 min Winter	0.615	0.0	6464

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66a Church Walk Burgess Hill West Sussex RH15 9AS	North End Road, Yapton 11228 Trench SA2 1 in 10 yrs	
Date 27/09/2021 18:20 File Trench SA 2.SRCX	Designed by MROBERTS Checked by	
Micro Drainage	Source Control 2020.1	

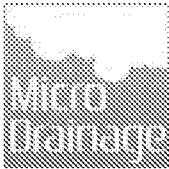
Rainfall Details

Rainfall Model	FEH	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
FEH Rainfall Version	2013	Cv (Winter)	0.840
Site Location	GB 497736 103464 SU 97736 03464	Shortest Storm (mins)	15
Data Type	Point	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.006

Time (mins)	Area
From:	To: (ha)
0	4 0.006

GTA Civils Ltd		Page 5
66a Church Walk Burgess Hill West Sussex RH15 9AS	North End Road, Yapton 11228 Trench SA2 1 in 10 yrs	
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Micro Drainage		Source Control 2020.1

Model Details

Storage is Online Cover Level (m) 7.150

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.00300	Invert Level (m)	5.800	Cap Volume Depth (m)	0.000
Infiltration Coefficient Side (m/hr)	0.00300	Trench Width (m)	1.7	Cap Infiltration Depth (m)	0.000
Safety Factor	2.0	Trench Length (m)	13.0		
Porosity	0.30	Slope (1:X)	0.0		

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 1	
Burgess Hill, BN43 6LB	1 in 10 yr	
Date 16/12/2021 15:07	Designed by mroberts	
File Zone 1.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Half Drain Time : 1285 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.373	0.073	0.5	21.1	O K
30 min Summer	6.400	0.100	0.5	28.8	O K
60 min Summer	6.429	0.129	0.5	37.0	O K
120 min Summer	6.460	0.160	0.5	46.0	O K
180 min Summer	6.478	0.178	0.5	51.1	O K
240 min Summer	6.489	0.189	0.5	54.4	O K
360 min Summer	6.502	0.202	0.5	58.1	O K
480 min Summer	6.506	0.206	0.5	59.8	O K
600 min Summer	6.511	0.211	0.5	60.6	O K
720 min Summer	6.511	0.211	0.5	60.7	O K
960 min Summer	6.509	0.209	0.5	60.1	O K
1440 min Summer	6.503	0.203	0.5	58.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	23
30 min Summer	41.172	0.0	37
60 min Summer	26.915	0.0	68
120 min Summer	16.169	0.0	126
180 min Summer	12.093	0.0	186
240 min Summer	9.779	0.0	246
360 min Summer	7.145	0.0	364
480 min Summer	5.694	0.0	484
600 min Summer	4.759	0.0	602
720 min Summer	4.097	0.0	722
960 min Summer	3.241	0.0	936
1440 min Summer	2.334	0.0	1144

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 1	
Burgess Hill, BN43 6LB	1 in 10 yr	
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File Zone 1.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.496	0.196	0.5	56.2	O K
2880 min Summer	6.489	0.189	0.5	54.2	O K
4320 min Summer	6.477	0.177	0.5	50.9	O K
5760 min Summer	6.468	0.168	0.5	48.2	O K
7200 min Summer	6.460	0.160	0.5	46.0	O K
8640 min Summer	6.454	0.154	0.5	44.2	O K
10080 min Summer	6.449	0.149	0.5	42.7	O K
15 min Winter	6.384	0.084	0.5	24.1	O K
30 min Winter	6.414	0.114	0.5	32.0	O K
60 min Winter	6.438	0.138	0.5	42.0	O K
120 min Winter	6.492	0.192	0.5	52.2	O K
180 min Winter	6.502	0.202	0.5	59.1	O K
240 min Winter	6.515	0.215	0.5	61.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	1.594	0.0	1532
2880 min Summer	1.362	0.0	1936
4320 min Summer	1.021	0.0	2768
5760 min Summer	0.845	0.0	3576
7200 min Summer	0.738	0.0	4392
8640 min Summer	0.666	0.0	5184
10080 min Summer	0.615	0.0	5952
15 min Winter	62.552	0.0	23
30 min Winter	41.172	0.0	37
60 min Winter	26.815	0.0	66
120 min Winter	18.169	0.0	124
180 min Winter	12.093	0.0	182
240 min Winter	9.779	0.0	242

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 1	
Burgess Hill, BN43 6LB	1 in 10 yr	
Date 16/12/2021 15:07	Designed by mroberts	
File Zone 1.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	6.539	0.230	0.5	66.2	O K
480 min Winter	6.538	0.236	0.5	68.3	O K
600 min Winter	6.542	0.242	0.5	69.4	O K
720 min Winter	6.543	0.243	0.5	69.9	O K
960 min Winter	6.543	0.243	0.5	69.7	O K
1440 min Winter	6.535	0.235	0.5	67.5	O K
2160 min Winter	6.523	0.223	0.5	64.2	O K
2880 min Winter	6.513	0.213	0.5	61.1	O K
4320 min Winter	6.493	0.193	0.5	55.4	O K
5760 min Winter	6.475	0.175	0.5	50.3	O K
7200 min Winter	6.460	0.160	0.5	45.9	O K
8640 min Winter	6.446	0.146	0.5	42.0	O K
10080 min Winter	6.435	0.135	0.5	38.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	7.145	0.0	356
480 min Winter	5.684	0.0	474
600 min Winter	4.750	0.0	590
720 min Winter	4.097	0.0	704
960 min Winter	3.241	0.0	926
1440 min Winter	2.334	0.0	1338
2160 min Winter	1.694	0.0	1652
2880 min Winter	1.362	0.0	2108
4320 min Winter	1.021	0.0	3024
5760 min Winter	0.845	0.0	3864
7200 min Winter	0.738	0.0	4688
8640 min Winter	0.666	0.0	5528
10080 min Winter	0.615	0.0	6344

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 1	
Burgess Hill, BN43 6LB	1 in 10 yr	
Date 16/12/2021 15:07	Designed by mroberts	
File Zone 1.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEB	Data Type	Point	Cv (Winter)	0.840	
Return Period (years)	10	Summer Storms	Yes	Shortest Storm (mins)	15	
FEB Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080	
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change %	40

Time Area Diagram

Total Area (ha) 0.215

Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:
	(ha)		(ha)
0	4 0.100	4	8 0.115

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 1	
Burgess Hill, BN43 6LB	1 in 10 yr	
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File Zone 1.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 5.936

Complex Structure

Porous Car Park

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:2)	0.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.300	Depression Storage (mm)	5
Max Percolation (l/s)	209.3	Width (m)	4.8	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	157.0	Membrane Depth (m)	0

Infiltration Blanket

Infiltration Coefficient Base (m/hr)	0.00345	Invert Level (m)	6.300	Cap Volume Depth (m)	0.000
Safety Factor	2.0	Diameter/Width (m)	12.0		
Porosity	0.30	Length (m)	17.0		

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PP Zone 2	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
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File Zone 2.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Half Drain Time : 1406 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.339	0.089	0.2	12.3	O K
30 min Summer	6.367	0.117	0.2	16.2	O K
60 min Summer	6.397	0.147	0.2	20.2	O K
120 min Summer	6.429	0.179	0.2	24.7	O K
180 min Summer	6.446	0.198	0.2	27.3	O K
240 min Summer	6.460	0.210	0.2	28.9	O K
360 min Summer	6.473	0.223	0.2	30.7	O K
480 min Summer	6.479	0.229	0.2	31.6	O K
600 min Summer	6.482	0.232	0.2	32.0	O K
720 min Summer	6.483	0.233	0.2	32.1	O K
960 min Summer	6.481	0.231	0.2	31.9	O K
1440 min Summer	6.473	0.223	0.2	30.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	26
30 min Summer	41.172	0.0	41
60 min Summer	26.915	0.0	70
120 min Summer	16.169	0.0	130
180 min Summer	12.093	0.0	190
240 min Summer	9.779	0.0	248
360 min Summer	7.145	0.0	366
480 min Summer	5.694	0.0	486
600 min Summer	4.759	0.0	604
720 min Summer	4.097	0.0	724
960 min Summer	3.241	0.0	960
1440 min Summer	2.334	0.0	1202

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PP Zone 2	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 16:33	Designed by mroberts	
File Zone 2.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.464	0.214	0.2	29.6	O K
2880 min Summer	6.457	0.207	0.2	28.6	O K
4320 min Summer	6.446	0.196	0.2	27.0	O K
5760 min Summer	6.437	0.187	0.2	25.8	O K
7200 min Summer	6.430	0.180	0.2	24.9	O K
8640 min Summer	6.425	0.175	0.2	24.2	O K
10080 min Summer	6.421	0.171	0.2	23.6	O K
15 min Winter	6.350	0.100	0.2	13.6	O K
30 min Winter	6.382	0.132	0.2	18.1	O K
60 min Winter	6.415	0.165	0.2	22.7	O K
120 min Winter	6.452	0.202	0.2	27.8	O K
180 min Winter	6.473	0.223	0.2	30.8	O K
240 min Winter	6.487	0.237	0.2	32.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	1.694	0.0	1568
2880 min Summer	1.362	0.0	1972
4320 min Summer	1.021	0.0	2812
5760 min Summer	0.845	0.0	3632
7200 min Summer	0.738	0.0	4484
8640 min Summer	0.666	0.0	5272
10080 min Summer	0.615	0.0	6056
15 min Winter	62.552	0.0	26
30 min Winter	41.172	0.0	41
60 min Winter	26.815	0.0	70
120 min Winter	18.169	0.0	128
180 min Winter	12.093	0.0	186
240 min Winter	9.770	0.0	244

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 2	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 16:33	Designed by mroberts	
File Zone 2.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	6.502	0.252	0.2	34.8	O K
480 min Winter	6.510	0.260	0.2	35.9	O K
600 min Winter	6.515	0.265	0.2	36.5	O K
720 min Winter	6.517	0.267	0.2	36.8	O K
960 min Winter	6.516	0.266	0.2	36.6	O K
1440 min Winter	6.509	0.259	0.2	35.7	O K
2160 min Winter	6.496	0.246	0.2	33.9	O K
2880 min Winter	6.485	0.235	0.2	32.5	O K
4320 min Winter	6.466	0.216	0.2	29.8	O K
5760 min Winter	6.450	0.200	0.2	27.5	O K
7200 min Winter	6.435	0.185	0.2	25.6	O K
8640 min Winter	6.423	0.173	0.2	23.9	O K
10080 min Winter	6.413	0.163	0.2	22.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	7.145	0.0	360
480 min Winter	5.684	0.0	476
600 min Winter	4.750	0.0	592
720 min Winter	4.097	0.0	708
960 min Winter	3.241	0.0	932
1440 min Winter	2.334	0.0	1360
2160 min Winter	1.694	0.0	1692
2880 min Winter	1.362	0.0	2160
4320 min Winter	1.021	0.0	3072
5760 min Winter	0.845	0.0	3928
7200 min Winter	0.738	0.0	4824
8640 min Winter	0.666	0.0	5624
10080 min Winter	0.615	0.0	6456

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 2	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
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File Zone 2.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEB	Data Type	Point	Cv (Winter)	0.840	
Return Period (years)	10	Summer Storms	Yes	Shortest Storm (mins)	15	
FEB Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080	
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.107

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:	From:	To:
0	4	0.035	4	8	0.036
				8	12
					0.036

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 2	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
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File Zone 2.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 7.231

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.250	Depression Storage (mm)	0
Max Percolation (l/s)	127.8	Width (m)	12.6	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	36.5	Membrane Depth (m)	0

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Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 4	
Burgess Hill, BN43 6LB	1 in 10 yr	
Date 16/12/2021 15:18	Designed by mroberts	
File Zone 4.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Half Drain Time : 992 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.917	0.067	0.2	6.4	O K
30 min Summer	6.838	0.088	0.2	8.4	O K
60 min Summer	6.859	0.109	0.2	10.5	O K
120 min Summer	6.863	0.133	0.2	12.8	O K
180 min Summer	6.856	0.146	0.2	14.1	O K
240 min Summer	6.864	0.154	0.2	14.8	O K
360 min Summer	6.912	0.162	0.2	15.6	O K
480 min Summer	6.915	0.165	0.2	15.3	O K
600 min Summer	6.915	0.165	0.2	15.9	O K
720 min Summer	6.914	0.164	0.2	15.6	O K
960 min Summer	6.911	0.161	0.2	15.5	O K
1440 min Summer	6.905	0.155	0.2	14.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	22
30 min Summer	41.172	0.0	37
60 min Summer	26.915	0.0	66
120 min Summer	16.169	0.0	126
180 min Summer	12.093	0.0	186
240 min Summer	9.779	0.0	244
360 min Summer	7.145	0.0	364
480 min Summer	5.694	0.0	482
600 min Summer	4.759	0.0	602
720 min Summer	4.097	0.0	720
960 min Summer	3.241	0.0	818
1440 min Summer	2.334	0.0	1059

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Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PP Zone 4	
Burgess Hill, BN43 6LB	1 in 10 yr	
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File Zone 4.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.896	0.146	0.2	14.1	O K
2880 min Summer	6.889	0.139	0.2	13.4	O K
4320 min Summer	6.876	0.126	0.2	12.2	O K
5760 min Summer	6.867	0.117	0.2	11.2	O K
7200 min Summer	6.859	0.109	0.2	10.5	O K
8640 min Summer	6.852	0.102	0.2	9.9	O K
10080 min Summer	6.847	0.097	0.2	9.3	O K
15 min Winter	6.825	0.075	0.2	7.2	O K
30 min Winter	6.848	0.098	0.2	9.8	O K
60 min Winter	6.873	0.123	0.2	11.8	O K
120 min Winter	6.900	0.150	0.2	14.4	O K
180 min Winter	6.915	0.165	0.2	15.9	O K
240 min Winter	6.924	0.174	0.2	16.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	1.694	0.0	1468
2880 min Summer	1.362	0.0	1876
4320 min Summer	1.021	0.0	2684
5760 min Summer	0.845	0.0	3464
7200 min Summer	0.738	0.0	4256
8640 min Summer	0.666	0.0	5016
10080 min Summer	0.615	0.0	5752
15 min Winter	62.552	0.0	22
30 min Winter	41.172	0.0	37
60 min Winter	26.815	0.0	66
120 min Winter	18.169	0.0	124
180 min Winter	12.093	0.0	182
240 min Winter	9.770	0.0	240

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PP Zone 4	
Burgess Hill, BN43 6LB	1 in 10 yr	
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File Zone 4.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	6.934	0.184	0.2	17.7	O K
480 min Winter	6.938	0.186	0.2	18.1	O K
600 min Winter	6.940	0.186	0.2	18.3	O K
720 min Winter	6.939	0.189	0.2	18.2	O K
960 min Winter	6.936	0.186	0.2	17.9	O K
1440 min Winter	6.927	0.177	0.2	17.0	O K
2160 min Winter	6.915	0.165	0.2	15.9	O K
2880 min Winter	6.903	0.153	0.2	14.7	O K
4320 min Winter	6.892	0.132	0.2	12.7	O K
5760 min Winter	6.884	0.114	0.2	11.0	O K
7200 min Winter	6.859	0.100	0.2	9.6	O K
8640 min Winter	6.838	0.088	0.2	8.5	O K
10080 min Winter	6.828	0.078	0.2	7.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	7.145	0.0	356
480 min Winter	5.684	0.0	472
600 min Winter	4.750	0.0	584
720 min Winter	4.097	0.0	696
960 min Winter	3.241	0.0	910
1440 min Winter	2.334	0.0	1140
2160 min Winter	1.694	0.0	1596
2880 min Winter	1.362	0.0	2048
4320 min Winter	1.021	0.0	2980
5760 min Winter	0.845	0.0	3696
7200 min Winter	0.738	0.0	4472
8640 min Winter	0.666	0.0	5272
10080 min Winter	0.615	0.0	5952

GTA Civils Ltd

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Gloucester House

North End Road, Yapton

66a Church Walk

11228 PF Zone 4

Burgess Hill, BN43 6LB

1 in 10 yr

Date 16/12/2021 15:18

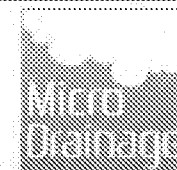
Designed by mroberts

File Zone 4.SRCX

Checked by

XP Solutions

Source Control 2020.1.3



Rainfall Details

Rainfall Model	FEH	Data Type	Point	Cv (Winter)	0.840	
Return Period (years)	10	Summer Storms	Yes	Shortest Storm (mins)	15	
FEH Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080	
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.056

Time (mins)	Area (ha)	Time (mins)	Area (ha)		
From:	To:	From:	To:		
0	4	0.028	4	8	0.028

GTA Civils Ltd

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Gloucester House

North End Road, Yapton

66a Church Walk

11228 PP Zone 4

Burgess Hill, BN43 6LB

1 in 10 yr

Date 16/12/2021 15:18

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File Zone 4.SRCX

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XP Solutions

Source Control 2020.1.3



Model Details

Storage is Online Cover Level (m) 7.384

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.750	Depression Storage (mm)	0
Max Percolation (l/s)	89.2	Width (m)	14.6	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	22.0	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 5	
Burgess Hill, BN43 6LB	1 in 10 yr	
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File Zone 5.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Half Drain Time : 1162 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.677	0.077	0.1	3.8	O K
30 min Summer	6.700	0.100	0.1	5.0	O K
60 min Summer	6.725	0.125	0.1	6.2	O K
120 min Summer	6.753	0.153	0.1	7.6	O K
180 min Summer	6.768	0.168	0.1	8.4	O K
240 min Summer	6.778	0.178	0.1	8.8	O K
360 min Summer	6.788	0.188	0.1	9.3	O K
480 min Summer	6.792	0.192	0.1	9.6	O K
600 min Summer	6.794	0.194	0.1	9.6	O K
720 min Summer	6.794	0.194	0.1	9.6	O K
960 min Summer	6.790	0.190	0.1	9.5	O K
1440 min Summer	6.784	0.184	0.1	9.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	23
30 min Summer	41.172	0.0	38
60 min Summer	26.915	0.0	68
120 min Summer	16.169	0.0	126
180 min Summer	12.093	0.0	186
240 min Summer	9.779	0.0	246
360 min Summer	7.145	0.0	366
480 min Summer	5.894	0.0	484
600 min Summer	4.759	0.0	604
720 min Summer	4.097	0.0	722
960 min Summer	3.241	0.0	898
1440 min Summer	2.334	0.0	1116

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 5	
Burgess Hill, BN43 6LB	1 in 10 yr	
Date 16/12/2021 15:28	Designed by mroberts	
File Zone 5.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.775	0.175	0.1	8.7	O K
2880 min Summer	6.767	0.167	0.1	8.3	O K
4320 min Summer	6.755	0.155	0.1	7.7	O K
5760 min Summer	6.746	0.146	0.1	7.2	O K
7200 min Summer	6.738	0.138	0.1	6.9	O K
8640 min Summer	6.732	0.132	0.1	6.5	O K
10080 min Summer	6.726	0.126	0.1	6.3	O K
15 min Winter	6.686	0.086	0.1	4.3	O K
30 min Winter	6.713	0.113	0.1	5.6	O K
60 min Winter	6.781	0.141	0.1	7.0	O K
120 min Winter	6.772	0.172	0.1	8.5	O K
180 min Winter	6.790	0.190	0.1	9.4	O K
240 min Winter	6.801	0.201	0.1	10.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	1.694	0.0	1500
2880 min Summer	1.362	0.0	1908
4320 min Summer	1.021	0.0	2728
5760 min Summer	0.845	0.0	3528
7200 min Summer	0.738	0.0	4328
8640 min Summer	0.666	0.0	5104
10080 min Summer	0.615	0.0	5944
15 min Winter	62.552	0.0	23
30 min Winter	41.172	0.0	37
60 min Winter	26.815	0.0	66
120 min Winter	18.169	0.0	124
180 min Winter	12.093	0.0	184
240 min Winter	9.770	0.0	242

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 5	
Burgess Hill, BN43 6LB	1 in 10 yr	
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File Zone 5.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	6.813	0.213	0.1	10.6	O K
480 min Winter	6.819	0.219	0.1	10.9	O K
600 min Winter	6.822	0.222	0.1	11.0	O K
720 min Winter	6.822	0.222	0.1	11.0	O K
960 min Winter	6.820	0.220	0.1	10.9	O K
1440 min Winter	6.811	0.211	0.1	10.5	O K
2160 min Winter	6.799	0.199	0.1	9.9	O K
2880 min Winter	6.787	0.187	0.1	9.3	O K
4320 min Winter	6.767	0.167	0.1	8.3	O K
5760 min Winter	6.749	0.149	0.1	7.4	O K
7200 min Winter	6.734	0.134	0.1	6.7	O K
8640 min Winter	6.722	0.122	0.1	6.0	O K
10080 min Winter	6.711	0.111	0.1	5.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	7.145	0.0	356
480 min Winter	5.684	0.0	474
600 min Winter	4.750	0.0	588
720 min Winter	4.097	0.0	702
960 min Winter	3.241	0.0	922
1440 min Winter	2.334	0.0	1360
2160 min Winter	1.694	0.0	1828
2880 min Winter	1.362	0.0	2084
4320 min Winter	1.021	0.0	2984
5760 min Winter	0.845	0.0	3808
7200 min Winter	0.738	0.0	4616
8640 min Winter	0.666	0.0	5448
10080 min Winter	0.615	0.0	6248

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 5	
Burgess Hill, BN43 6LB	1 in 10 yr	
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File Zone 5.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEB	Data Type	Point	Cv (Winter)	0.840	
Return Period (years)	10	Summer Storms	Yes	Shortest Storm (mins)	15	
FEB Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080	
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change %	40

Time Area Diagram

Total Area (ha) 0.033

Time (mins)	Area	Time (mins)	Area
From:	To: (ha)	From:	To: (ha)
0	4 0.009	4	8 0.024

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 5	
Burgess Hill, BN43 6LB	1 in 10 yr	
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File Zone 5.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 7.215

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.600	Depression Storage (mm)	0
Max Percolation (l/s)	46.0	Width (m)	7.2	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	23.0	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 6	
Burgess Hill, BN43 6LB	1 in 10 yrs	
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File Zone 6.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Half Drain Time : 931 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.064	0.114	0.2	6.8	O K
30 min Summer	6.099	0.149	0.2	8.9	O K
60 min Summer	6.136	0.186	0.2	11.0	O K
120 min Summer	6.176	0.226	0.2	13.4	O K
180 min Summer	6.197	0.247	0.2	14.6	O K
240 min Summer	6.210	0.260	0.2	15.4	O K
360 min Summer	6.223	0.272	0.2	16.1	O K
480 min Summer	6.225	0.275	0.2	16.3	O K
600 min Summer	6.224	0.274	0.2	16.2	O K
720 min Summer	6.221	0.271	0.2	16.0	O K
960 min Summer	6.213	0.263	0.2	15.6	O K
1440 min Summer	6.198	0.248	0.2	14.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	22
30 min Summer	41.172	0.0	37
60 min Summer	26.915	0.0	66
120 min Summer	16.169	0.0	126
180 min Summer	12.093	0.0	186
240 min Summer	9.779	0.0	244
360 min Summer	7.145	0.0	364
480 min Summer	5.694	0.0	482
600 min Summer	4.759	0.0	600
720 min Summer	4.097	0.0	704
960 min Summer	3.241	0.0	804
1440 min Summer	2.334	0.0	1044

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 6	
Burgess Hill, BN43 6LB	1 in 10 yrs	
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File Zone 6.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.180	0.230	0.2	13.6	O K
2880 min Summer	6.164	0.214	0.2	12.7	O K
4320 min Summer	6.140	0.190	0.2	11.3	O K
5760 min Summer	6.121	0.171	0.2	10.1	O K
7200 min Summer	6.106	0.156	0.2	9.2	O K
8640 min Summer	6.093	0.143	0.2	8.5	O K
10080 min Summer	6.082	0.132	0.2	7.9	O K
15 min Winter	6.078	0.128	0.2	7.6	O K
30 min Winter	6.118	0.168	0.2	9.9	O K
60 min Winter	6.159	0.209	0.2	12.4	O K
120 min Winter	6.204	0.254	0.2	15.1	O K
180 min Winter	6.229	0.279	0.2	16.5	O K
240 min Winter	6.244	0.294	0.2	17.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	1.594	0.0	1452
2880 min Summer	1.362	0.0	1852
4320 min Summer	1.021	0.0	2680
5760 min Summer	0.845	0.0	3456
7200 min Summer	0.738	0.0	4248
8640 min Summer	0.666	0.0	5008
10080 min Summer	0.615	0.0	5744
15 min Winter	62.552	0.0	22
30 min Winter	41.172	0.0	37
60 min Winter	26.815	0.0	66
120 min Winter	18.169	0.0	124
180 min Winter	12.093	0.0	182
240 min Winter	9.770	0.0	240

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 6	
Burgess Hill, BN43 6LB	1 in 10 yrs	
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File Zone 6.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	6.269	0.310	0.2	18.4	O K
480 min Winter	6.265	0.315	0.2	18.7	O K
600 min Winter	6.256	0.316	0.2	18.7	O K
720 min Winter	6.264	0.314	0.2	18.6	O K
960 min Winter	6.256	0.306	0.2	18.1	O K
1440 min Winter	6.236	0.286	0.2	16.9	O K
2160 min Winter	6.219	0.269	0.2	15.4	O K
2880 min Winter	6.186	0.236	0.2	14.0	O K
4320 min Winter	6.146	0.196	0.2	11.6	O K
5760 min Winter	6.112	0.162	0.2	9.6	O K
7200 min Winter	6.085	0.135	0.2	8.0	O K
8640 min Winter	6.063	0.113	0.2	6.7	O K
10080 min Winter	6.044	0.094	0.2	5.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	7.145	0.0	356
480 min Winter	5.684	0.0	472
600 min Winter	4.750	0.0	594
720 min Winter	4.097	0.0	696
960 min Winter	3.241	0.0	906
1440 min Winter	2.334	0.0	1128
2160 min Winter	1.694	0.0	1586
2880 min Winter	1.362	0.0	2024
4320 min Winter	1.021	0.0	2692
5760 min Winter	0.845	0.0	3688
7200 min Winter	0.738	0.0	4864
8640 min Winter	0.666	0.0	6184
10080 min Winter	0.615	0.0	5856

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 6	
Burgess Hill, BN43 6LB	1 in 10 yrs	
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File Zone 6.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEB	Data Type	Point	Cv (Winter)	0.840	
Return Period (years)	10	Summer Storms	Yes	Shortest Storm (mins)	15	
FEB Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080	
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change %	40

Time Area Diagram

Total Area (ha) 0.059

Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:
	(ha)		(ha)
0	4 0.029	4	8 0.030

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 6	
Burgess Hill, BN43 6LB	1 in 10 yrs	
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File Zone 6.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 5.327

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00612	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	5.950	Depression Storage (mm)	0
Max Percolation (l/s)	54.9	Width (m)	7.9	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	25.0	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 7	
Burgess Hill, BN43 6LB	1 in 10yr	
Date 16/12/2021 15:38	Designed by mroberts	
File Zone 7.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Half Drain Time : 1222 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.175	0.079	0.1	6.8	O K
30 min Summer	6.204	0.104	0.1	8.9	O K
60 min Summer	6.230	0.130	0.1	11.1	O K
120 min Summer	6.258	0.158	0.1	13.6	O K
180 min Summer	6.274	0.174	0.1	15.0	O K
240 min Summer	6.284	0.184	0.1	15.8	O K
360 min Summer	6.295	0.195	0.1	16.8	O K
480 min Summer	6.300	0.200	0.1	17.2	O K
600 min Summer	6.301	0.201	0.1	17.3	O K
720 min Summer	6.301	0.201	0.1	17.3	O K
960 min Summer	6.296	0.198	0.1	17.0	O K
1440 min Summer	6.291	0.191	0.1	16.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	23
30 min Summer	41.172	0.0	37
60 min Summer	26.915	0.0	66
120 min Summer	16.169	0.0	126
180 min Summer	12.093	0.0	186
240 min Summer	9.779	0.0	246
360 min Summer	7.145	0.0	364
480 min Summer	5.694	0.0	484
600 min Summer	4.759	0.0	602
720 min Summer	4.097	0.0	722
960 min Summer	3.241	0.0	916
1440 min Summer	2.334	0.0	1139

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Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 7	
Burgess Hill, BN43 6LB	1 in 10yr	
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File Zone 7.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
2160 min Summer	6.282	0.182	0.1	15.7	O K
2880 min Summer	6.275	0.175	0.1	15.0	O K
4320 min Summer	6.263	0.163	0.1	14.0	O K
5760 min Summer	6.253	0.153	0.1	13.2	O K
7200 min Summer	6.246	0.146	0.1	12.5	O K
8640 min Summer	6.240	0.140	0.1	12.0	O K
10080 min Summer	6.235	0.135	0.1	11.6	O K
15 min Winter	6.189	0.089	0.1	7.6	O K
30 min Winter	6.216	0.116	0.1	10.0	O K
60 min Winter	6.246	0.146	0.1	12.5	O K
120 min Winter	6.278	0.178	0.1	15.3	O K
180 min Winter	6.296	0.196	0.1	16.9	O K
240 min Winter	6.308	0.208	0.1	17.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
2160 min Summer	1.694	0.0	1516
2880 min Summer	1.362	0.0	1932
4320 min Summer	1.021	0.0	2764
5760 min Summer	0.845	0.0	3568
7200 min Summer	0.738	0.0	4392
8640 min Summer	0.666	0.0	5184
10080 min Summer	0.615	0.0	5952
15 min Winter	62.552	0.0	22
30 min Winter	41.172	0.0	37
60 min Winter	26.815	0.0	66
120 min Winter	18.169	0.0	124
180 min Winter	12.093	0.0	182
240 min Winter	9.779	0.0	242

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Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 7	
Burgess Hill, BN43 6LB	1 in 10yr	
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File Zone 7.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	6.321	0.221	0.1	19.0	O K
480 min Winter	6.327	0.227	0.1	19.3	O K
600 min Winter	6.330	0.230	0.1	19.3	O K
720 min Winter	6.331	0.231	0.1	19.9	O K
960 min Winter	6.329	0.229	0.1	19.7	O K
1440 min Winter	6.326	0.226	0.1	18.9	O K
2160 min Winter	6.308	0.208	0.1	17.9	O K
2880 min Winter	6.296	0.196	0.1	16.9	O K
4320 min Winter	6.276	0.176	0.1	15.1	O K
5760 min Winter	6.259	0.159	0.1	13.6	O K
7200 min Winter	6.244	0.144	0.1	12.4	O K
8640 min Winter	6.231	0.131	0.1	11.3	O K
10080 min Winter	6.220	0.120	0.1	10.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	7.145	0.0	356
480 min Winter	5.684	0.0	474
600 min Winter	4.750	0.0	588
720 min Winter	4.097	0.0	702
960 min Winter	3.241	0.0	924
1440 min Winter	2.334	0.0	1326
2160 min Winter	1.694	0.0	1644
2880 min Winter	1.362	0.0	2104
4320 min Winter	1.021	0.0	2988
5760 min Winter	0.845	0.0	3856
7200 min Winter	0.738	0.0	4680
8640 min Winter	0.666	0.0	5456
10080 min Winter	0.615	0.0	6256

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Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 7	
Burgess Hill, BN43 6LB	1 in 10yr	
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File Zone 7.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEB	Data Type	Point	Cv (Winter)	0.840	
Return Period (years)	10	Summer Storms	Yes	Shortest Storm (mins)	15	
FEB Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080	
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.059

Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:
	(ha)		(ha)
0	4 0.029	4	8 0.030

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 7	
Burgess Hill, BN43 6LB	1 in 10yr	
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File Zone 7.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 6.950

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.100	Depression Storage (mm)	0
Max Percolation (l/s)	79.6	Width (m)	6.1	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	47.0	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 8	
Burgess Hill, BN43 6LB	1 in 10 yrs	
Date 16/12/2021 16:43	Designed by mroberts	
File Zone 8.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Half Drain Time : 1106 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.461	0.061	0.1	4.0	O K
30 min Summer	6.485	0.085	0.1	9.6	O K
60 min Summer	6.510	0.110	0.1	7.2	O K
120 min Summer	6.538	0.138	0.1	9.0	O K
180 min Summer	6.553	0.153	0.1	10.1	O K
240 min Summer	6.563	0.163	0.1	10.7	O K
360 min Summer	6.574	0.174	0.1	11.4	O K
480 min Summer	6.579	0.179	0.1	11.7	O K
600 min Summer	6.580	0.180	0.1	11.9	O K
720 min Summer	6.580	0.180	0.1	11.9	O K
960 min Summer	6.576	0.176	0.1	11.7	O K
1440 min Summer	6.573	0.173	0.1	11.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	23
30 min Summer	41.172	0.0	37
60 min Summer	26.915	0.0	66
120 min Summer	16.169	0.0	126
180 min Summer	12.093	0.0	186
240 min Summer	9.779	0.0	244
360 min Summer	7.145	0.0	364
480 min Summer	5.694	0.0	482
600 min Summer	4.759	0.0	602
720 min Summer	4.097	0.0	720
960 min Summer	3.241	0.0	856
1440 min Summer	2.334	0.0	1086

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 8	
Burgess Hill, BN43 6LB	1 in 10 yrs	
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File Zone 8.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.566	0.166	0.1	10.9	O K
2880 min Summer	6.559	0.159	0.1	10.4	O K
4320 min Summer	6.547	0.147	0.1	9.7	O K
5760 min Summer	6.537	0.137	0.1	9.0	O K
7200 min Summer	6.529	0.129	0.1	8.5	O K
8640 min Summer	6.522	0.122	0.1	8.0	O K
10080 min Summer	6.516	0.116	0.1	7.6	O K
15 min Winter	6.470	0.070	0.1	4.6	O K
30 min Winter	6.487	0.087	0.1	6.4	O K
60 min Winter	6.525	0.125	0.1	8.2	O K
120 min Winter	6.557	0.157	0.1	10.3	O K
180 min Winter	6.575	0.175	0.1	11.5	O K
240 min Winter	6.586	0.186	0.1	12.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	1.694	0.0	1476
2880 min Summer	1.362	0.0	1906
4320 min Summer	1.021	0.0	2724
5760 min Summer	0.845	0.0	3920
7200 min Summer	0.738	0.0	4320
8640 min Summer	0.666	0.0	5096
10080 min Summer	0.615	0.0	5848
15 min Winter	62.552	0.0	22
30 min Winter	41.172	0.0	37
60 min Winter	26.815	0.0	66
120 min Winter	18.169	0.0	124
180 min Winter	12.093	0.0	182
240 min Winter	9.770	0.0	240

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 8	
Burgess Hill, BN43 6LB	1 in 10 yrs	
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File Zone 8.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	6.599	0.199	0.1	13.1	O K
480 min Winter	6.605	0.205	0.1	13.5	O K
600 min Winter	6.608	0.208	0.1	13.7	O K
720 min Winter	6.609	0.209	0.1	13.7	O K
960 min Winter	6.607	0.207	0.1	13.6	O K
1440 min Winter	6.598	0.198	0.1	13.0	O K
2160 min Winter	6.588	0.188	0.1	12.3	O K
2880 min Winter	6.576	0.176	0.1	11.6	O K
4320 min Winter	6.556	0.156	0.1	10.2	O K
5760 min Winter	6.538	0.138	0.1	9.0	O K
7200 min Winter	6.522	0.122	0.1	8.0	O K
8640 min Winter	6.509	0.109	0.1	7.1	O K
10080 min Winter	6.497	0.097	0.1	6.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	7.145	0.0	358
480 min Winter	5.684	0.0	472
600 min Winter	4.750	0.0	588
720 min Winter	4.097	0.0	700
960 min Winter	3.241	0.0	916
1440 min Winter	2.334	0.0	1168
2160 min Winter	1.694	0.0	1626
2880 min Winter	1.362	0.0	2076
4320 min Winter	1.021	0.0	2940
5760 min Winter	0.845	0.0	3752
7200 min Winter	0.738	0.0	4544
8640 min Winter	0.666	0.0	5360
10080 min Winter	0.615	0.0	6056

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Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 8	
Burgess Hill, BN43 6LB	1 in 10 yrs	
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File Zone 8.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEB	Data Type	Point	Cv (Winter)	0.840	
Return Period (years)	10	Summer Storms	Yes	Shortest Storm (mins)	15	
FEB Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080	
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.044

Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:
	(ha)		(ha)
0	4 0.022	4	8 0.022

GTA Civils Ltd

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Gloucester House

North End Road, Yapton

66a Church Walk

11228 FP Zone 8

Burgess Hill, BN43 6LB

1 in 10 yrs

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Designed by mroberts

File Zone 8.SRCX

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XP Solutions

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Model Details

Storage is Online Cover Level (m) 7.139

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.400	Depression Storage (mm)	5
Max Percolation (l/s)	60.8	Width (m)	6.0	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	36.5	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	North End Road, Yapton 11228 PP Zone 9 1 in 10 yrs	
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XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Half Drain Time : 1312 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.343	0.073	0.2	7.0	O K
30 min Summer	6.370	0.100	0.2	9.7	O K
60 min Summer	6.400	0.130	0.2	12.6	O K
120 min Summer	6.432	0.162	0.2	15.7	O K
180 min Summer	6.451	0.181	0.2	17.6	O K
240 min Summer	6.463	0.193	0.2	18.7	O K
360 min Summer	6.476	0.206	0.2	20.0	O K
480 min Summer	6.483	0.213	0.2	20.6	O K
600 min Summer	6.486	0.216	0.2	20.9	O K
720 min Summer	6.487	0.217	0.2	21.0	O K
960 min Summer	6.485	0.215	0.2	20.8	O K
1440 min Summer	6.479	0.209	0.2	20.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	26
30 min Summer	41.172	0.0	41
60 min Summer	26.015	0.0	70
120 min Summer	16.169	0.0	130
180 min Summer	12.093	0.0	188
240 min Summer	9.770	0.0	248
360 min Summer	7.145	0.0	366
480 min Summer	5.684	0.0	486
600 min Summer	4.750	0.0	604
720 min Summer	4.097	0.0	722
960 min Summer	3.241	0.0	952
1440 min Summer	2.334	0.0	1158

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Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	North End Road, Yapton 11228 PP Zone 9 1 in 10 yrs	
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XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
2160 min Summer	6.472	0.202	0.2	19.6	O K
2880 min Summer	6.465	0.195	0.2	18.9	O K
4320 min Summer	6.454	0.184	0.2	17.8	O K
5760 min Summer	6.445	0.175	0.2	16.9	O K
7200 min Summer	6.437	0.167	0.2	16.2	O K
8640 min Summer	6.431	0.161	0.2	15.6	O K
10080 min Summer	6.426	0.156	0.2	15.1	O K
15 min Winter	6.353	0.083	0.2	8.1	O K
30 min Winter	6.385	0.115	0.2	11.1	O K
60 min Winter	6.418	0.148	0.2	14.3	O K
120 min Winter	6.455	0.185	0.2	17.9	O K
180 min Winter	6.476	0.206	0.2	20.0	O K
240 min Winter	6.490	0.220	0.2	21.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
2160 min Summer	1.694	0.0	1540
2880 min Summer	1.362	0.0	1944
4320 min Summer	1.021	0.0	2772
5760 min Summer	0.845	0.0	3584
7200 min Summer	0.738	0.0	4400
8640 min Summer	0.666	0.0	5192
10080 min Summer	0.615	0.0	5960
15 min Winter	62.552	0.0	26
30 min Winter	41.172	0.0	41
60 min Winter	26.015	0.0	70
120 min Winter	16.169	0.0	128
180 min Winter	12.093	0.0	186
240 min Winter	9.770	0.0	244

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Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	North End Road, Yapton 11228 PP Zone 9 1 in 10 yrs	
Date 07/01/2022 12:39 File Zone 9 rev A.SRCX	Designed by MRoberts Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	6.506	0.236	0.2	22.8	O K
480 min Winter	6.514	0.244	0.2	23.6	O K
600 min Winter	6.518	0.248	0.2	24.0	O K
720 min Winter	6.520	0.250	0.2	24.2	O K
960 min Winter	6.520	0.250	0.2	24.2	O K
1440 min Winter	6.512	0.242	0.2	23.5	O K
2160 min Winter	6.501	0.231	0.2	22.4	O K
2880 min Winter	6.490	0.220	0.2	21.4	O K
4320 min Winter	6.471	0.201	0.2	19.5	O K
5760 min Winter	6.453	0.183	0.2	17.7	O K
7200 min Winter	6.438	0.168	0.2	16.3	O K
8640 min Winter	6.424	0.154	0.2	15.0	O K
10080 min Winter	6.413	0.143	0.2	13.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	7.145	0.0	360
480 min Winter	5.684	0.0	476
600 min Winter	4.750	0.0	592
720 min Winter	4.097	0.0	708
960 min Winter	3.241	0.0	928
1440 min Winter	2.334	0.0	1344
2160 min Winter	1.694	0.0	1664
2880 min Winter	1.362	0.0	2128
4320 min Winter	1.021	0.0	3028
5760 min Winter	0.845	0.0	3872
7200 min Winter	0.738	0.0	4752
8640 min Winter	0.666	0.0	5536
10080 min Winter	0.615	0.0	6352

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Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	North End Road, Yapton 11228 PP Zone 9 1 in 10 yrs	
Date 07/01/2022 12:39 File Zone 9 rev A.SRCX	Designed by MRoberts Checked by	
XP Solutions	Source Control 2020.1.3	

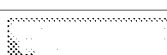
Rainfall Details

Rainfall Model	FEH	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
FEH Rainfall Version	2013	Cv (Winter)	0.840
Site Location	GB 497736 103464 SU 97736 03464	Shortest Storm (mins)	15
Data Type	Point	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.075

Time (mins) Area			Time (mins) Area			Time (mins) Area		
From:	To:	(ha)	From:	To:	(ha)	From:	To:	(ha)
0	4	0.025	4	8	0.025	8	12	0.025

GTA Civils Ltd		Page 5
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	North End Road, Yapton 11228 PP Zone 9 1 in 10 yrs	
Date 07/01/2022 12:39 File Zone 9 rev A.SRCX	Designed by MRoberts Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 6.952

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	0.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.270	Depression Storage (mm)	5
Max Percolation (l/s)	89.8	Width (m)	6.3	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	51.3	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 10	
Burgess Hill, BN43 6LB	1 in 10 yrs	
Date 16/12/2021 16:15	Designed by mroberts	
File Zone 10.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Half Drain Time : 1179 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.377	0.077	0.1	3.7	O K
30 min Summer	6.401	0.101	0.1	4.8	O K
60 min Summer	6.426	0.126	0.1	6.0	O K
120 min Summer	6.453	0.153	0.1	7.4	O K
180 min Summer	6.469	0.169	0.1	8.1	O K
240 min Summer	6.478	0.178	0.1	8.6	O K
360 min Summer	6.489	0.189	0.1	9.1	O K
480 min Summer	6.493	0.193	0.1	9.3	O K
600 min Summer	6.495	0.195	0.1	9.3	O K
720 min Summer	6.494	0.194	0.1	9.3	O K
960 min Summer	6.491	0.191	0.1	9.2	O K
1440 min Summer	6.484	0.184	0.1	8.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	23
30 min Summer	41.172	0.0	37
60 min Summer	26.915	0.0	66
120 min Summer	16.169	0.0	126
180 min Summer	12.093	0.0	186
240 min Summer	9.779	0.0	246
360 min Summer	7.145	0.0	364
480 min Summer	5.894	0.0	484
600 min Summer	4.759	0.0	602
720 min Summer	4.097	0.0	722
960 min Summer	3.241	0.0	898
1440 min Summer	2.334	0.0	1116

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 10	
Burgess Hill, BN43 6LB	1 in 10 yrs	
Date 16/12/2021 16:15	Designed by mroberts	
File Zone 10.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.476	0.176	0.1	8.4	O K
2880 min Summer	6.468	0.168	0.1	8.1	O K
4320 min Summer	6.456	0.156	0.1	7.5	O K
5760 min Summer	6.446	0.146	0.1	7.0	O K
7200 min Summer	6.439	0.139	0.1	6.7	O K
8640 min Summer	6.433	0.133	0.1	6.4	O K
10080 min Summer	6.427	0.127	0.1	6.1	O K
15 min Winter	6.386	0.086	0.1	4.1	O K
30 min Winter	6.413	0.113	0.1	5.4	O K
60 min Winter	6.441	0.141	0.1	6.8	O K
120 min Winter	6.473	0.173	0.1	8.3	O K
180 min Winter	6.490	0.190	0.1	9.1	O K
240 min Winter	6.502	0.202	0.1	9.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	1.694	0.0	1512
2880 min Summer	1.362	0.0	1908
4320 min Summer	1.021	0.0	2728
5760 min Summer	0.845	0.0	3528
7200 min Summer	0.738	0.0	4328
8640 min Summer	0.666	0.0	5104
10080 min Summer	0.615	0.0	5944
15 min Winter	62.552	0.0	22
30 min Winter	41.172	0.0	37
60 min Winter	26.815	0.0	66
120 min Winter	18.169	0.0	124
180 min Winter	12.093	0.0	182
240 min Winter	9.770	0.0	242

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 10	
Burgess Hill, BN43 6LB	1 in 10 yrs	
Date 16/12/2021 16:15	Designed by mroberts	
File Zone 10.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	6.514	0.214	0.1	10.3	O K
480 min Winter	6.520	0.220	0.1	10.6	O K
600 min Winter	6.523	0.223	0.1	10.7	O K
720 min Winter	6.523	0.223	0.1	10.7	O K
960 min Winter	6.521	0.221	0.1	10.6	O K
1440 min Winter	6.512	0.212	0.1	10.2	O K
2160 min Winter	6.500	0.200	0.1	9.6	O K
2880 min Winter	6.488	0.188	0.1	9.0	O K
4320 min Winter	6.468	0.168	0.1	8.1	O K
5760 min Winter	6.450	0.150	0.1	7.2	O K
7200 min Winter	6.435	0.135	0.1	6.5	O K
8640 min Winter	6.423	0.123	0.1	5.9	O K
10080 min Winter	6.412	0.112	0.1	5.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	7.145	0.0	356
480 min Winter	5.684	0.0	474
600 min Winter	4.750	0.0	588
720 min Winter	4.097	0.0	702
960 min Winter	3.241	0.0	922
1440 min Winter	2.334	0.0	1302
2160 min Winter	1.694	0.0	1828
2880 min Winter	1.362	0.0	2084
4320 min Winter	1.021	0.0	2984
5760 min Winter	0.845	0.0	3808
7200 min Winter	0.738	0.0	4616
8640 min Winter	0.666	0.0	5448
10080 min Winter	0.615	0.0	6248

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 10	
Burgess Hill, BN43 6LB	1 in 10 yrs	
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File Zone 10.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEB	Data Type	Point	Cv (Winter)	0.840	
Return Period (years)	10	Summer Storms	Yes	Shortest Storm (mins)	15	
FEB Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080	
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change %	40

Time Area Diagram

Total Area (ha) 0.032

Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:
	(ha)		(ha)
0	4 0.015	4	8 0.017

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 10	
Burgess Hill, BN43 6LB	1 in 10 yrs	
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File Zone 10.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 7.050

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.300	Depression Storage (mm)	0
Max Percolation (l/s)	44.4	Width (m)	10.0	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	16.0	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 11	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:09	Designed by mroberts	
File Zone 11.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Half Drain Time : 640 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	4.691	0.041	0.0	1.2	O K
30 min Summer	4.704	0.054	0.0	1.5	O K
60 min Summer	4.717	0.067	0.0	1.9	O K
120 min Summer	4.730	0.080	0.0	2.2	O K
180 min Summer	4.738	0.088	0.0	2.4	O K
240 min Summer	4.742	0.092	0.0	2.6	O K
360 min Summer	4.745	0.095	0.0	2.7	O K
480 min Summer	4.745	0.095	0.0	2.7	O K
600 min Summer	4.745	0.095	0.0	2.6	O K
720 min Summer	4.744	0.094	0.0	2.6	O K
960 min Summer	4.742	0.092	0.0	2.6	O K
1440 min Summer	4.738	0.088	0.0	2.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	19
30 min Summer	41.172	0.0	33
60 min Summer	26.915	0.0	64
120 min Summer	16.169	0.0	122
180 min Summer	12.093	0.0	182
240 min Summer	9.779	0.0	242
360 min Summer	7.145	0.0	360
480 min Summer	5.894	0.0	486
600 min Summer	4.759	0.0	612
720 min Summer	4.097	0.0	672
960 min Summer	3.241	0.0	694
1440 min Summer	2.334	0.0	966

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 11	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:09	Designed by mroberts	
File Zone 11.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	4.731	0.081	0.0	2.3	O K
2880 min Summer	4.725	0.075	0.0	2.1	O K
4320 min Summer	4.718	0.066	0.0	1.8	O K
5760 min Summer	4.709	0.059	0.0	1.6	O K
7200 min Summer	4.704	0.054	0.0	1.5	O K
8640 min Summer	4.701	0.051	0.0	1.4	O K
10080 min Summer	4.699	0.049	0.0	1.4	O K
15 min Winter	4.696	0.046	0.0	1.3	O K
30 min Winter	4.710	0.060	0.0	1.7	O K
60 min Winter	4.725	0.075	0.0	2.1	O K
120 min Winter	4.741	0.091	0.0	2.5	O K
180 min Winter	4.749	0.099	0.0	2.8	O K
240 min Winter	4.754	0.104	0.0	2.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	1.694	0.0	1364
2880 min Summer	1.362	0.0	1760
4320 min Summer	1.021	0.0	2548
5760 min Summer	0.845	0.0	3280
7200 min Summer	0.738	0.0	3968
8640 min Summer	0.666	0.0	4672
10080 min Summer	0.615	0.0	5352
15 min Winter	62.552	0.0	19
30 min Winter	41.172	0.0	33
60 min Winter	26.815	0.0	62
120 min Winter	18.169	0.0	120
180 min Winter	12.093	0.0	178
240 min Winter	9.770	0.0	236

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 11	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:09	Designed by mroberts	
File Zone 11.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	4.759	0.109	0.0	3.0	O K
480 min Winter	4.760	0.110	0.0	3.1	O K
600 min Winter	4.759	0.109	0.0	3.0	O K
720 min Winter	4.757	0.107	0.0	3.0	O K
960 min Winter	4.754	0.104	0.0	2.9	O K
1440 min Winter	4.748	0.098	0.0	2.7	O K
2160 min Winter	4.737	0.087	0.0	2.4	O K
2880 min Winter	4.728	0.078	0.0	2.2	O K
4320 min Winter	4.713	0.063	0.0	1.7	O K
5760 min Winter	4.702	0.052	0.0	1.5	O K
7200 min Winter	4.697	0.047	0.0	1.3	O K
8640 min Winter	4.694	0.044	0.0	1.2	O K
10080 min Winter	4.692	0.042	0.0	1.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	7.145	0.0	352
480 min Winter	5.684	0.0	462
600 min Winter	4.750	0.0	570
720 min Winter	4.097	0.0	666
960 min Winter	3.241	0.0	759
1440 min Winter	2.334	0.0	1052
2160 min Winter	1.694	0.0	1492
2880 min Winter	1.362	0.0	1900
4320 min Winter	1.021	0.0	2676
5760 min Winter	0.845	0.0	3344
7200 min Winter	0.738	0.0	4040
8640 min Winter	0.666	0.0	4760
10080 min Winter	0.615	0.0	5456

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 11	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:09	Designed by mroberts	
File Zone 11.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEB	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	10	Summer Storms	Yes	Shortest Storm (mins)	15
FEB Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change %
					40

Time Area Diagram

Total Area (ha) 0.010

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

0	4 0.010
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GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 11	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:09	Designed by mroberts	
File Zone 11.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 5.350

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00309	Porosity	0.30	Slope (1:X)	0.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	4.650	Depression Storage (mm)	0
Max Percolation (l/s)	25.8	Width (m)	6.0	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	15.5	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 12	
Burgess Hill, BN43 6LB	1 in 10 yrs	
Date 16/12/2021 16:01	Designed by mroberts	
File Zone 12.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Half Drain Time : 686 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.094	0.044	0.1	2.3	O K
30 min Summer	6.107	0.057	0.1	3.0	O K
60 min Summer	6.121	0.071	0.1	3.7	O K
120 min Summer	6.135	0.085	0.1	4.5	O K
180 min Summer	6.143	0.093	0.1	4.9	O K
240 min Summer	6.148	0.098	0.1	5.2	O K
360 min Summer	6.151	0.101	0.1	5.4	O K
480 min Summer	6.152	0.102	0.1	5.4	O K
600 min Summer	6.151	0.101	0.1	5.3	O K
720 min Summer	6.150	0.100	0.1	5.3	O K
960 min Summer	6.146	0.098	0.1	5.2	O K
1440 min Summer	6.144	0.094	0.1	5.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	19
30 min Summer	41.172	0.0	33
60 min Summer	26.915	0.0	64
120 min Summer	16.169	0.0	122
180 min Summer	12.093	0.0	182
240 min Summer	9.779	0.0	242
360 min Summer	7.145	0.0	360
480 min Summer	5.694	0.0	480
600 min Summer	4.759	0.0	624
720 min Summer	4.097	0.0	686
960 min Summer	3.241	0.0	796
1440 min Summer	2.334	0.0	979

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 12	
Burgess Hill, BN43 6LB	1 in 10 yrs	
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File Zone 12.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
2160 min Summer	6.137	0.087	0.1	4.6	O K
2880 min Summer	6.131	0.081	0.1	4.3	O K
4320 min Summer	6.121	0.071	0.1	3.8	O K
5760 min Summer	6.114	0.064	0.1	3.4	O K
7200 min Summer	6.109	0.059	0.1	3.1	O K
8640 min Summer	6.105	0.055	0.1	2.9	O K
10080 min Summer	6.102	0.052	0.1	2.7	O K
15 min Winter	6.099	0.049	0.1	2.6	O K
30 min Winter	6.114	0.064	0.1	3.4	O K
60 min Winter	6.129	0.079	0.1	4.2	O K
120 min Winter	6.146	0.096	0.1	5.1	O K
180 min Winter	6.155	0.105	0.1	5.6	O K
240 min Winter	6.161	0.111	0.1	5.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
2160 min Summer	1.694	0.0	1384
2880 min Summer	1.362	0.0	1784
4320 min Summer	1.021	0.0	2552
5760 min Summer	0.845	0.0	3288
7200 min Summer	0.738	0.0	4032
8640 min Summer	0.666	0.0	4752
10080 min Summer	0.615	0.0	5448
15 min Winter	62.552	0.0	19
30 min Winter	41.172	0.0	33
60 min Winter	26.815	0.0	62
120 min Winter	18.169	0.0	120
180 min Winter	12.093	0.0	180
240 min Winter	9.770	0.0	238

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 12	
Burgess Hill, BN43 6LB	1 in 10 yrs	
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File Zone 12.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	6.166	0.116	0.1	6.1	O K
480 min Winter	6.167	0.117	0.1	6.2	O K
600 min Winter	6.166	0.116	0.1	6.2	O K
720 min Winter	6.165	0.115	0.1	6.1	O K
960 min Winter	6.162	0.112	0.1	5.9	O K
1440 min Winter	6.155	0.105	0.1	5.5	O K
2160 min Winter	6.144	0.094	0.1	5.0	O K
2880 min Winter	6.135	0.085	0.1	4.6	O K
4320 min Winter	6.119	0.069	0.1	3.6	O K
5760 min Winter	6.107	0.057	0.1	3.0	O K
7200 min Winter	6.100	0.050	0.1	2.6	O K
8640 min Winter	6.096	0.046	0.1	2.5	O K
10080 min Winter	6.094	0.044	0.1	2.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	7.145	0.0	352
480 min Winter	5.684	0.0	464
600 min Winter	4.750	0.0	572
720 min Winter	4.097	0.0	674
960 min Winter	3.241	0.0	760
1440 min Winter	2.334	0.0	1064
2160 min Winter	1.694	0.0	1496
2880 min Winter	1.362	0.0	1928
4320 min Winter	1.021	0.0	2684
5760 min Winter	0.845	0.0	3400
7200 min Winter	0.738	0.0	4040
8640 min Winter	0.666	0.0	4760
10080 min Winter	0.615	0.0	5544

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 12	
Burgess Hill, BN43 6LB	1 in 10 yrs	
Date 16/12/2021 16:01	Designed by mroberts	
File Zone 12.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEB	Data Type	Point	Cv (Winter)	0.840	
Return Period (years)	10	Summer Storms	Yes	Shortest Storm (mins)	15	
FEB Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080	
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	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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GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 12	
Burgess Hill, BN43 6LB	1 in 10 yrs	
Date 16/12/2021 16:01	Designed by mroberts	
File Zone 12.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 5.583

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00316	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.650	Depression Storage (mm)	0
Max Percolation (l/s)	48.9	Width (m)	5.5	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	32.0	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 13	
Burgess Hill, BN43 6LB	1 in 10 yrs	
Date 16/12/2021 16:06	Designed by mroberts	
File Zone 13.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Half Drain Time : 666 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	5.698	0.043	0.0	1.2	O K
30 min Summer	5.671	0.056	0.0	1.5	O K
60 min Summer	5.684	0.069	0.0	1.9	O K
120 min Summer	5.498	0.083	0.0	2.2	O K
180 min Summer	5.706	0.091	0.0	2.5	O K
240 min Summer	5.710	0.095	0.0	2.6	O K
360 min Summer	5.714	0.099	0.0	2.7	O K
480 min Summer	5.714	0.099	0.0	2.7	O K
600 min Summer	5.714	0.099	0.0	2.7	O K
720 min Summer	5.713	0.098	0.0	2.6	O K
960 min Summer	5.711	0.096	0.0	2.6	O K
1440 min Summer	5.706	0.091	0.0	2.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	62.552	0.0	19
30 min Summer	41.172	0.0	33
60 min Summer	26.915	0.0	64
120 min Summer	16.169	0.0	122
180 min Summer	12.093	0.0	182
240 min Summer	9.779	0.0	242
360 min Summer	7.145	0.0	360
480 min Summer	5.634	0.0	476
600 min Summer	4.739	0.0	520
720 min Summer	4.097	0.0	578
960 min Summer	3.241	0.0	702
1440 min Summer	2.334	0.0	960

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 13	
Burgess Hill, BN43 6LB	1 in 10 yrs	
Date 16/12/2021 16:06	Designed by mroberts	
File Zone 13.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	5.700	0.085	0.0	2.3	O K
2880 min Summer	5.694	0.079	0.0	2.1	O K
4320 min Summer	5.684	0.069	0.0	1.9	O K
5760 min Summer	5.677	0.062	0.0	1.7	O K
7200 min Summer	5.672	0.057	0.0	1.5	O K
8640 min Summer	5.666	0.053	0.0	1.4	O K
10080 min Summer	5.665	0.050	0.0	1.4	O K
15 min Winter	5.663	0.048	0.0	1.3	O K
30 min Winter	5.677	0.062	0.0	1.7	O K
60 min Winter	5.693	0.078	0.0	2.1	O K
120 min Winter	5.709	0.094	0.0	2.5	O K
180 min Winter	5.718	0.103	0.0	2.8	O K
240 min Winter	5.723	0.108	0.0	2.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	1.694	0.0	1380
2880 min Summer	1.362	0.0	1764
4320 min Summer	1.021	0.0	2548
5760 min Summer	0.845	0.0	3288
7200 min Summer	0.738	0.0	3968
8640 min Summer	0.666	0.0	4672
10080 min Summer	0.615	0.0	5352
15 min Winter	62.552	0.0	19
30 min Winter	41.172	0.0	33
60 min Winter	26.815	0.0	62
120 min Winter	18.169	0.0	120
180 min Winter	12.093	0.0	180
240 min Winter	9.770	0.0	238

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 13	
Burgess Hill, BN43 6LB	1 in 10 yrs	
Date 16/12/2021 16:06	Designed by mroberts	
File Zone 13.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	5.728	0.113	0.0	3.0	O K
480 min Winter	5.729	0.114	0.0	3.1	O K
600 min Winter	5.728	0.113	0.0	3.1	O K
720 min Winter	5.727	0.112	0.0	3.0	O K
960 min Winter	5.724	0.109	0.0	2.9	O K
1440 min Winter	5.717	0.102	0.0	2.8	O K
2160 min Winter	5.706	0.091	0.0	2.5	O K
2880 min Winter	5.697	0.082	0.0	2.2	O K
4320 min Winter	5.681	0.066	0.0	1.6	O K
5760 min Winter	5.670	0.058	0.0	1.5	O K
7200 min Winter	5.664	0.049	0.0	1.3	O K
8640 min Winter	5.660	0.045	0.0	1.2	O K
10080 min Winter	5.658	0.043	0.0	1.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	7.145	0.0	352
480 min Winter	5.684	0.0	464
600 min Winter	4.750	0.0	572
720 min Winter	4.097	0.0	672
960 min Winter	3.241	0.0	782
1440 min Winter	2.334	0.0	1054
2160 min Winter	1.694	0.0	1492
2880 min Winter	1.362	0.0	1904
4320 min Winter	1.021	0.0	2680
5760 min Winter	0.845	0.0	3392
7200 min Winter	0.738	0.0	4040
8640 min Winter	0.666	0.0	4760
10080 min Winter	0.615	0.0	5544

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 13	
Burgess Hill, BN43 6LB	1 in 10 yrs	
Date 16/12/2021 16:06	Designed by mroberts	
File Zone 13.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEB	Data Type	Point	Cv (Winter)	0.840	
Return Period (years)	10	Summer Storms	Yes	Shortest Storm (mins)	15	
FEB Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080	
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change %	40

Time Area Diagram

Total Area (ha) 0.010

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

0	4 0.010
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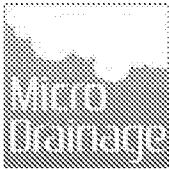
GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 13	
Burgess Hill, BN43 6LB	1 in 10 yrs	
Date 16/12/2021 16:06	Designed by mroberts	
File Zone 13.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 5.314

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00316	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	5.615	Depression Storage (mm)	0
Max Percolation (l/s)	25.0	Width (m)	6.0	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	15.0	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House 66a Church Walk Burgess Hill RH15 9AS	North End Road, Yapton 11228 Trench SA1 1 in 100 yr+40%	
Date 28/09/2021 18:29 File Trench SA 1.SRCX	Designed by mroberts Checked by	
Micro Drainage		Source Control 2020.1

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

Half Drain Time : 2940 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	5.701	0.201	0.0	4.5	O K
30 min Summer	5.768	0.268	0.0	6.0	O K
60 min Summer	5.844	0.344	0.0	7.7	O K
120 min Summer	5.904	0.404	0.0	9.0	O K
180 min Summer	5.940	0.440	0.0	9.8	O K
240 min Summer	5.964	0.464	0.0	10.3	O K
360 min Summer	5.992	0.492	0.0	11.0	O K
480 min Summer	6.010	0.510	0.0	11.3	O K
600 min Summer	6.021	0.521	0.0	11.6	O K
720 min Summer	6.028	0.528	0.0	11.8	O K
960 min Summer	6.036	0.536	0.0	11.9	O K
1440 min Summer	6.038	0.538	0.0	12.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	141.021	0.0	19
30 min Summer	94.616	0.0	34
60 min Summer	60.860	0.0	64
120 min Summer	36.127	0.0	124
180 min Summer	26.472	0.0	184
240 min Summer	21.126	0.0	244
360 min Summer	15.216	0.0	364
480 min Summer	12.017	0.0	482
600 min Summer	9.993	0.0	602
720 min Summer	8.588	0.0	722
960 min Summer	6.754	0.0	962
1440 min Summer	4.821	0.0	1442

GTA Civils Ltd		Page 2
Gloucester House 66a Church Walk Burgess Hill RH15 9AS	North End Road, Yapton 11228 Trench SA1 1 in 100 yr+40%	
Date 28/09/2021 18:29 File Trench SA 1.SRCX	Designed by mroberts Checked by	
Micro Drainage		Source Control 2020.1

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.027	0.527	0.0	11.7	O K
2880 min Summer	6.016	0.516	0.0	11.5	O K
4320 min Summer	6.002	0.502	0.0	11.2	O K
5760 min Summer	5.994	0.494	0.0	11.0	O K
7200 min Summer	5.990	0.490	0.0	10.9	O K
8640 min Summer	5.989	0.489	0.0	10.9	O K
10080 min Summer	5.989	0.489	0.0	10.9	O K
15 min Winter	5.725	0.225	0.0	5.0	O K
30 min Winter	5.801	0.301	0.0	6.7	O K
60 min Winter	5.885	0.385	0.0	8.6	O K
120 min Winter	5.953	0.453	0.0	10.1	O K
180 min Winter	5.994	0.494	0.0	11.0	O K
240 min Winter	6.021	0.521	0.0	11.6	O K

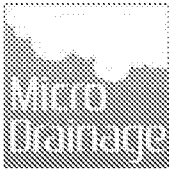
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	3.461	0.0	2140
2880 min Summer	2.752	0.0	2448
4320 min Summer	2.023	0.0	3196
5760 min Summer	1.647	0.0	4032
7200 min Summer	1.418	0.0	4832
8640 min Summer	1.263	0.0	5704
10080 min Summer	1.152	0.0	6552
15 min Winter	141.021	0.0	19
30 min Winter	94.616	0.0	34
60 min Winter	60.860	0.0	64
120 min Winter	36.127	0.0	122
180 min Winter	26.472	0.0	182
240 min Winter	21.126	0.0	240

GTA Civils Ltd		Page 3
Gloucester House 66a Church Walk Burgess Hill RH15 9AS	North End Road, Yapton 11228 Trench SA1 1 in 100 yr+40%	
Date 28/09/2021 18:29 File Trench SA 1.SRCX	Designed by mroberts Checked by	
Micro Drainage		Source Control 2020.1

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	6.055	0.555	0.0	12.4	O K
480 min Winter	6.075	0.575	0.0	12.8	O K
600 min Winter	6.089	0.589	0.0	13.1	O K
720 min Winter	6.098	0.598	0.0	13.3	O K
960 min Winter	6.109	0.609	0.0	13.6	O K
1440 min Winter	6.117	0.617	0.0	13.7	O K
2160 min Winter	6.112	0.612	0.0	13.6	O K
2880 min Winter	6.101	0.601	0.0	13.4	O K
4320 min Winter	6.081	0.581	0.0	12.9	O K
5760 min Winter	6.069	0.569	0.0	12.7	O K
7200 min Winter	6.060	0.560	0.0	12.5	O K
8640 min Winter	6.052	0.552	0.0	12.3	O K
10080 min Winter	6.047	0.547	0.0	12.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	15.216	0.0	358
480 min Winter	12.017	0.0	476
600 min Winter	9.993	0.0	596
720 min Winter	8.588	0.0	712
960 min Winter	6.754	0.0	944
1440 min Winter	4.821	0.0	1400
2160 min Winter	3.461	0.0	2076
2880 min Winter	2.752	0.0	2708
4320 min Winter	2.023	0.0	3376
5760 min Winter	1.647	0.0	4328
7200 min Winter	1.418	0.0	5264
8640 min Winter	1.263	0.0	6216
10080 min Winter	1.152	0.0	7064

GTA Civils Ltd		Page 4
Gloucester House 66a Church Walk Burgess Hill RH15 9AS	North End Road, Yapton 11228 Trench SA1 1 in 100 yr+40%	
Date 28/09/2021 18:29 File Trench SA 1.SRCX	Designed by mroberts Checked by	
Micro Drainage	Source Control 2020.1	

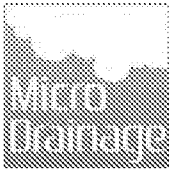
Rainfall Details

Rainfall Model	FEH	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
FEH Rainfall Version	2013	Cv (Winter)	0.840
Site Location	GB 497736 103464 SU 97736 03464	Shortest Storm (mins)	15
Data Type	Point	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.017

Time (mins)	Area
From:	To: (ha)
0	4 0.017

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 Trench SA1	
Burgess Hill RH15 9AS	1 in 100 yr+40%	
Date 28/09/2021 18:29	Designed by mroberts	
File Trench SA 1.SRCX	Checked by	
Micro Drainage	Source Control 2020.1	

Model Details

Storage is Online Cover Level (m) 6.500

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.00300	Invert Level (m)	5.500	Cap Volume Depth (m)	0.000
Infiltration Coefficient Side (m/hr)	0.00300	Trench Width (m)	4.5	Cap Infiltration Depth (m)	0.000
Safety Factor	2.0	Trench Length (m)	16.5		
Porosity	0.30	Slope (1:X)	0.0		

GTA Civils Ltd		Page 1
66a Church Walk Burgess Hill West Sussex RH15 9AS	North End Road, Yapton 11228 Trench SA2 1 in 100 yrs+40%	
Date 27/09/2021 18:20 File Trench SA 2.SRCX	Designed by MROBERTS Checked by	
Micro Drainage		Source Control 2020.1

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

Half Drain Time : 2597 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.038	0.238	0.0	1.6	O K
30 min Summer	6.118	0.318	0.0	2.1	O K
60 min Summer	6.207	0.407	0.0	2.7	O K
120 min Summer	6.278	0.478	0.0	3.2	O K
180 min Summer	6.320	0.520	0.0	3.5	O K
240 min Summer	6.348	0.548	0.0	3.6	O K
360 min Summer	6.381	0.581	0.0	3.9	O K
480 min Summer	6.401	0.601	0.0	4.0	O K
600 min Summer	6.413	0.613	0.0	4.1	O K
720 min Summer	6.420	0.620	0.0	4.1	O K
960 min Summer	6.427	0.627	0.0	4.2	O K
1440 min Summer	6.425	0.625	0.0	4.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	141.021	0.0	19
30 min Summer	94.616	0.0	34
60 min Summer	60.860	0.0	64
120 min Summer	36.127	0.0	124
180 min Summer	26.472	0.0	184
240 min Summer	21.126	0.0	244
360 min Summer	15.216	0.0	362
480 min Summer	12.017	0.0	482
600 min Summer	9.993	0.0	602
720 min Summer	8.588	0.0	722
960 min Summer	6.754	0.0	962
1440 min Summer	4.821	0.0	1440

GTA Civils Ltd		Page 2
66a Church Walk Burgess Hill West Sussex RH15 9AS	North End Road, Yapton 11228 Trench SA2 1 in 100 yrs+40%	
Date 27/09/2021 18:20 File Trench SA 2.SRCX	Designed by MROBERTS Checked by	
Micro Drainage		Source Control 2020.1

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.410	0.610	0.0	4.0	O K
2880 min Summer	6.398	0.598	0.0	4.0	O K
4320 min Summer	6.383	0.583	0.0	3.9	O K
5760 min Summer	6.373	0.573	0.0	3.8	O K
7200 min Summer	6.367	0.567	0.0	3.8	O K
8640 min Summer	6.364	0.564	0.0	3.7	O K
10080 min Summer	6.364	0.564	0.0	3.7	O K
15 min Winter	6.067	0.267	0.0	1.8	O K
30 min Winter	6.157	0.357	0.0	2.4	O K
60 min Winter	6.257	0.457	0.0	3.0	O K
120 min Winter	6.337	0.537	0.0	3.6	O K
180 min Winter	6.385	0.585	0.0	3.9	O K
240 min Winter	6.417	0.617	0.0	4.1	O K

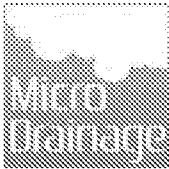
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	3.461	0.0	1880
2880 min Summer	2.752	0.0	2252
4320 min Summer	2.023	0.0	3028
5760 min Summer	1.647	0.0	3872
7200 min Summer	1.418	0.0	4688
8640 min Summer	1.263	0.0	5536
10080 min Summer	1.152	0.0	6360
15 min Winter	141.021	0.0	19
30 min Winter	94.616	0.0	34
60 min Winter	60.860	0.0	64
120 min Winter	36.127	0.0	122
180 min Winter	26.472	0.0	182
240 min Winter	21.126	0.0	240

GTA Civils Ltd		Page 3
66a Church Walk Burgess Hill West Sussex RH15 9AS	North End Road, Yapton 11228 Trench SA2 1 in 100 yrs+40%	
Date 27/09/2021 18:20 File Trench SA 2.SRCX	Designed by MROBERTS Checked by	
Micro Drainage		Source Control 2020.1

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	6.454	0.654	0.0	4.3	O K
480 min Winter	6.477	0.677	0.0	4.5	O K
600 min Winter	6.492	0.692	0.0	4.6	O K
720 min Winter	6.502	0.702	0.0	4.7	O K
960 min Winter	6.513	0.713	0.0	4.7	O K
1440 min Winter	6.516	0.716	0.0	4.7	O K
2160 min Winter	6.504	0.704	0.0	4.7	O K
2880 min Winter	6.487	0.687	0.0	4.6	O K
4320 min Winter	6.468	0.668	0.0	4.4	O K
5760 min Winter	6.451	0.651	0.0	4.3	O K
7200 min Winter	6.438	0.638	0.0	4.2	O K
8640 min Winter	6.427	0.627	0.0	4.2	O K
10080 min Winter	6.418	0.618	0.0	4.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	15.216	0.0	358
480 min Winter	12.017	0.0	476
600 min Winter	9.993	0.0	594
720 min Winter	8.588	0.0	708
960 min Winter	6.754	0.0	942
1440 min Winter	4.821	0.0	1396
2160 min Winter	3.461	0.0	2036
2880 min Winter	2.752	0.0	2364
4320 min Winter	2.023	0.0	3244
5760 min Winter	1.647	0.0	4200
7200 min Winter	1.418	0.0	5112
8640 min Winter	1.263	0.0	5976
10080 min Winter	1.152	0.0	6864

GTA Civils Ltd		Page 4
66a Church Walk	North End Road, Yapton	
Burgess Hill	11228 Trench SA2	
West Sussex RH15 9AS	1 in 100 yrs+40%	
Date 27/09/2021 18:20	Designed by MROBERTS	
File Trench SA 2.SRCX	Checked by	
Micro Drainage	Source Control 2020.1	

Rainfall Details

Rainfall Model	FEH	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
FEH Rainfall Version	2013	Cv (Winter)	0.840
Site Location	GB 497736 103464 SU 97736 03464	Shortest Storm (mins)	15
Data Type	Point	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.006

Time (mins)	Area
From:	To: (ha)
0	4 0.006

GTA Civils Ltd		Page 5
66a Church Walk	North End Road, Yapton	
Burgess Hill	11228 Trench SA2	
West Sussex RH15 9AS	1 in 100 yrs+40%	
Date 27/09/2021 18:20	Designed by MROBERTS	
File Trench SA 2.SRCX	Checked by	
Micro Drainage	Source Control 2020.1	

Model Details

Storage is Online Cover Level (m) 7.150

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.00300	Invert Level (m)	5.800	Cap Volume Depth (m)	0.000
Infiltration Coefficient Side (m/hr)	0.00300	Trench Width (m)	1.7	Cap Infiltration Depth (m)	0.000
Safety Factor	2.0	Trench Length (m)	13.0		
Porosity	0.30	Slope (1:X)	0.0		

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 1	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 15:09	Designed by mroberts	
File Zone 1.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Half Drain Time : 3183 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	6.483	0.183	0.5	52.6	O K
30 min Summer	6.550	0.250	0.5	71.8	O K
60 min Summer	6.623	0.323	0.5	92.9	O K
120 min Summer	6.683	0.383	0.5	109.9	Flood Risk
180 min Summer	6.718	0.418	0.5	126.0	Flood Risk
240 min Summer	6.741	0.441	0.5	126.8	Flood Risk
360 min Summer	6.769	0.469	0.5	134.3	Flood Risk
480 min Summer	6.786	0.486	0.5	139.8	Flood Risk
600 min Summer	6.798	0.498	0.5	143.0	Flood Risk
720 min Summer	6.805	0.505	0.5	145.1	Flood Risk
960 min Summer	6.813	0.513	0.5	147.3	Flood Risk
1440 min Summer	6.815	0.515	0.5	148.0	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	141.931	0.0	23
30 min Summer	94.616	0.0	38
60 min Summer	60.860	0.0	68
120 min Summer	36.127	0.0	128
180 min Summer	26.472	0.0	188
240 min Summer	21.126	0.0	246
360 min Summer	15.216	0.0	366
480 min Summer	12.917	0.0	486
600 min Summer	9.993	0.0	606
720 min Summer	8.588	0.0	726
960 min Summer	6.764	0.0	964
1440 min Summer	4.821	0.0	1442

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 1	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 15:09	Designed by mroberts	
File Zone 1.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.805	0.505	0.5	145.1	Flood Risk
2880 min Summer	6.792	0.492	0.5	141.3	Flood Risk
4320 min Summer	6.776	0.476	0.5	136.7	Flood Risk
5760 min Summer	6.766	0.466	0.5	133.9	Flood Risk
7200 min Summer	6.760	0.460	0.5	132.3	Flood Risk
8640 min Summer	6.757	0.457	0.5	131.4	Flood Risk
10080 min Summer	6.756	0.456	0.5	131.0	Flood Risk
15 min Winter	6.507	0.207	0.5	59.5	O K
30 min Winter	6.502	0.202	0.5	50.9	O K
60 min Winter	6.664	0.364	0.5	104.7	Flood Risk
120 min Winter	6.731	0.431	0.5	123.9	Flood Risk
180 min Winter	6.771	0.471	0.5	135.4	Flood Risk
240 min Winter	6.798	0.498	0.5	143.1	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	3.461	0.0	2160
2880 min Summer	2.752	0.0	2484
4320 min Summer	2.023	0.0	3244
5760 min Summer	1.647	0.0	4040
7200 min Summer	1.418	0.0	4896
8640 min Summer	1.263	0.0	5712
10080 min Summer	1.152	0.0	6560
15 min Winter	141.021	0.0	23
30 min Winter	84.616	0.0	37
60 min Winter	60.860	0.0	60
120 min Winter	36.123	0.0	126
180 min Winter	26.472	0.0	184
240 min Winter	21.126	0.0	244

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 1	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 15:09	Designed by mroberts	
File Zone 1.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	6.831	0.531	0.5	152.5	Flood Risk
480 min Winter	6.851	0.551	0.5	158.3	Flood Risk
600 min Winter	6.865	0.565	0.5	162.2	Flood Risk
720 min Winter	6.874	0.574	0.5	164.9	Flood Risk
960 min Winter	6.885	0.585	0.5	168.1	Flood Risk
1440 min Winter	6.893	0.593	0.5	170.4	Flood Risk
2160 min Winter	6.889	0.589	0.5	169.2	Flood Risk
2880 min Winter	6.878	0.578	0.5	165.1	Flood Risk
4320 min Winter	6.855	0.555	0.5	159.3	Flood Risk
5760 min Winter	6.840	0.540	0.5	155.2	Flood Risk
7200 min Winter	6.828	0.528	0.5	151.5	Flood Risk
8640 min Winter	6.819	0.519	0.5	149.0	Flood Risk
10080 min Winter	6.811	0.511	0.5	146.8	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	15.216	0.0	362
480 min Winter	12.017	0.0	486
600 min Winter	9.893	0.0	596
720 min Winter	8.588	0.0	714
960 min Winter	6.754	0.0	948
1440 min Winter	4.621	0.0	1412
2160 min Winter	3.461	0.0	2086
2880 min Winter	2.752	0.0	2740
4320 min Winter	2.023	0.0	3460
5760 min Winter	1.647	0.0	4384
7200 min Winter	1.418	0.0	5328
8640 min Winter	1.263	0.0	6232
10080 min Winter	1.152	0.0	7160

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 1	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 15:09	Designed by mroberts	
File Zone 1.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEH	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
FEH Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change % +40

Time Area Diagram

Total Area (ha) 0.215

Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:
	(ha)		(ha)
0	4 0.100	4	8 0.115

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 1	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
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File Zone 1.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 6.936

Complex Structure

Porous Car Park

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:2)	0.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.300	Depression Storage (mm)	5
Max Percolation (l/s)	209.3	Width (m)	4.8	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	157.0	Membrane Depth (m)	0

Infiltration Blanket

Infiltration Coefficient Base (m/hr)	0.00345	Invert Level (m)	6.300	Cap Volume Depth (m)	0.000
Safety Factor	2.0	Diameter/Width (m)	12.0		
Porosity	0.30	Length (m)	17.0		

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 2	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 16:32	Designed by mroberts	
File Zone 2.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Half Drain Time : 3331 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.453	0.203	0.2	28.0	O K
30 min Summer	6.522	0.272	0.2	37.6	O K
60 min Summer	6.599	0.349	0.2	48.1	O K
120 min Summer	6.660	0.410	0.2	56.6	O K
180 min Summer	6.697	0.447	0.2	61.6	O K
240 min Summer	6.721	0.471	0.2	63.0	O K
360 min Summer	6.751	0.501	0.2	65.1	O K
480 min Summer	6.769	0.519	0.2	71.6	O K
600 min Summer	6.781	0.531	0.2	73.2	O K
720 min Summer	6.789	0.539	0.2	74.3	O K
960 min Summer	6.796	0.546	0.2	75.6	O K
1440 min Summer	6.802	0.552	0.2	76.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	141.931	0.0	27
30 min Summer	94.616	0.0	42
60 min Summer	60.860	0.0	72
120 min Summer	36.127	0.0	130
180 min Summer	26.472	0.0	190
240 min Summer	21.126	0.0	250
360 min Summer	15.216	0.0	370
480 min Summer	12.917	0.0	488
600 min Summer	9.993	0.0	608
720 min Summer	8.588	0.0	728
960 min Summer	6.764	0.0	966
1440 min Summer	4.821	0.0	1444

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 2	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 16:32	Designed by mroberts	
File Zone 2.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.794	0.544	0.2	75.1	O K
2880 min Summer	6.780	0.530	0.2	73.2	O K
4320 min Summer	6.764	0.514	0.2	70.9	O K
5760 min Summer	6.755	0.505	0.2	69.7	O K
7200 min Summer	6.751	0.501	0.2	69.1	O K
8640 min Summer	6.750	0.500	0.2	69.0	O K
10080 min Summer	6.751	0.501	0.2	69.1	O K
15 min Winter	6.678	0.228	0.2	31.4	O K
30 min Winter	6.555	0.385	0.2	42.1	O K
60 min Winter	6.641	0.391	0.2	54.0	O K
120 min Winter	6.710	0.460	0.2	63.5	O K
180 min Winter	6.752	0.502	0.2	69.3	O K
240 min Winter	6.780	0.530	0.2	73.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	3.461	0.0	2160
2880 min Summer	2.752	0.0	2880
4320 min Summer	2.023	0.0	3372
5760 min Summer	1.647	0.0	4152
7200 min Summer	1.418	0.0	4976
8640 min Summer	1.263	0.0	5808
10080 min Summer	1.152	0.0	6664
15 min Winter	141.021	0.0	27
30 min Winter	84.618	0.0	41
60 min Winter	60.860	0.0	70
120 min Winter	36.123	0.0	130
180 min Winter	26.472	0.0	188
240 min Winter	21.126	0.0	246

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 2	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 16:32	Designed by mroberts	
File Zone 2.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	6.815	0.565	0.2	77.9	O K
480 min Winter	6.836	0.586	0.2	80.9	O K
600 min Winter	6.851	0.601	0.2	82.9	O K
720 min Winter	6.861	0.611	0.2	84.3	O K
960 min Winter	6.874	0.624	0.2	86.0	O K
1440 min Winter	6.884	0.634	0.2	87.4	O K
2160 min Winter	6.882	0.632	0.2	87.3	O K
2880 min Winter	6.874	0.624	0.2	86.1	O K
4320 min Winter	6.851	0.601	0.2	83.0	O K
5760 min Winter	6.836	0.586	0.2	81.2	O K
7200 min Winter	6.830	0.580	0.2	80.0	O K
8640 min Winter	6.823	0.573	0.2	79.1	O K
10080 min Winter	6.819	0.569	0.2	78.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	15.216	0.0	364
480 min Winter	12.017	0.0	482
600 min Winter	9.993	0.0	600
720 min Winter	8.588	0.0	716
960 min Winter	6.754	0.0	952
1440 min Winter	4.621	0.0	1414
2160 min Winter	3.461	0.0	2106
2880 min Winter	2.752	0.0	2764
4320 min Winter	2.023	0.0	3936
5760 min Winter	1.647	0.0	4456
7200 min Winter	1.418	0.0	5408
8640 min Winter	1.263	0.0	6328
10080 min Winter	1.152	0.0	7272

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 2	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 16:32	Designed by mroberts	
File Zone 2.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEH	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
FEH Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change % +40

Time Area Diagram

Total Area (ha) 0.107

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:	From:	To:
0	4	4	8	8	12
	0.036		0.036		0.036

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PP Zone 2	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 16:32	Designed by mroberts	
File Zone 2.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 7.231

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.250	Depression Storage (mm)	0
Max Percolation (l/s)	127.8	Width (m)	12.6	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	36.5	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 4	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 15:19	Designed by mroberts	
File Zone 4.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period (+40%)

Half Drain Time : 1459 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.944	0.094	0.2	9.1	O K
30 min Summer	6.873	0.123	0.2	11.9	O K
60 min Summer	6.904	0.154	0.2	14.9	O K
120 min Summer	6.939	0.189	0.2	18.2	O K
180 min Summer	6.958	0.208	0.2	20.1	O K
240 min Summer	6.971	0.221	0.2	21.3	O K
360 min Summer	6.985	0.235	0.2	22.6	O K
480 min Summer	6.992	0.242	0.2	23.3	O K
600 min Summer	6.995	0.245	0.2	23.6	O K
720 min Summer	6.996	0.246	0.2	23.7	O K
960 min Summer	6.995	0.245	0.2	23.6	O K
1440 min Summer	6.987	0.237	0.2	22.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	87.572	0.0	23
30 min Summer	57.640	0.0	37
60 min Summer	36.421	0.0	68
120 min Summer	22.637	0.0	126
180 min Summer	16.930	0.0	186
240 min Summer	13.678	0.0	246
360 min Summer	10.002	0.0	364
480 min Summer	7.958	0.0	484
600 min Summer	6.650	0.0	604
720 min Summer	5.736	0.0	722
960 min Summer	4.937	0.0	960
1440 min Summer	3.267	0.0	1228

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 4	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
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File Zone 4.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.978	0.228	0.2	22.0	O K
2880 min Summer	6.971	0.221	0.2	21.3	O K
4320 min Summer	6.960	0.210	0.2	20.2	O K
5760 min Summer	6.952	0.202	0.2	19.4	O K
7200 min Summer	6.946	0.196	0.2	18.8	O K
8640 min Summer	6.941	0.191	0.2	18.4	O K
10080 min Summer	6.937	0.187	0.2	18.0	O K
15 min Winter	6.855	0.105	0.2	10.2	O K
30 min Winter	6.888	0.138	0.2	13.3	O K
60 min Winter	6.923	0.173	0.2	16.7	O K
120 min Winter	6.962	0.212	0.2	20.4	O K
180 min Winter	6.985	0.235	0.2	22.6	O K
240 min Winter	6.999	0.249	0.2	24.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	2.372	0.0	1600
2880 min Summer	1.906	0.0	1992
4320 min Summer	1.429	0.0	2816
5760 min Summer	1.183	0.0	3640
7200 min Summer	1.033	0.0	4472
8640 min Summer	0.933	0.0	5280
10080 min Summer	0.860	0.0	6056
15 min Winter	87.572	0.0	23
30 min Winter	57.648	0.0	37
60 min Winter	36.421	0.0	66
120 min Winter	22.637	0.0	124
180 min Winter	16.930	0.0	184
240 min Winter	13.678	0.0	242

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 4	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 15:19	Designed by mroberts	
File Zone 4.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Summary of Results for 10 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	7.016	0.266	0.2	25.6	O K
480 min Winter	7.025	0.275	0.2	26.3	O K
600 min Winter	7.030	0.280	0.2	26.9	O K
720 min Winter	7.032	0.282	0.2	27.2	O K
960 min Winter	7.032	0.282	0.2	27.2	O K
1440 min Winter	7.026	0.276	0.2	26.6	O K
2160 min Winter	7.013	0.263	0.2	25.3	O K
2880 min Winter	7.002	0.252	0.2	24.3	O K
4320 min Winter	6.994	0.234	0.2	22.6	O K
5760 min Winter	6.988	0.218	0.2	21.0	O K
7200 min Winter	6.954	0.204	0.2	19.7	O K
8640 min Winter	6.942	0.192	0.2	18.5	O K
10080 min Winter	6.932	0.182	0.2	17.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	10.002	0.0	350
480 min Winter	7.958	0.0	476
600 min Winter	6.650	0.0	592
720 min Winter	5.736	0.0	706
960 min Winter	4.537	0.0	932
1440 min Winter	3.267	0.0	1368
2160 min Winter	2.372	0.0	1712
2880 min Winter	1.906	0.0	2164
4320 min Winter	1.428	0.0	3076
5760 min Winter	1.183	0.0	3976
7200 min Winter	1.033	0.0	4832
8640 min Winter	0.933	0.0	5704
10080 min Winter	0.860	0.0	6592

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 4	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 15:19	Designed by mroberts	
File Zone 4.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEB	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	10	Summer Storms	Yes	Shortest Storm (mins)	15
FEB Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change % +40

Time Area Diagram

Total Area (ha) 0.056

Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:
	(ha)		(ha)
0	4 0.028	4	8 0.028

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PP Zone 4	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 15:19	Designed by mroberts	
File Zone 4.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 7.384

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.750	Depression Storage (mm)	0
Max Percolation (l/s)	89.2	Width (m)	14.6	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	22.0	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 5	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 15:25	Designed by mroberts	
File Zone 5.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Half Drain Time = 2763 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.774	0.174	0.1	8.7	O K
30 min Summer	6.833	0.233	0.1	11.6	O K
60 min Summer	6.898	0.298	0.1	14.8	O K
120 min Summer	6.950	0.350	0.1	17.4	Flood Risk
180 min Summer	6.981	0.381	0.1	18.9	Flood Risk
240 min Summer	7.001	0.401	0.1	19.9	Flood Risk
360 min Summer	7.022	0.422	0.1	21.1	Flood Risk
480 min Summer	7.040	0.440	0.1	21.8	Flood Risk
600 min Summer	7.049	0.449	0.1	22.3	Flood Risk
720 min Summer	7.054	0.454	0.1	22.6	Flood Risk
960 min Summer	7.060	0.460	0.1	22.8	Flood Risk
1440 min Summer	7.058	0.458	0.1	22.8	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	141.931	0.0	23
30 min Summer	94.616	0.0	38
60 min Summer	60.860	0.0	68
120 min Summer	36.127	0.0	128
180 min Summer	26.472	0.0	188
240 min Summer	21.126	0.0	248
360 min Summer	15.216	0.0	366
480 min Summer	12.917	0.0	486
600 min Summer	9.993	0.0	606
720 min Summer	8.588	0.0	726
960 min Summer	6.764	0.0	966
1440 min Summer	4.821	0.0	1444

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 5	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
Date 16/12/2021 15:25	Designed by mroberts	
File Zone 5.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	7.045	0.445	0.1	22.1	Flood Risk
2880 min Summer	7.032	0.432	0.1	21.5	Flood Risk
4320 min Summer	7.015	0.415	0.1	20.6	Flood Risk
5760 min Summer	7.005	0.405	0.1	20.1	Flood Risk
7200 min Summer	6.999	0.399	0.1	19.8	Flood Risk
8640 min Summer	6.994	0.394	0.1	19.6	Flood Risk
10080 min Summer	6.992	0.392	0.1	19.5	Flood Risk
15 min Winter	6.795	0.195	0.1	9.7	O K
30 min Winter	6.861	0.261	0.1	13.0	O K
60 min Winter	6.935	0.335	0.1	16.6	Flood Risk
120 min Winter	6.993	0.393	0.1	19.5	Flood Risk
180 min Winter	7.028	0.428	0.1	21.3	Flood Risk
240 min Winter	7.052	0.452	0.1	22.5	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	3.461	0.0	2100
2880 min Summer	2.752	0.0	2420
4320 min Summer	2.023	0.0	3160
5760 min Summer	1.647	0.0	3976
7200 min Summer	1.418	0.0	4824
8640 min Summer	1.263	0.0	5624
10080 min Summer	1.152	0.0	6464
15 min Winter	141.021	0.0	23
30 min Winter	84.616	0.0	38
60 min Winter	60.860	0.0	68
120 min Winter	36.123	0.0	126
180 min Winter	26.472	0.0	186
240 min Winter	21.126	0.0	244

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 5	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
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File Zone 5.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	7.080	0.480	0.1	23.8	Flood Risk
480 min Winter	7.097	0.497	0.1	24.7	Flood Risk
600 min Winter	7.108	0.508	0.1	25.3	Flood Risk
720 min Winter	7.116	0.516	0.1	25.6	Flood Risk
960 min Winter	7.124	0.524	0.1	26.0	Flood Risk
1440 min Winter	7.128	0.528	0.1	26.2	Flood Risk
2160 min Winter	7.120	0.520	0.1	25.9	Flood Risk
2880 min Winter	7.107	0.507	0.1	25.2	Flood Risk
4320 min Winter	7.083	0.483	0.1	24.0	Flood Risk
5760 min Winter	7.067	0.467	0.1	23.2	Flood Risk
7200 min Winter	7.054	0.454	0.1	22.6	Flood Risk
8640 min Winter	7.043	0.443	0.1	22.0	Flood Risk
10080 min Winter	7.034	0.434	0.1	21.6	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	15.216	0.0	362
480 min Winter	12.017	0.0	486
600 min Winter	9.993	0.0	598
720 min Winter	8.588	0.0	714
960 min Winter	6.754	0.0	948
1440 min Winter	4.621	0.0	1404
2160 min Winter	3.461	0.0	2086
2880 min Winter	2.752	0.0	2712
4320 min Winter	2.023	0.0	3886
5760 min Winter	1.647	0.0	4328
7200 min Winter	1.418	0.0	5256
8640 min Winter	1.263	0.0	6144
10080 min Winter	1.152	0.0	7064

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 5	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
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File Zone 5.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEH	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
FEH Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change % +40

Time Area Diagram

Total Area (ha) 0.033

Time (mins)	Area	Time (mins)	Area
From:	To: (ha)	From:	To: (ha)
0	4 0.009	4	8 0.024

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PF Zone 5	
Burgess Hill, BN43 6LB	1 in 100 yr+40%	
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File Zone 5.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 7.215

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.600	Depression Storage (mm)	0
Max Percolation (l/s)	46.0	Width (m)	7.2	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	23.0	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 6	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 15:36	Designed by mroberts	
File Zone 6.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Half Drain Time : 3241 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.210	0.260	0.2	15.4	O K
30 min Summer	6.298	0.348	0.2	26.6	O K
60 min Summer	6.395	0.445	0.2	26.4	O K
120 min Summer	6.471	0.521	0.2	30.9	O K
180 min Summer	6.516	0.566	0.2	33.5	O K
240 min Summer	6.544	0.594	0.2	35.2	Flood Risk
360 min Summer	6.577	0.627	0.2	37.1	Flood Risk
480 min Summer	6.595	0.645	0.2	38.2	Flood Risk
600 min Summer	6.605	0.655	0.2	38.8	Flood Risk
720 min Summer	6.610	0.660	0.2	39.1	Flood Risk
960 min Summer	6.611	0.661	0.2	39.2	Flood Risk
1440 min Summer	6.597	0.647	0.2	38.3	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	141.931	0.0	23
30 min Summer	94.616	0.0	38
60 min Summer	60.860	0.0	68
120 min Summer	36.127	0.0	128
180 min Summer	26.472	0.0	186
240 min Summer	21.126	0.0	246
360 min Summer	15.216	0.0	366
480 min Summer	12.917	0.0	486
600 min Summer	9.993	0.0	604
720 min Summer	8.588	0.0	724
960 min Summer	6.764	0.0	962
1440 min Summer	4.821	0.0	1440

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 6	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 6.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
2160 min Summer	6.563	0.613	0.2	36.3	Flood Risk
2880 min Summer	6.539	0.589	0.2	34.9	Flood Risk
4320 min Summer	6.507	0.557	0.2	33.0	O K
5760 min Summer	6.485	0.535	0.2	31.7	O K
7200 min Summer	6.469	0.519	0.2	30.7	O K
8640 min Summer	6.456	0.506	0.2	30.0	O K
10080 min Summer	6.447	0.497	0.2	29.4	O K
15 min Winter	6.242	0.292	0.2	17.3	O K
30 min Winter	6.341	0.391	0.2	23.2	O K
60 min Winter	6.450	0.500	0.2	29.6	O K
120 min Winter	6.536	0.586	0.2	34.7	Flood Risk
180 min Winter	6.587	0.637	0.2	37.7	Flood Risk
240 min Winter	6.621	0.671	0.2	39.7	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
2160 min Summer	3.461	0.0	1860
2880 min Summer	2.752	0.0	2224
4320 min Summer	2.023	0.0	3024
5760 min Summer	1.647	0.0	3856
7200 min Summer	1.418	0.0	4680
8640 min Summer	1.263	0.0	5528
10080 min Summer	1.152	0.0	6352
15 min Winter	141.021	0.0	23
30 min Winter	84.616	0.0	37
60 min Winter	60.860	0.0	66
120 min Winter	36.123	0.0	126
180 min Winter	26.472	0.0	184
240 min Winter	21.126	0.0	244

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 6	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 6.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	6.659	0.709	0.2	42.0	Flood Risk
480 min Winter	6.682	0.732	0.2	43.4	Flood Risk
600 min Winter	6.695	0.745	0.2	44.2	Flood Risk
720 min Winter	6.703	0.753	0.2	44.6	Flood Risk
960 min Winter	6.709	0.759	0.2	45.0	Flood Risk
1440 min Winter	6.703	0.753	0.2	44.6	Flood Risk
2160 min Winter	6.674	0.724	0.2	42.9	Flood Risk
2880 min Winter	6.640	0.690	0.2	40.9	Flood Risk
4320 min Winter	6.596	0.646	0.2	39.3	Flood Risk
5760 min Winter	6.560	0.610	0.2	36.1	Flood Risk
7200 min Winter	6.529	0.579	0.2	34.3	Flood Risk
8640 min Winter	6.503	0.553	0.2	32.8	O K
10080 min Winter	6.480	0.530	0.2	31.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	15.216	0.0	360
480 min Winter	12.017	0.0	478
600 min Winter	9.893	0.0	596
720 min Winter	8.588	0.0	712
960 min Winter	6.758	0.0	944
1440 min Winter	4.621	0.0	1400
2160 min Winter	3.461	0.0	2056
2880 min Winter	2.752	0.0	2592
4320 min Winter	2.023	0.0	3264
5760 min Winter	1.647	0.0	4208
7200 min Winter	1.418	0.0	5112
8640 min Winter	1.263	0.0	5968
10080 min Winter	1.152	0.0	6864

GTA Civils Ltd

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Gloucester House

North End Road, Yapton

66a Church Walk

11228 FP Zone 6

Burgess Hill, BN43 6LB

1 in 100 yrs+40%

Date 16/12/2021 15:36

Designed by mroberts

File Zone 6.SRCX

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XP Solutions

Source Control 2020.1.3

Micro
DrainageRainfall Details

Rainfall Model	FEH	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
FEH Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change % +40

Time Area Diagram

Total Area (ha) 0.059

Time (mins)	Area (ha)	Time (mins)	Area (ha)
From:	To:	From:	To:
0	4	0.029	
		4	8
			0.030

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 6	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 6.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 5.327

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00612	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	5.950	Depression Storage (mm)	0
Max Percolation (l/s)	54.9	Width (m)	7.9	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	25.0	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 7	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:39	Designed by mroberts	
File Zone 7.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Half Drain Time : 2005 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.280	0.180	0.1	15.5	O K
30 min Summer	6.341	0.241	0.1	26.7	O K
60 min Summer	6.408	0.308	0.1	26.5	O K
120 min Summer	6.462	0.362	0.1	31.1	O K
180 min Summer	6.494	0.394	0.1	33.9	O K
240 min Summer	6.515	0.415	0.1	38.7	O K
360 min Summer	6.540	0.440	0.1	37.9	O K
480 min Summer	6.555	0.455	0.1	39.1	O K
600 min Summer	6.565	0.465	0.1	40.0	O K
720 min Summer	6.571	0.471	0.1	40.5	O K
960 min Summer	6.577	0.477	0.1	41.0	O K
1440 min Summer	6.577	0.477	0.1	41.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	141.931	0.0	23
30 min Summer	94.616	0.0	38
60 min Summer	60.860	0.0	68
120 min Summer	36.127	0.0	128
180 min Summer	26.472	0.0	186
240 min Summer	21.126	0.0	246
360 min Summer	15.216	0.0	366
480 min Summer	12.917	0.0	486
600 min Summer	9.993	0.0	606
720 min Summer	8.588	0.0	724
960 min Summer	6.764	0.0	964
1440 min Summer	4.821	0.0	1442

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 7	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 7.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
2160 min Summer	6.564	0.464	0.1	39.9	O K
2880 min Summer	6.551	0.451	0.1	38.8	O K
4320 min Summer	6.534	0.434	0.1	37.4	O K
5760 min Summer	6.524	0.424	0.1	36.5	O K
7200 min Summer	6.518	0.418	0.1	36.0	O K
8640 min Summer	6.515	0.415	0.1	35.7	O K
10080 min Summer	6.513	0.413	0.1	35.5	O K
15 min Winter	6.302	0.202	0.1	17.3	O K
30 min Winter	6.376	0.276	0.1	23.2	O K
60 min Winter	6.438	0.348	0.1	29.7	O K
120 min Winter	6.506	0.406	0.1	35.0	O K
180 min Winter	6.543	0.443	0.1	38.1	O K
240 min Winter	6.567	0.467	0.1	40.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
2160 min Summer	3.461	0.0	2144
2880 min Summer	2.752	0.0	2452
4320 min Summer	2.023	0.0	3260
5760 min Summer	1.647	0.0	4032
7200 min Summer	1.418	0.0	4832
8640 min Summer	1.263	0.0	5784
10080 min Summer	1.152	0.0	6952
15 min Winter	141.021	0.0	23
30 min Winter	84.616	0.0	37
60 min Winter	60.860	0.0	69
120 min Winter	36.123	0.0	126
180 min Winter	26.472	0.0	184
240 min Winter	21.126	0.0	244

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 7	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 7.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	6.596	0.496	0.1	42.7	O K
480 min Winter	6.614	0.514	0.1	44.2	O K
600 min Winter	6.626	0.526	0.1	45.3	O K
720 min Winter	6.635	0.535	0.1	46.0	O K
960 min Winter	6.644	0.544	0.1	46.8	O K
1440 min Winter	6.649	0.549	0.1	47.2	O K
2160 min Winter	6.642	0.542	0.1	46.6	O K
2880 min Winter	6.629	0.529	0.1	45.6	O K
4320 min Winter	6.606	0.506	0.1	43.6	O K
5760 min Winter	6.590	0.490	0.1	42.2	O K
7200 min Winter	6.578	0.478	0.1	41.1	O K
8640 min Winter	6.568	0.468	0.1	40.3	O K
10080 min Winter	6.560	0.460	0.1	39.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	15.216	0.0	362
480 min Winter	12.017	0.0	486
600 min Winter	9.993	0.0	596
720 min Winter	8.588	0.0	714
960 min Winter	6.754	0.0	946
1440 min Winter	4.621	0.0	1410
2160 min Winter	3.461	0.0	2080
2880 min Winter	2.752	0.0	2716
4320 min Winter	2.023	0.0	3420
5760 min Winter	1.647	0.0	4320
7200 min Winter	1.418	0.0	5264
8640 min Winter	1.263	0.0	6224
10080 min Winter	1.152	0.0	7160

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Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 7	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 7.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEH	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
FEH Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change % +40

Time Area Diagram

Total Area (ha) 0.059

Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:
	(ha)		(ha)
0	4 0.029	4	8 0.030

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 7	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 7.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 6.950

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.100	Depression Storage (mm)	0
Max Percolation (l/s)	79.6	Width (m)	6.1	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	47.0	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 8	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:43	Designed by mroberts	
File Zone 8.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Half Drain Time : 2559 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	6.559	0.159	0.1	10.4	O K
30 min Summer	6.618	0.218	0.1	14.3	O K
60 min Summer	6.684	0.284	0.1	18.7	O K
120 min Summer	6.737	0.337	0.1	22.1	O K
180 min Summer	6.768	0.368	0.1	24.2	O K
240 min Summer	6.788	0.388	0.1	25.5	O K
360 min Summer	6.813	0.413	0.1	27.1	O K
480 min Summer	6.827	0.427	0.1	28.1	O K
600 min Summer	6.836	0.436	0.1	28.7	O K
720 min Summer	6.842	0.442	0.1	29.0	Flood Risk
960 min Summer	6.847	0.447	0.1	29.4	Flood Risk
1440 min Summer	6.846	0.446	0.1	29.3	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	141.931	0.0	23
30 min Summer	94.616	0.0	38
60 min Summer	60.860	0.0	68
120 min Summer	36.127	0.0	128
180 min Summer	26.472	0.0	186
240 min Summer	21.126	0.0	246
360 min Summer	15.216	0.0	366
480 min Summer	12.917	0.0	486
600 min Summer	9.993	0.0	604
720 min Summer	8.588	0.0	724
960 min Summer	6.764	0.0	964
1440 min Summer	4.821	0.0	1442

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 8	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:43	Designed by mroberts	
File Zone 8.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
2160 min Summer	6.832	0.432	0.1	28.4	O K
2880 min Summer	6.820	0.429	0.1	27.6	O K
4320 min Summer	6.805	0.405	0.1	26.6	O K
5760 min Summer	6.793	0.393	0.1	25.8	O K
7200 min Summer	6.786	0.386	0.1	25.3	O K
8640 min Summer	6.780	0.380	0.1	25.0	O K
10080 min Summer	6.776	0.376	0.1	24.7	O K
15 min Winter	6.580	0.180	0.1	11.8	O K
30 min Winter	6.647	0.247	0.1	18.2	O K
60 min Winter	6.721	0.321	0.1	21.1	O K
120 min Winter	6.780	0.380	0.1	25.0	O K
180 min Winter	6.815	0.415	0.1	27.3	O K
240 min Winter	6.839	0.439	0.1	28.8	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
2160 min Summer	3.461	0.0	2812
2880 min Summer	2.752	0.0	2336
4320 min Summer	2.023	0.0	3112
5760 min Summer	1.647	0.0	3920
7200 min Summer	1.418	0.0	4760
8640 min Summer	1.263	0.0	5616
10080 min Summer	1.152	0.0	6456
15 min Winter	141.021	0.0	23
30 min Winter	84.616	0.0	37
60 min Winter	60.860	0.0	66
120 min Winter	36.123	0.0	126
180 min Winter	26.472	0.0	184
240 min Winter	21.126	0.0	244

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Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 8	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 8.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	6.967	0.467	0.1	39.7	Flood Risk
480 min Winter	6.985	0.485	0.1	31.8	Flood Risk
600 min Winter	6.996	0.496	0.1	32.6	Flood Risk
720 min Winter	6.993	0.593	0.1	33.1	Flood Risk
960 min Winter	6.912	0.512	0.1	33.6	Flood Risk
1440 min Winter	6.915	0.515	0.1	33.0	Flood Risk
2160 min Winter	6.906	0.506	0.1	33.3	Flood Risk
2880 min Winter	6.892	0.492	0.1	32.3	Flood Risk
4320 min Winter	6.869	0.469	0.1	30.8	Flood Risk
5760 min Winter	6.851	0.451	0.1	29.7	Flood Risk
7200 min Winter	6.836	0.436	0.1	28.7	O K
8640 min Winter	6.823	0.423	0.1	27.8	O K
10080 min Winter	6.812	0.412	0.1	27.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	15.216	0.0	362
480 min Winter	12.017	0.0	478
600 min Winter	9.893	0.0	596
720 min Winter	8.588	0.0	714
960 min Winter	6.754	0.0	946
1440 min Winter	4.621	0.0	1462
2160 min Winter	3.461	0.0	2072
2880 min Winter	2.752	0.0	2684
4320 min Winter	2.023	0.0	3332
5760 min Winter	1.647	0.0	4272
7200 min Winter	1.418	0.0	5192
8640 min Winter	1.263	0.0	6136
10080 min Winter	1.152	0.0	7056

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Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 8	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 8.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEH	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
FEH Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080
Site Location	GB 497736 103464 SU 97736 03464	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.044

Time (mins)	Area	Time (mins)	Area
From:	To: (ha)	From:	To: (ha)
0	4 0.022	4	8 0.022

GTA Civils Ltd

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Gloucester House

North End Road, Yapton

66a Church Walk

11228 FP Zone 8

Burgess Hill, BN43 6LB

1 in 100 yrs+40%

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Designed by mroberts

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Source Control 2020.1.3



Model Details

Storage is Online Cover Level (m) 7.139

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.400	Depression Storage (mm)	5
Max Percolation (l/s)	60.8	Width (m)	6.0	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	36.5	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	North End Road, Yapton 11228 PP Zone 9 1 in 100 yrs+40%	
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XP Solutions	Source Control 2020.1.3	

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

Half Drain Time : 3219 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.456	0.186	0.2	18.0	O K
30 min Summer	6.525	0.255	0.2	24.7	O K
60 min Summer	6.601	0.331	0.2	32.1	O K
120 min Summer	6.662	0.392	0.2	38.0	Flood Risk
180 min Summer	6.699	0.429	0.2	41.6	Flood Risk
240 min Summer	6.723	0.453	0.2	44.0	Flood Risk
360 min Summer	6.753	0.483	0.2	46.8	Flood Risk
480 min Summer	6.771	0.501	0.2	48.5	Flood Risk
600 min Summer	6.782	0.512	0.2	49.7	Flood Risk
720 min Summer	6.790	0.520	0.2	50.4	Flood Risk
960 min Summer	6.799	0.529	0.2	51.3	Flood Risk
1440 min Summer	6.802	0.532	0.2	51.6	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	141.021	0.0	27
30 min Summer	94.616	0.0	42
60 min Summer	60.860	0.0	72
120 min Summer	36.127	0.0	130
180 min Summer	26.472	0.0	190
240 min Summer	21.126	0.0	250
360 min Summer	15.216	0.0	370
480 min Summer	12.017	0.0	488
600 min Summer	9.993	0.0	608
720 min Summer	8.588	0.0	728
960 min Summer	6.754	0.0	966
1440 min Summer	4.821	0.0	1444

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Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	North End Road, Yapton 11228 PP Zone 9 1 in 100 yrs+40%	
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XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
2160 min Summer	6.793	0.523	0.2	50.7	Flood Risk
2880 min Summer	6.780	0.510	0.2	49.4	Flood Risk
4320 min Summer	6.764	0.494	0.2	47.9	Flood Risk
5760 min Summer	6.755	0.485	0.2	47.0	Flood Risk
7200 min Summer	6.750	0.480	0.2	46.5	Flood Risk
8640 min Summer	6.747	0.477	0.2	46.2	Flood Risk
10080 min Summer	6.746	0.476	0.2	46.1	Flood Risk
15 min Winter	6.481	0.211	0.2	20.4	O K
30 min Winter	6.558	0.288	0.2	27.9	O K
60 min Winter	6.643	0.373	0.2	36.2	O K
120 min Winter	6.713	0.443	0.2	42.9	Flood Risk
180 min Winter	6.754	0.484	0.2	46.9	Flood Risk
240 min Winter	6.782	0.512	0.2	49.6	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
2160 min Summer	3.461	0.0	2160
2880 min Summer	2.752	0.0	2512
4320 min Summer	2.023	0.0	3248
5760 min Summer	1.647	0.0	4048
7200 min Summer	1.418	0.0	4904
8640 min Summer	1.263	0.0	5720
10080 min Summer	1.152	0.0	6568
15 min Winter	141.021	0.0	27
30 min Winter	94.616	0.0	41
60 min Winter	60.860	0.0	70
120 min Winter	36.127	0.0	130
180 min Winter	26.472	0.0	188
240 min Winter	21.126	0.0	246

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Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	North End Road, Yapton 11228 PP Zone 9 1 in 100 yrs+40%	
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XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	6.816	0.546	0.2	52.9	Flood Risk
480 min Winter	6.837	0.567	0.2	55.0	Flood Risk
600 min Winter	6.852	0.582	0.2	56.4	Flood Risk
720 min Winter	6.862	0.592	0.2	57.4	Flood Risk
960 min Winter	6.874	0.604	0.2	58.5	Flood Risk
1440 min Winter	6.883	0.613	0.2	59.4	Flood Risk
2160 min Winter	6.880	0.610	0.2	59.1	Flood Risk
2880 min Winter	6.870	0.600	0.2	58.1	Flood Risk
4320 min Winter	6.846	0.576	0.2	55.9	Flood Risk
5760 min Winter	6.832	0.562	0.2	54.5	Flood Risk
7200 min Winter	6.821	0.551	0.2	53.5	Flood Risk
8640 min Winter	6.812	0.542	0.2	52.6	Flood Risk
10080 min Winter	6.805	0.535	0.2	51.9	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	15.216	0.0	364
480 min Winter	12.017	0.0	482
600 min Winter	9.993	0.0	600
720 min Winter	8.588	0.0	716
960 min Winter	6.754	0.0	950
1440 min Winter	4.821	0.0	1412
2160 min Winter	3.461	0.0	2088
2880 min Winter	2.752	0.0	2740
4320 min Winter	2.023	0.0	3500
5760 min Winter	1.647	0.0	4392
7200 min Winter	1.418	0.0	5336
8640 min Winter	1.263	0.0	6304
10080 min Winter	1.152	0.0	7168

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 PP Zone 9	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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Rainfall Details

Rainfall Model	FEH	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
FEH Rainfall Version	2013	Cv (Winter)	0.840
Site Location	GB 497736 103464 SU 97736 03464	Shortest Storm (mins)	15
Data Type	Point	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.075

Time (mins) Area			Time (mins) Area			Time (mins) Area		
From:	To:	(ha)	From:	To:	(ha)	From:	To:	(ha)
0	4	0.025	4	8	0.025	8	12	0.025

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Gloucester House 66a Church Walk Burgess Hill, BN43 6LB	North End Road, Yapton 11228 PP Zone 9 1 in 100 yrs+40%	
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XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 6.952

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	0.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.270	Depression Storage (mm)	5
Max Percolation (l/s)	89.8	Width (m)	6.3	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	51.3	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 10	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 10.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Half Drain Time : 5767 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	6.475	0.175	0.1	8.4	O K
30 min Summer	6.534	0.234	0.1	11.2	O K
60 min Summer	6.599	0.299	0.1	14.4	O K
120 min Summer	6.651	0.351	0.1	16.9	O K
180 min Summer	6.692	0.382	0.1	18.4	O K
240 min Summer	6.703	0.403	0.1	19.3	O K
360 min Summer	6.727	0.427	0.1	20.5	O K
480 min Summer	6.741	0.441	0.1	21.2	O K
600 min Summer	6.750	0.450	0.1	21.6	Flood Risk
720 min Summer	6.756	0.456	0.1	21.9	Flood Risk
960 min Summer	6.761	0.461	0.1	22.1	Flood Risk
1440 min Summer	6.760	0.460	0.1	22.1	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	141.931	0.0	23
30 min Summer	94.616	0.0	38
60 min Summer	60.860	0.0	68
120 min Summer	36.127	0.0	128
180 min Summer	26.472	0.0	186
240 min Summer	21.126	0.0	246
360 min Summer	15.216	0.0	366
480 min Summer	12.917	0.0	486
600 min Summer	9.993	0.0	606
720 min Summer	8.588	0.0	724
960 min Summer	6.764	0.0	964
1440 min Summer	4.821	0.0	1442

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Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 10	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 10.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
2160 min Summer	6.747	0.447	0.1	21.5	O K
2880 min Summer	6.734	0.434	0.1	20.8	O K
4320 min Summer	6.718	0.418	0.1	20.0	O K
5760 min Summer	6.707	0.407	0.1	19.5	O K
7200 min Summer	6.701	0.401	0.1	19.2	O K
8640 min Summer	6.697	0.397	0.1	19.0	O K
10080 min Summer	6.694	0.394	0.1	18.9	O K
15 min Winter	6.496	0.196	0.1	9.4	O K
30 min Winter	6.562	0.262	0.1	12.6	O K
60 min Winter	6.636	0.336	0.1	16.1	O K
120 min Winter	6.695	0.395	0.1	18.9	O K
180 min Winter	6.730	0.430	0.1	20.6	O K
240 min Winter	6.754	0.454	0.1	21.8	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
2160 min Summer	3.461	0.0	2100
2880 min Summer	2.752	0.0	2420
4320 min Summer	2.023	0.0	3160
5760 min Summer	1.647	0.0	3976
7200 min Summer	1.418	0.0	4824
8640 min Summer	1.263	0.0	5624
10080 min Summer	1.152	0.0	6464
15 min Winter	141.021	0.0	23
30 min Winter	84.616	0.0	37
60 min Winter	60.860	0.0	60
120 min Winter	36.123	0.0	126
180 min Winter	26.472	0.0	184
240 min Winter	21.126	0.0	244

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Gloucester House	North End Road, Yapton	
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Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	6.782	0.482	0.1	23.1	Flood Risk
480 min Winter	6.799	0.499	0.1	24.0	Flood Risk
600 min Winter	6.810	0.510	0.1	24.5	Flood Risk
720 min Winter	6.818	0.518	0.1	24.9	Flood Risk
960 min Winter	6.826	0.526	0.1	25.3	Flood Risk
1440 min Winter	6.830	0.530	0.1	25.5	Flood Risk
2160 min Winter	6.823	0.523	0.1	25.1	Flood Risk
2880 min Winter	6.809	0.509	0.1	24.4	Flood Risk
4320 min Winter	6.786	0.486	0.1	23.3	Flood Risk
5760 min Winter	6.770	0.470	0.1	22.5	Flood Risk
7200 min Winter	6.757	0.457	0.1	21.9	Flood Risk
8640 min Winter	6.746	0.446	0.1	21.4	O K
10080 min Winter	6.737	0.437	0.1	21.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	15.216	0.0	362
480 min Winter	12.017	0.0	486
600 min Winter	9.893	0.0	596
720 min Winter	8.588	0.0	714
960 min Winter	6.754	0.0	946
1440 min Winter	4.621	0.0	1404
2160 min Winter	3.461	0.0	2076
2880 min Winter	2.752	0.0	2712
4320 min Winter	2.023	0.0	3412
5760 min Winter	1.647	0.0	4328
7200 min Winter	1.418	0.0	5264
8640 min Winter	1.263	0.0	6216
10080 min Winter	1.152	0.0	7064

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Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 10	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 10.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEH	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
FEH Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080
Site Location	GB 497736 103464 SU 97736 03464	Cv (Summer)	0.750	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.032

Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:
	(ha)		(ha)
0	4 0.015	4	8 0.017

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Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 10	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 10.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 7.050

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00345	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.300	Depression Storage (mm)	0
Max Percolation (l/s)	44.4	Width (m)	10.0	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	16.0	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 11	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:08	Designed by mroberts	
File Zone 11.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Half Drain Time : 1549 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	4.744	0.094	0.0	2.6	O K
30 min Summer	4.775	0.125	0.0	3.5	O K
60 min Summer	4.810	0.160	0.0	4.5	O K
120 min Summer	4.837	0.187	0.0	5.2	O K
180 min Summer	4.852	0.202	0.0	5.6	O K
240 min Summer	4.862	0.213	0.0	5.9	O K
360 min Summer	4.872	0.222	0.0	6.2	O K
480 min Summer	4.877	0.227	0.0	6.3	O K
600 min Summer	4.879	0.229	0.0	6.4	O K
720 min Summer	4.880	0.230	0.0	6.4	O K
960 min Summer	4.877	0.227	0.0	6.3	O K
1440 min Summer	4.869	0.219	0.0	6.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	141.931	0.0	19
30 min Summer	94.616	0.0	34
60 min Summer	60.860	0.0	64
120 min Summer	36.127	0.0	124
180 min Summer	26.472	0.0	184
240 min Summer	21.126	0.0	242
360 min Summer	15.216	0.0	362
480 min Summer	12.917	0.0	482
600 min Summer	9.993	0.0	602
720 min Summer	8.588	0.0	722
960 min Summer	6.754	0.0	960
1440 min Summer	4.821	0.0	1240

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 11	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 11.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	4.858	0.208	0.0	5.8	O K
2880 min Summer	4.849	0.199	0.0	5.5	O K
4320 min Summer	4.834	0.184	0.0	5.1	O K
5760 min Summer	4.822	0.172	0.0	4.8	O K
7200 min Summer	4.812	0.162	0.0	4.5	O K
8640 min Summer	4.804	0.154	0.0	4.3	O K
10080 min Summer	4.797	0.147	0.0	4.1	O K
15 min Winter	4.755	0.105	0.0	2.9	O K
30 min Winter	4.790	0.140	0.0	3.9	O K
60 min Winter	4.829	0.178	0.0	5.0	O K
120 min Winter	4.850	0.210	0.0	5.9	O K
180 min Winter	4.877	0.227	0.0	6.3	O K
240 min Winter	4.889	0.239	0.0	6.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	3.461	0.0	1600
2880 min Summer	2.752	0.0	1909
4320 min Summer	2.023	0.0	2812
5760 min Summer	1.647	0.0	3632
7200 min Summer	1.418	0.0	4484
8640 min Summer	1.263	0.0	5264
10080 min Summer	1.152	0.0	6048
15 min Winter	141.021	0.0	19
30 min Winter	84.618	0.0	33
60 min Winter	60.860	0.0	64
120 min Winter	36.123	0.0	122
180 min Winter	26.472	0.0	180
240 min Winter	21.126	0.0	240

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 11	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:08	Designed by mroberts	
File Zone 11.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	4.901	0.251	0.0	7.0	O K
480 min Winter	4.907	0.257	0.0	7.2	O K
600 min Winter	4.911	0.261	0.0	7.3	O K
720 min Winter	4.912	0.262	0.0	7.3	O K
960 min Winter	4.912	0.262	0.0	7.3	O K
1440 min Winter	4.904	0.254	0.0	7.1	O K
2160 min Winter	4.889	0.239	0.0	6.7	O K
2880 min Winter	4.876	0.226	0.0	6.3	O K
4320 min Winter	4.854	0.203	0.0	5.7	O K
5760 min Winter	4.834	0.184	0.0	5.1	O K
7200 min Winter	4.817	0.167	0.0	4.6	O K
8640 min Winter	4.802	0.152	0.0	4.2	O K
10080 min Winter	4.788	0.138	0.0	3.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	15.216	0.0	358
480 min Winter	12.017	0.0	474
600 min Winter	9.993	0.0	590
720 min Winter	8.588	0.0	706
960 min Winter	6.784	0.0	932
1440 min Winter	4.621	0.0	1368
2160 min Winter	3.461	0.0	1712
2880 min Winter	2.752	0.0	2164
4320 min Winter	2.023	0.0	3068
5760 min Winter	1.647	0.0	3928
7200 min Winter	1.418	0.0	4760
8640 min Winter	1.263	0.0	5616
10080 min Winter	1.152	0.0	6360

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 11	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:08	Designed by mroberts	
File Zone 11.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEH	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
FEH Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change % +40

Time Area Diagram

Total Area (ha) 0.010

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

0	4	0.010
---	---	-------

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 11	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:08	Designed by mroberts	
File Zone 11.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 5.350

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00309	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	4.650	Depression Storage (mm)	0
Max Percolation (l/s)	25.8	Width (m)	6.0	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	15.5	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 12	
Burgess Hill, BN43 6LB	1 in 100 yr +40%	
Date 16/12/2021 16:04	Designed by mroberts	
File Zone 12.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Half Drain Time : 1535 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	6.149	0.099	0.1	5.2	O K
30 min Summer	6.182	0.132	0.1	7.6	O K
60 min Summer	6.219	0.169	0.1	8.9	O K
120 min Summer	6.247	0.197	0.1	10.4	O K
180 min Summer	6.264	0.214	0.1	11.3	O K
240 min Summer	6.274	0.224	0.1	11.8	O K
360 min Summer	6.286	0.236	0.1	12.4	O K
480 min Summer	6.291	0.241	0.1	12.7	O K
600 min Summer	6.294	0.244	0.1	12.9	O K
720 min Summer	6.295	0.245	0.1	12.9	O K
960 min Summer	6.293	0.243	0.1	12.8	O K
1440 min Summer	6.284	0.234	0.1	12.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	141.931	0.0	19
30 min Summer	94.616	0.0	34
60 min Summer	60.860	0.0	64
120 min Summer	36.127	0.0	124
180 min Summer	26.472	0.0	184
240 min Summer	21.126	0.0	242
360 min Summer	15.216	0.0	362
480 min Summer	12.917	0.0	482
600 min Summer	9.993	0.0	602
720 min Summer	8.588	0.0	722
960 min Summer	6.754	0.0	960
1440 min Summer	4.821	0.0	1282

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 12	
Burgess Hill, BN43 6LB	1 in 100 yr +40%	
Date 16/12/2021 16:04	Designed by mroberts	
File Zone 12.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	6.273	0.223	0.1	11.8	O K
2880 min Summer	6.264	0.214	0.1	11.3	O K
4320 min Summer	6.249	0.199	0.1	10.5	O K
5760 min Summer	6.237	0.197	0.1	9.9	O K
7200 min Summer	6.228	0.178	0.1	9.4	O K
8640 min Summer	6.219	0.169	0.1	8.9	O K
10080 min Summer	6.213	0.163	0.1	8.6	O K
15 min Winter	6.161	0.111	0.1	5.9	O K
30 min Winter	6.199	0.149	0.1	7.6	O K
60 min Winter	6.240	0.190	0.1	10.0	O K
120 min Winter	6.272	0.222	0.1	11.7	O K
180 min Winter	6.291	0.241	0.1	12.7	O K
240 min Winter	6.303	0.253	0.1	13.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	3.461	0.0	1624
2880 min Summer	2.752	0.0	2016
4320 min Summer	2.023	0.0	2852
5760 min Summer	1.647	0.0	3640
7200 min Summer	1.418	0.0	4472
8640 min Summer	1.263	0.0	5272
10080 min Summer	1.152	0.0	6056
15 min Winter	141.021	0.0	19
30 min Winter	84.616	0.0	34
60 min Winter	60.860	0.0	64
120 min Winter	36.123	0.0	122
180 min Winter	26.472	0.0	180
240 min Winter	21.126	0.0	240

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 12	
Burgess Hill, BN43 6LB	1 in 100 yr +40%	
Date 16/12/2021 16:04	Designed by mroberts	
File Zone 12.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
360 min Winter	6.316	0.266	0.1	14.1	O K
480 min Winter	6.324	0.274	0.1	14.4	O K
600 min Winter	6.327	0.277	0.1	14.6	O K
720 min Winter	6.329	0.279	0.1	14.7	O K
960 min Winter	6.329	0.279	0.1	14.7	O K
1440 min Winter	6.322	0.272	0.1	14.4	O K
2160 min Winter	6.307	0.257	0.1	13.5	O K
2880 min Winter	6.294	0.244	0.1	12.9	O K
4320 min Winter	6.272	0.222	0.1	11.7	O K
5760 min Winter	6.252	0.202	0.1	10.7	O K
7200 min Winter	6.235	0.185	0.1	9.8	O K
8640 min Winter	6.220	0.170	0.1	9.0	O K
10080 min Winter	6.206	0.156	0.1	8.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
360 min Winter	15.216	0.0	356
480 min Winter	12.017	0.0	474
600 min Winter	9.893	0.0	590
720 min Winter	8.588	0.0	706
960 min Winter	6.758	0.0	934
1440 min Winter	4.621	0.0	1370
2160 min Winter	3.461	0.0	1748
2880 min Winter	2.752	0.0	2168
4320 min Winter	2.023	0.0	3198
5760 min Winter	1.647	0.0	3976
7200 min Winter	1.418	0.0	4832
8640 min Winter	1.263	0.0	5696
10080 min Winter	1.152	0.0	6456

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 12	
Burgess Hill, BN43 6LB	1 in 100 yr +40%	
Date 16/12/2021 16:04	Designed by mroberts	
File Zone 12.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEH	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
FEH Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change % +40

Time Area Diagram

Total Area (ha) 0.020

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

0	4 0.020
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GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 12	
Burgess Hill, BN43 6LB	1 in 100 yr +40%	
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File Zone 12.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 5.583

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00310	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	6.650	Depression Storage (mm)	0
Max Percolation (l/s)	48.9	Width (m)	5.5	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	32.0	Membrane Depth (m)	0

GTA Civils Ltd		Page 1
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 13	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:07	Designed by mroberts	
File Zone 13.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Half Drain Time : 1582 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	5.712	0.097	0.0	2.6	O K
30 min Summer	5.744	0.129	0.0	3.5	O K
60 min Summer	5.780	0.165	0.0	4.5	O K
120 min Summer	5.808	0.193	0.0	5.2	O K
180 min Summer	5.824	0.209	0.0	5.6	O K
240 min Summer	5.834	0.219	0.0	5.9	O K
360 min Summer	5.845	0.230	0.0	6.2	O K
480 min Summer	5.850	0.235	0.0	6.4	O K
600 min Summer	5.853	0.238	0.0	6.4	O K
720 min Summer	5.853	0.238	0.0	6.4	O K
960 min Summer	5.851	0.236	0.0	6.4	O K
1440 min Summer	5.843	0.228	0.0	6.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	141.931	0.0	19
30 min Summer	94.616	0.0	34
60 min Summer	60.860	0.0	64
120 min Summer	36.127	0.0	124
180 min Summer	26.472	0.0	184
240 min Summer	21.126	0.0	242
360 min Summer	15.216	0.0	362
480 min Summer	12.917	0.0	482
600 min Summer	9.993	0.0	602
720 min Summer	8.588	0.0	722
960 min Summer	6.754	0.0	960
1440 min Summer	4.821	0.0	1254

GTA Civils Ltd		Page 2
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 13	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:07	Designed by mroberts	
File Zone 13.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
2160 min Summer	5.832	0.217	0.0	5.8	O K
2880 min Summer	5.822	0.207	0.0	5.6	O K
4320 min Summer	5.808	0.193	0.0	5.2	O K
5760 min Summer	5.796	0.181	0.0	4.9	O K
7200 min Summer	5.786	0.171	0.0	4.6	O K
8640 min Summer	5.778	0.163	0.0	4.4	O K
10080 min Summer	5.771	0.156	0.0	4.2	O K
15 min Winter	5.724	0.109	0.0	2.9	O K
30 min Winter	5.760	0.143	0.0	3.9	O K
60 min Winter	5.800	0.183	0.0	5.0	O K
120 min Winter	5.832	0.217	0.0	5.9	O K
180 min Winter	5.850	0.235	0.0	6.3	O K
240 min Winter	5.862	0.247	0.0	6.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
2160 min Summer	3.461	0.0	1620
2880 min Summer	2.752	0.0	2016
4320 min Summer	2.023	0.0	2812
5760 min Summer	1.647	0.0	3640
7200 min Summer	1.418	0.0	4484
8640 min Summer	1.263	0.0	5272
10080 min Summer	1.152	0.0	6048
15 min Winter	141.021	0.0	19
30 min Winter	84.616	0.0	33
60 min Winter	60.860	0.0	64
120 min Winter	36.123	0.0	122
180 min Winter	26.472	0.0	180
240 min Winter	21.126	0.0	240

GTA Civils Ltd		Page 3
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 13	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:07	Designed by mroberts	
File Zone 13.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
360 min Winter	5.875	0.260	0.0	7.0	O K
480 min Winter	5.882	0.267	0.0	7.2	O K
600 min Winter	5.886	0.271	0.0	7.3	O K
720 min Winter	5.887	0.272	0.0	7.4	O K
960 min Winter	5.887	0.272	0.0	7.3	O K
1440 min Winter	5.879	0.264	0.0	7.1	O K
2160 min Winter	5.864	0.249	0.0	6.7	O K
2880 min Winter	5.852	0.237	0.0	6.4	O K
4320 min Winter	5.829	0.214	0.0	5.9	O K
5760 min Winter	5.809	0.194	0.0	5.2	O K
7200 min Winter	5.792	0.177	0.0	4.8	O K
8640 min Winter	5.777	0.162	0.0	4.4	O K
10080 min Winter	5.764	0.149	0.0	4.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
360 min Winter	15.216	0.0	356
480 min Winter	12.017	0.0	474
600 min Winter	9.993	0.0	590
720 min Winter	8.588	0.0	706
960 min Winter	6.784	0.0	932
1440 min Winter	4.621	0.0	1370
2160 min Winter	3.461	0.0	1732
2880 min Winter	2.752	0.0	2188
4320 min Winter	2.023	0.0	3072
5760 min Winter	1.647	0.0	3976
7200 min Winter	1.418	0.0	4824
8640 min Winter	1.263	0.0	5624
10080 min Winter	1.152	0.0	6456

GTA Civils Ltd		Page 4
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 13	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
Date 16/12/2021 16:07	Designed by mroberts	
File Zone 13.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Rainfall Details

Rainfall Model	FEH	Data Type	Point	Cv (Winter)	0.840
Return Period (years)	100	Summer Storms	Yes	Shortest Storm (mins)	15
FEH Rainfall Version	2013	Winter Storms	Yes	Longest Storm (mins)	10080
Site Location	GB 497736 103464	SU 97736 03464	Cv (Summer)	0.750	Climate Change % +40

Time Area Diagram

Total Area (ha) 0.010

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

0	4	0.010
---	---	-------

GTA Civils Ltd		Page 5
Gloucester House	North End Road, Yapton	
66a Church Walk	11228 FP Zone 13	
Burgess Hill, BN43 6LB	1 in 100 yrs+40%	
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File Zone 13.SRCX	Checked by	
XP Solutions	Source Control 2020.1.3	

Model Details

Storage is Online Cover Level (m) 5.314

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00316	Porosity	0.30	Slope (1:X)	3.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	5.615	Depression Storage (mm)	0
Max Percolation (l/s)	25.0	Width (m)	6.0	Evaporation (mm/day)	0
Safety Factor	2.0	Length (m)	15.0	Membrane Depth (m)	0

Appendix E

Soil Soakage Test Report & Summary Sheet

Date	Location	Test number	Infiltration rate (x10 ⁻⁶ m/sec)	
			Average	BRE 365
January 2020	SA1A	1	0.86	~
	SA2A	1	1.7	~
	SA3A	1	0.92	~
	SA4A	1	0.55	~
	SA5A	1	0.76	~
October 2020	SA102	1	1.6	~
		2	1.6	1.4
		3	3.8	~
	SA103	1	2.0	1.7
		2	2.0	4.0
		3	7.1	6.7
	SA105	1	0.7	~
		2	0.52	~
		3	0.29	~
	SA106	1	1.2	~
		2	1.0	~
		3	0.98	~
October 2021	SA201	1	3.4	2.4
		2	1.0	~
		3	1.2	1.2
	SA202	1	19	16
		2	6.4	5.5
		3	4.9	3.9
	SA203	1	12	10
		2	5.5	3.6
		3	4.8	4.0
	SA204	1	11	8.8
		2	6.9	6.2
		3	6.2	5.6

Mike Dodds
Redrow Homes Ltd
Unit 1, Faraday Office Park
Basingstoke
Hampshire
RG24 8QQ

CAT/RAN/44005-008

Issue 2

4 November 2021

Dear Mike,

North End Road, Yapton – Report on Infiltration Testing and Groundwater Monitoring

Site Description

The site is located on the north west side of North End Road in Yapton, around 6 km to the north east of Bognor Regis in West Sussex. It has an area of around 1.8 hectares and is approximately rectangular. Stables are currently located in the eastern section of the site, whilst the remainder comprises a horse paddock. The site is relatively level, although the eastern section, occupied by the stables, slopes gently down towards the south east.

Previous Investigations

A 'Phase I Desk Study, Site Reconnaissance & Phase II Site Investigation Report' ref LP1841, dated 6 February 2019, has previously been completed for the site by Leap Environmental Ltd. A summary of relevant information from this report is provided below.

Ground Conditions

The surface covering typically comprises topsoil, around 0.2 to 0.3 m thick. Granular made ground was locally encountered at the surface in the area of the stables to a depth of around 0.4 m. Superficial River Terrace Deposits, generally comprising firm to stiff silty sandy clay, were encountered below the surface covering to depths of between 1 and 3 m, occasionally transitioning to clayey sand with increased depth. Weathered chalk was encountered from around 2.25 m below ground level (bgl).

Groundwater was not encountered during excavation of any of the trial pits.

Infiltration Testing

Infiltration tests were carried out in two of the trial pits with one test being completed at each location. The water was left to drain for between 3.5 and 5 hours. Infiltration rates of between

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Associates: A M Cross MEng CEng MICE A Lavelle MEng CEng MICE S R Jackson MEng CEng MISTructE R A Noble BSc FGS
Consultants: S D Preston BEng CEng FICE FISTructE K R Pursall BEng CEng MISTructE S J Mitchell BSc MSc CEng MEI MCIBSE MASHRAE

0.2 and 1.6×10^{-6} m/s were recorded. None of the tests drained past 75% effective depth; it was therefore not possible to calculate a BRE365 infiltration rate for any of the tests.

It was concluded that conventional soakaways would not be appropriate for the site, but deepened soakaways constructed in the structured chalk may be suitable.

E&P Site Works

Eastwood & Partners have undertaken the following works at the site:

- Three window sample holes were undertaken in November 2019 to depths of 5 m and each was installed with a groundwater monitoring well. Nine rounds of groundwater monitoring were subsequently carried out between November 2019 and March 2020.
- Shallow infiltration tests (1.0 m to 1.1 m bgl) were completed at five locations (SA1A to SA5A) between 27 and 29 January 2020. One test was completed at each location.
- Further shallow infiltration testing (0.9 m to 1.0 m bgl) was undertaken at four locations (SA102, SA103, SA105 and SA106) in October 2020. Three tests were completed at each location.
- Additional shallow infiltration testing (0.6 m bgl) was undertaken in four locations (SA201 to SA204) in October 2021. Three tests were completed at each location.

Ground Conditions

Between 0.05 and 0.3 m of topsoil was encountered at the surface, underlain by firm to stiff silty clay or clayey silt to depths of between 2.6 and 2.4 m. Silty sand was encountered at two locations in the south east of the site from around 2.5 m bgl to depths of 3.3 and 4 m. Structureless chalk, generally composed of gravelly sandy silty clay, was encountered below the site from around 2.9 to 4 m bgl. Groundwater was not encountered during the progression of exploratory holes.

Infiltration Testing

The material at the base of the soakaway pits typically comprised clayey silt or silty clay. The pits were filled with around 500 mm of water and left to drain for at least 3 hours. A number of pits suffered from minor side collapses due to heavy rainfall which occurred during the test, causing the depth of the water in the pit to rise. This has been accounted for during the calculation of the infiltration rates. The results and calculations are appended to this report, and are summarised in the table overleaf.

Date	Location	Test number	Infiltration rate ($\times 10^{-6}$ m/sec)	
			Average	BRE 365
January 2020	SA1A	1	0.86	~
	SA2A	1	1.7	~
	SA3A	1	0.92	~
	SA4A	1	0.55	~
	SA5A	1	0.76	~
October 2020	SA102	1	1.6	~
		2	1.6	1.4
		3	3.8	~
	SA103	1	2.0	1.7
		2	2.0	4.0
		3	7.1	6.7
	SA105	1	0.7	~
		2	0.52	~
		3	0.29	~
	SA106	1	1.2	~
		2	1.0	~
		3	0.98	~
October 2021	SA201	1	3.4	2.4
		2	1.0	~
		3	1.2	1.2
	SA202	1	19	16
		2	6.4	5.5
		3	4.9	3.9
	SA203	1	12	10
		2	5.5	3.6
		3	4.8	4.0
	SA204	1	11	8.8
		2	6.9	6.2
		3	6.2	5.6

Based on the results recorded above it is considered that it would be reasonable to adopt an infiltration rate of around 1.5×10^{-6} m/sec for the design of shallow infiltration features such as permeable paving. Features such as these are spread over wide areas and therefore the slight variations in the infiltration rates recorded will be diffused.

Groundwater Monitoring

Nine rounds of groundwater monitoring have been completed at the site. The results are appended, and are summarised in the table below.

Location	Range of Groundwater Depths (m) (No. of Rounds)
BH101	3.6 to 5.0 (8)
BH102	4.6 to 4.97 (3)
BH103	3.38 to 4.82 (9)

Over the monitoring period the groundwater depth varied between 3.38 and 5 m bgl. The groundwater was recorded to be at its shallowest during round 9 in BH103 in the west of the site. The groundwater in this well was consistently around 0.2 m higher compared to BH101 in the centre of the site, and around 0.5 to 1 m higher compared to BH102 in the east.

BH102 was only monitored on three occasions as the well could not be located during any visit after 17 January 2020. This is thought to be a result of heavy plant movement in the period following the 17 January obscuring/burying the well.

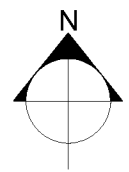
We trust that this meets with your approval, however if you have any comments or queries regarding the above, please do not hesitate to contact us.

Yours sincerely

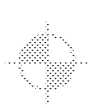


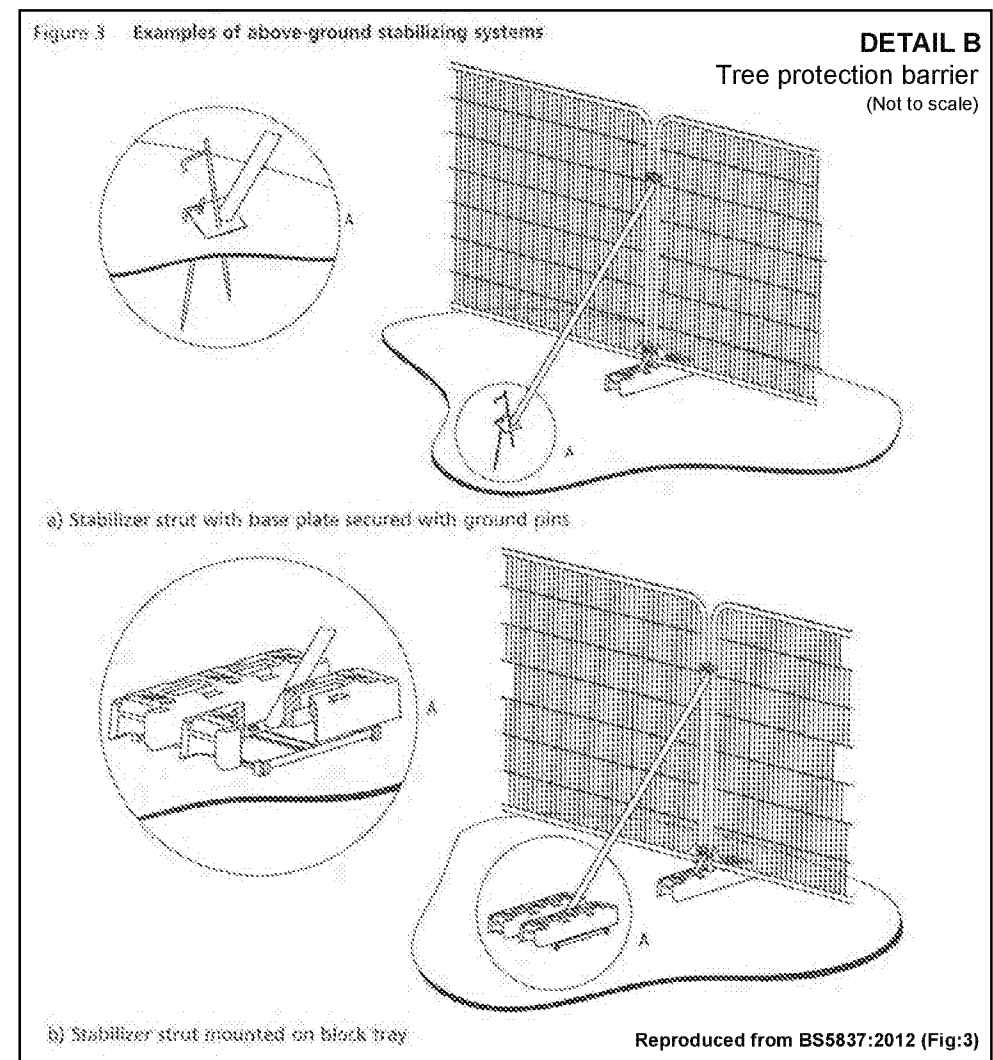
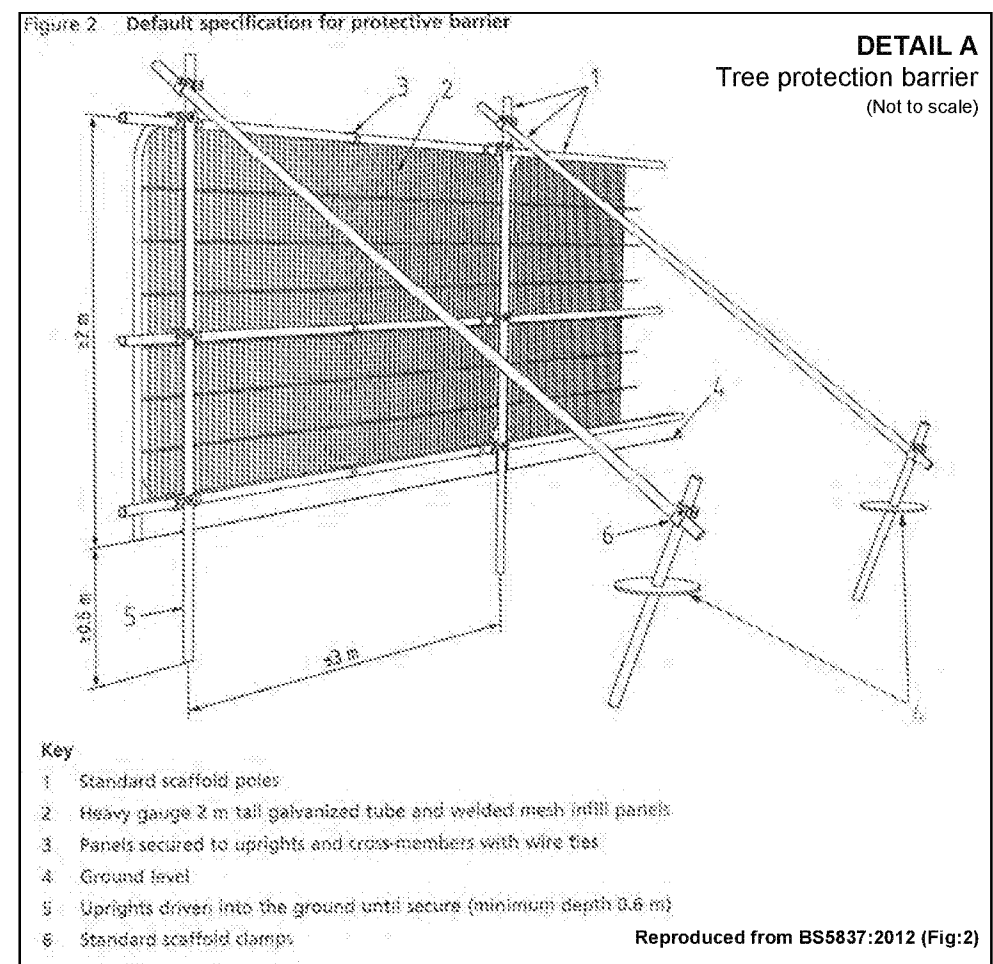
Catherine Topliss

Enc. Sketch plan showing GWM well and SA locations
 Calculation of Infiltration Rates
 Groundwater Monitoring Results
 WS logs



E&P Key

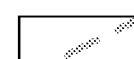
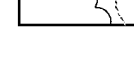
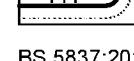
-  Approximate location of infiltration test undertaken by Eastwood & Partners in October 2021
-  Approximate location of infiltration test undertaken by Eastwood & Partners in January 2020
-  Approximate location of infiltration test undertaken by Eastwood & Partners in October 2020
-  Approximate location of groundwater monitoring well installed under the supervision of Eastwood & Partners in November 2019



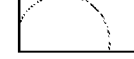
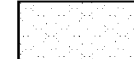
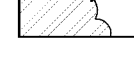
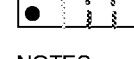
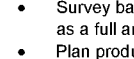
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Notes

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Key

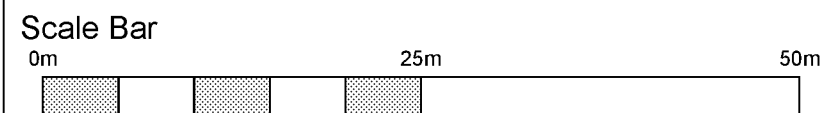
-  Survey boundary.
-  Tree with numbered reference. Canopy spread and BS5837:2012 tree quality category as shown below.
-  Tree (location estimated) with numbered reference. Canopy spread and BS5837:2012 tree quality category.
-  Tree off-site with numbered reference. Canopy spread and BS5837:2012 tree quality category.
-  Vegetation group with numbered reference. Canopy extends and BS5837:2012 tree quality category as shown below.
-  Hedge with numbered reference. Width and BS5837:2012 tree quality category as shown below.

BS 5837:2012 Tree Quality Categories - Table 1

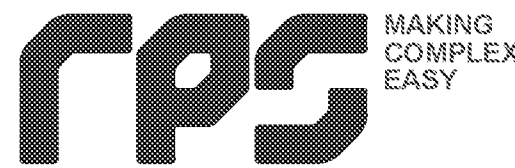
-  Category A - High quality
-  Category B - Moderate quality
-  Category C - Low quality
-  Category U - Unsuitable for retention
-  Tree outside of survey area (Shown for context only)
-  Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
-  Temporary protective fencing in accordance with Section 6.2 - BS5837:2012. See inset details for example barriers OR tree protection barrier provided by site hoarding fence
-  Surface area to be protected in accordance with Section 6.2.3 BS - 5837:2012 for pedestrian movements.
-  Excavation to be completed by hand, any required root pruning to be in accordance with BS 3998. Pruning of roots over 25mmØ to be monitored by arboriculturalist, with ongoing monitoring of trees condition by an arboriculturalist being recommended.
-  Vegetation group with numbered reference to be removed or partially removed to facilitate the development.
-  Tree to be removed with numbered reference. Canopy spread and BS5837:2012 tree quality category.

NOTES:

- Refer to RPS Tree Survey Report & Schedule for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'
- Due to the legal protection afforded to breeding birds vegetation removal should not take place during the bird nesting period, generally, although not restricted to, March - August inclusive.
- Survey based upon topographic survey produced by MK Surveys in Horsham, January 2019.



A	Updated to new layout	JMB	DC	07/20
Rev	Description	By	CB	Date



Lakesbury House, Hillingbury Road, Chandlers Ford,
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T: 02380 810 440 E: rpsso@rpsgroup.com

Client **Redrow Homes Limited**

Project **Maypole Lane
Yapton, Bognor Regis**

Title **Tree Protection and Removal Plan**

Status **For Planning** Drawn By **AB** PM/Checked by **DC**

Job Ref **JSL3292** Scale @ **A1** Date Created **02/2020**

RPS Drawing / Figure Number **711** Rev **A**

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Possibly offsite-confirm
ownership prior to removal

Possibly offsite-confirm
ownership prior to removal

PROJECT:	North End Road, Yapton	Job No. 44005	Date 27/01/2020
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared DN	Checked RAN

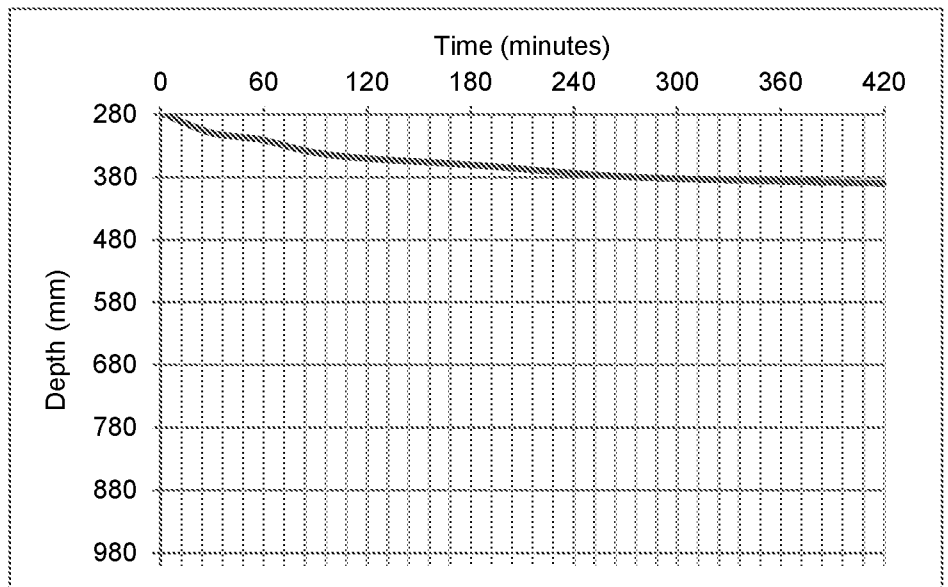
Test No. SA1A - Test 1

Test Pit Dimensions

Length = **1200 mm** Plan area = **0.54 m²**
 Width = **450 mm**
 Depth = **1000 mm** (Total depth)

Approximate time to discharge water into the hole: **30 Seconds**
 Depth to water after completion of pumping: **280 mm**

Time (min)	Depth (mm)
0	280
4	280
11	290
31	310
58	320
88	340
120	350
180	360
277	380
420	390



Water level at 470 mm when checked in the morning the next day.

Depth (m)	Description
0.0 - 0.15	TOPSOIL: Dark brown slightly silty sandy CLAY with rootlets.
0.15 - 0.7	Firm brown slightly gravelly silty CLAY.
0.7 - 1.0	Stiff brown silty CLAY.

PROJECT:	North End Road, Yapton	Job No. 44005	Date 27/01/2020
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared DN	Checked RAN

Test No. SA1A - Test 1

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **280 mm** Average water depth: **665 mm**
Start time = **0 min**

Change in water depth: **110 mm**

Final parameters

Depth to water = **390 mm** Time interval: **420 min**
End time = **420 min**

Effective Storage Volume of Water in the Trial Pit = **0.3888 m³**
75% Effective Depth = **460 mm** from ground level
25% Effective Depth = **820 mm** from ground level
Time at 75% Effective Depth = **N/A minutes**
Time at 25% Effective Depth = **N/A minutes**

V_{p75-25} = **0.19 m³**

a_{p50} = **1.73 m²**

t_{p75-25} = **sec**

f = **m/sec**

Average Soakaway Rate = **2.4E-06 m³/sec**
Average soakaway area = **2.73 m² (sides + base)**

BR365 Soil Infiltration Rate = N/A m/sec
Average Infiltration Rate = 8.6E-07 m/sec

PROJECT:	North End Road, Yapton	Job No. 44005	Date 27/01/2020
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared DN	Checked RAN

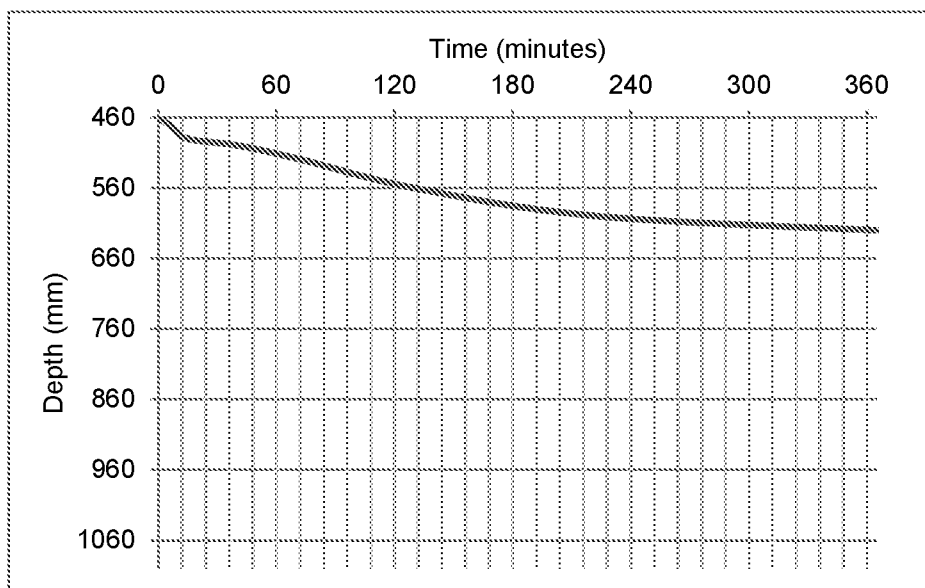
Test No. SA2A - Test 1

Test Pit Dimensions

Length = **1500 mm** Plan area = **0.675 m²**
 Width = **450 mm**
 Depth = **1100 mm** (Total depth)

Approximate time to discharge water into the hole: **30 Seconds**
 Depth to water after completion of pumping: **460 mm**

Time (min)	Depth (mm)
0	460
5	470
15	490
41	500
73	520
130	560
223	600
365	620



Water level at 920 mm when checked in the morning the next day.

Depth (m)	Description
0.0 - 0.05	TOPSOIL: Greyish brown silty sandy CLAY with rootlets.
0.05 - 0.25	Stiff brown slightly sandy silty CLAY.
0.25 - 1.1	Stiff orangish brown slightly sandy slightly gravelly silty CLAY

PROJECT:	North End Road, Yapton	Job No. 44005	Date 27/01/2020
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared DN	Checked RAN

Test No. SA2A - Test 1

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **460 mm** Average water depth: **560 mm**
Start time = **0 min**

Change in water depth: **160 mm**

Final parameters

Depth to water = **620 mm** Time interval: **365 min**
End time = **365 min**

Effective Storage Volume of Water in the Trial Pit = **0.432 m³**
75% Effective Depth = **620 mm** from ground level
25% Effective Depth = **940 mm** from ground level
Time at 75% Effective Depth = **365 minutes**
Time at 25% Effective Depth = **N/A minutes**

V_{p75-25} = **0.22 m³**

a_{p50} = **1.92 m²**

t_{p75-25} = **sec**

f = **m/sec**

Average Soakaway Rate = **4.9E-06 m³/sec**

Average soakaway area = **2.86 m² (sides + base)**

BR365 Soil Infiltration Rate = N/A m/sec

Average Infiltration Rate = 1.7E-06 m/sec

PROJECT:	North End Road, Yapton	Job No. 44005	Date 27/01/2020
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared DN	Checked RAN

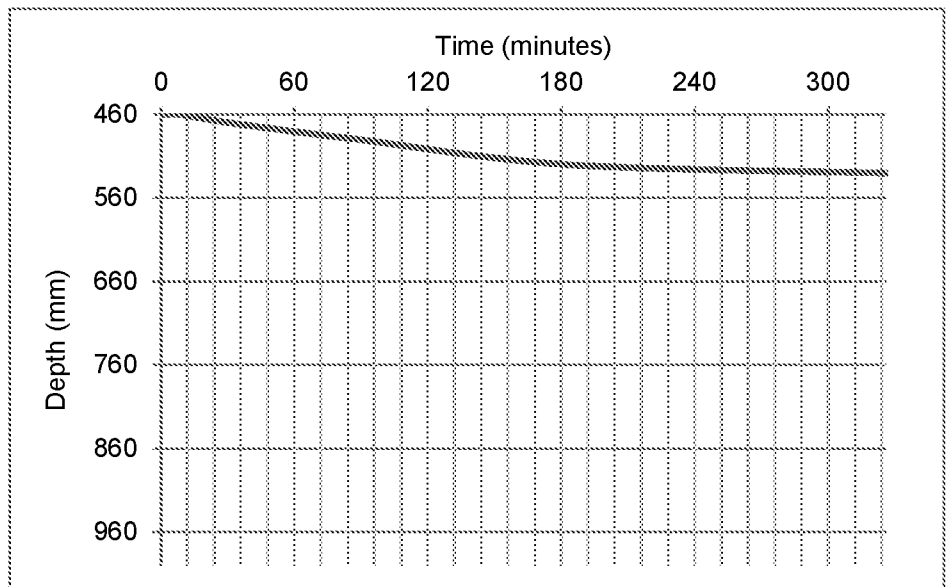
Test No. SA3A - Test 1

Test Pit Dimensions

Length = **1600** mm Plan area = **0.72** m²
Width = **450** mm
Depth = **1000** mm (Total depth)

Approximate time to discharge water into the hole: **30** Seconds
Depth to water after completion of pumping: **460** mm

Time (min)	Depth (mm)
0	460
9	460
31	470
89	490
184	520
326	530



Water level at 600 mm when checked in the morning the next day.

Depth (m)	Description
0.0 - 0.25	TOPSOIL: Dark brown silty CLAY.
0.25 - 1.0	Firm brown clayey SILT.

PROJECT:	North End Road, Yapton	Job No. 44005	Date 27/01/2020
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared DN	Checked RAN

Test No. SA3A - Test 1

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **460** mm Average water depth: **505** mm
Start time = **0** min

Change in water depth: **70** mm

Final parameters

Depth to water = **530** mm Time interval: **326** min
End time = **326** min

Effective Storage Volume of Water in the Trial Pit = **0.3888** m³
75% Effective Depth = **595** mm from ground level
25% Effective Depth = **865** mm from ground level
Time at 75% Effective Depth = **N/A** minutes
Time at 25% Effective Depth = **N/A** minutes

V_{p75-25} = **0.19** m³

a_{p50} = **1.83** m²

t_{p75-25} = sec

f = m/sec

Average Soakaway Rate = **2.6E-06** m³/sec
Average soakaway area = **2.79** m² (sides + base)

BR365 Soil Infiltration Rate = N/A m/sec
Average Infiltration Rate = 9.2E-07 m/sec

PROJECT:	North End Road, Yapton	Job No. 44005	Date 27/01/2020
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared DN	Checked RAN

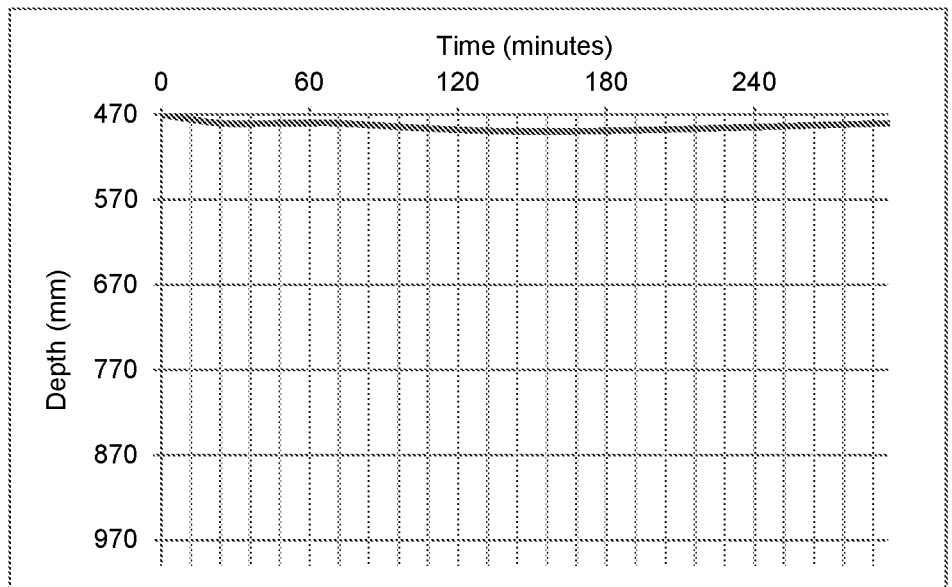
Test No. SA4A - Test 1

Test Pit Dimensions

Length = **1600** mm Plan area = **0.72** m²
Width = **450** mm
Depth = **1000** mm (Total depth)

Approximate time to discharge water into the hole: **30** Seconds
Depth to water after completion of pumping: **460** mm

Time (min)	Depth (mm)
0	470
24	480
47	480
59	480
71	480
153	490
294	480



Water level at 500 mm when checked in the morning the next day.

Depth (m)	Description
0.0 - 0.1	TOPSOIL: Dark brown silty CLAY.
0.1 - 1.0	Firm brown clayey SILT.

PROJECT:	North End Road, Yapton	Job No. 44005	Date 27/01/2020
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared DN	Checked RAN

Test No. SA4A - Test 1

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **470** mm Average water depth: **520** mm
Start time = **0** min Change in water depth: **20** mm

Final parameters

Depth to water = **490** mm Time interval: **153** min
End time = **153** min

Effective Storage Volume of Water in the Trial Pit = **0.3816** m³
75% Effective Depth = **603** mm from ground level
25% Effective Depth = **868** mm from ground level
Time at 75% Effective Depth = **N/A** minutes
Time at 25% Effective Depth = **N/A** minutes

V_{p75-25} = **0.19** m³

a_{p50} = **1.81** m²

t_{p75-25} = sec

f = m/sec

Average Soakaway Rate = **1.6E-06** m³/sec
Average soakaway area = **2.85** m² (sides + base)

BR365 Soil Infiltration Rate = N/A m/sec
Average Infiltration Rate = 5.5E-07 m/sec

PROJECT:	North End Road, Yapton	Job No. 44005	Date 27/01/2020
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared DN	Checked RAN

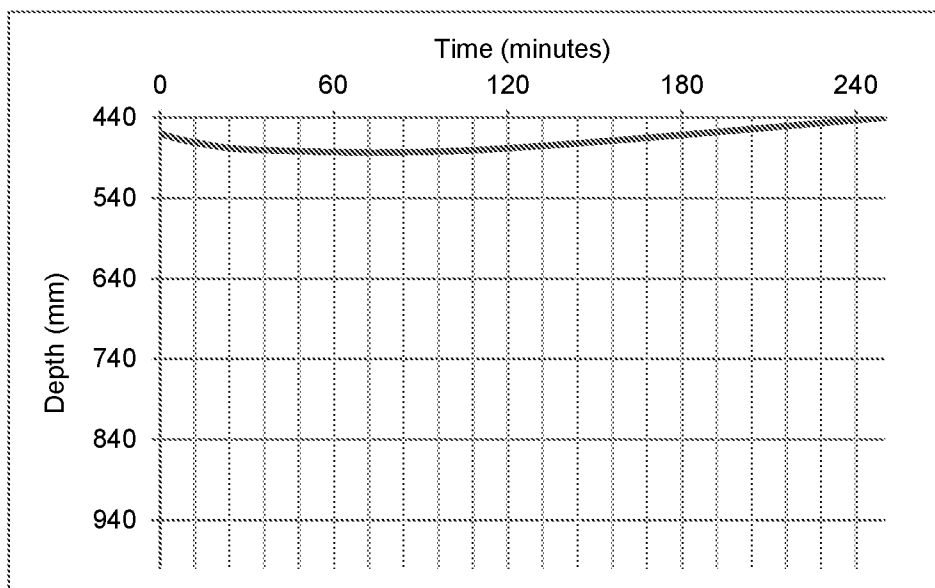
Test No. SA5A - Test 1

Test Pit Dimensions

Length = **1700 mm** Plan area = **0.765 m²**
Width = **450 mm**
Depth = **1000 mm** (Total depth)

Approximate time to discharge water into the hole: **30 Seconds**
Depth to water after completion of pumping: **460 mm**

Time (min)	Depth (mm)
0	460
11	470
33	480
110	480
250	440



Water level at 480 mm when checked in the morning the next day.
Water level rise thought to be a result of heavy rain during the test.

Depth (m)	Description
0.0 - 0.2	TOPSOIL: Dark brown silty CLAY.
0.2 - 1.0	Firm brown clayey SILT.

Infiltration Test Results and Calculation of Infiltration Rates

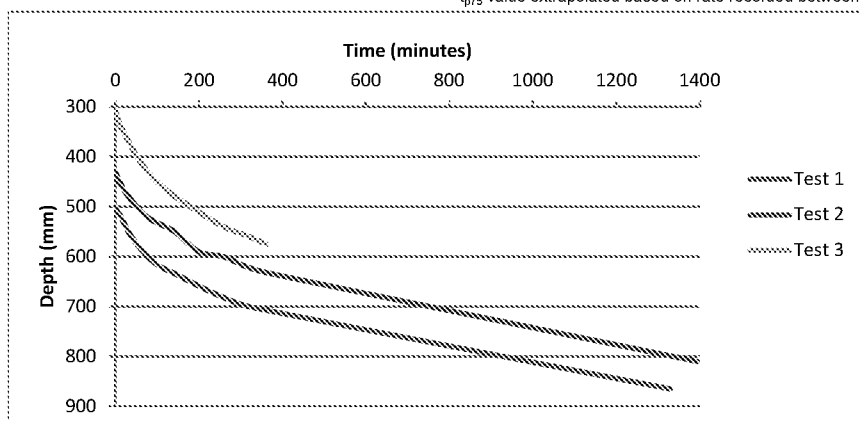
Site: North End Road, Yapton

Client: Redrow Homes

Test Reference: SA102

[illegible]

* $t_{0.75}$ value extrapolated based on rate recorded between 376 and 1393 min



Testing completed by	RAN
Date	21-23/10/2020

Calculation completed by	RAN
Date	26/10/2020

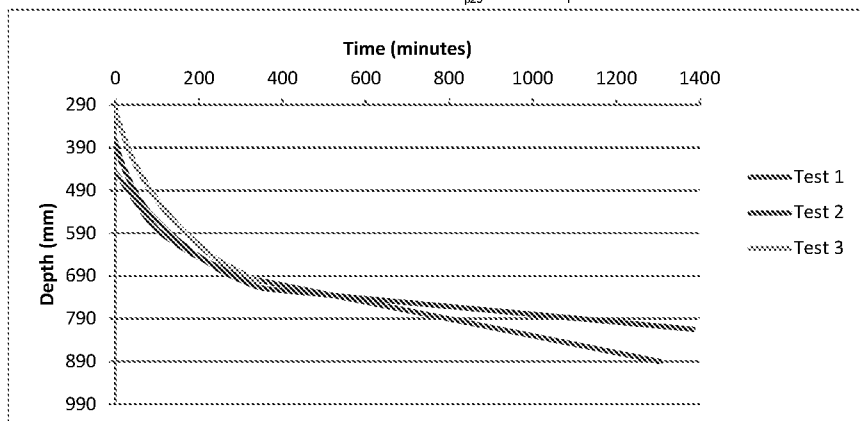
Calculation checked by	GC
Date	26/10/2020

Infiltration Test Results and Calculation of Infiltration Rates

Site: North End Road, Yapton
Client: Redrow Homes
Test Reference: SA103

[illegible]

* t_{n25} value extrapolated based on rate recorded between 302 and 365 min



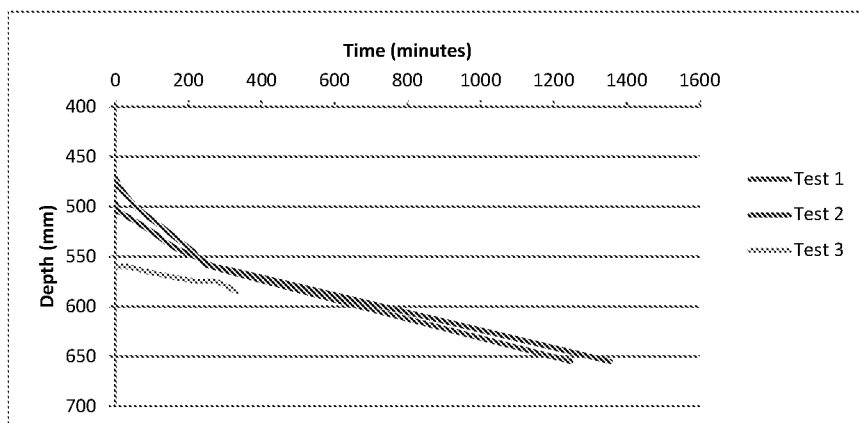
Testing completed by	RAN
Date	21-23/10/20

Calculation completed by	RAN
Date	26/10/2020

Calculation checked by	GC
Date	26/10/2020

Infiltration Test Results and Calculation of Infiltration Rates

Site: North End Road, Yapton
Client: Redrow Homes
Test Reference: SA105

[illegible]

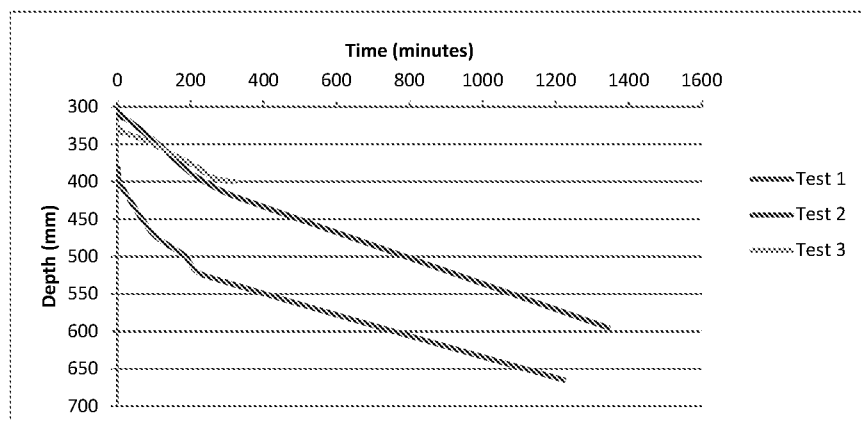
Testing completed by	RAN
Date	21-23/10/20

Calculation completed by	RAN
Date	26/10/2020

Calculation checked by	GC
Date	26/10/2020

Infiltration Test Results and Calculation of Infiltration Rates

Site: North End Road, Yapton
Client: Redrow Homes
Test Reference: SA106

[illegible]

Testing completed by	RAN
Date	21-23/10/20

Calculation completed by	RAN
Date	26/10/2020

Calculation checked by	GC
Date	26/10/2020

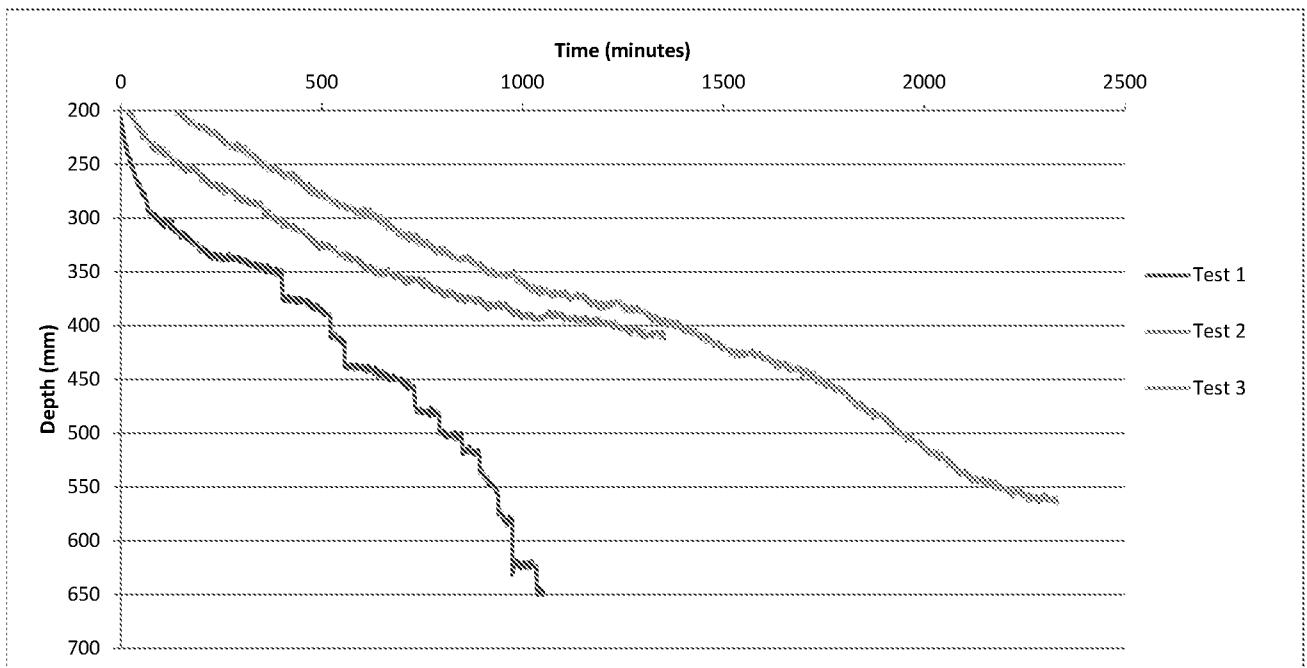
Infiltration Test Results and Calculation of Infiltration Rates

Site: North End Road, Yapton

Client: Redrow Homes

Test Reference: SA201

Test 1		Test 2		Test 3	
Pit Dimensions		Pit Dimensions		Pit Dimensions	
Trial pit length (mm)	1200	Trial pit length (mm)	1200	Trial pit length (mm)	1200
Trial pit width (mm)	650	Trial pit width (mm)	650	Trial pit width (mm)	650
Trial pit depth (mm)	650	Trial pit depth (mm)	650	Trial pit depth (mm)	635
Plan area (m ²)	0.78	Plan area (m ²)	0.78	Plan area (m ²)	0.78
Depth to water at start of test (mm)	208	Depth to water at start of test (mm)	193	Depth to water at start of test (mm)	173
End time (sec)	63180	End time (sec)	81120	End time (sec)	139860
Final depth	650	Final depth	412	Final depth	565
75% Effective depth (mm)	319	75% Effective depth (mm)	307	75% Effective depth (mm)	289
25% Effective depth (mm)	540	25% Effective depth (mm)	536	25% Effective depth (mm)	520
Time at 75% effective depth - t_{p75} (sec)	9960	Time at 75% effective depth - t_{p75} (sec)	24840	Time at 75% effective depth - t_{p75} (sec)	32400
Time at 25% effective depth - t_{p25} (sec)	54180	Time at 25% effective depth - t_{p25} (sec)	N/A	Time at 25% effective depth - t_{p25} (sec)	121080
Effective Storage volume of water (m ³)	0.34476	Effective Storage volume of water (m ³)	0.35646	Effective Storage volume of water (m ³)	0.36036
V_{p75-25} (m ³)	0.17238	V_{p75-25} (m ³)	0.17823	V_{p75-25} (m ³)	0.18018
Internal surface area - a_{p50} (m ²)	1.5977	Internal surface area - a_{p50} (m ²)	1.62545	Internal surface area - a_{p50} (m ²)	1.6347
t_{p75-25} (sec)	44220	t_{p75-25} (sec)		t_{p75-25} (sec)	88680
BR365 Soil Infiltration Rate	2.4E-06	BR365 Soil Infiltration Rate	N/A	BR365 Soil Infiltration Rate	1.2E-06
Average Soil Infiltration Rate	3.4E-06	Average Soil Infiltration Rate	1.0E-06	Average Soil Infiltration Rate	1.2E-06
Testing completed by	EJD	Calculation completed by	EJD	Calculation checked by	RAN
Date	27-29/10/21	Date	03/11/2021	Date	03/11/2021



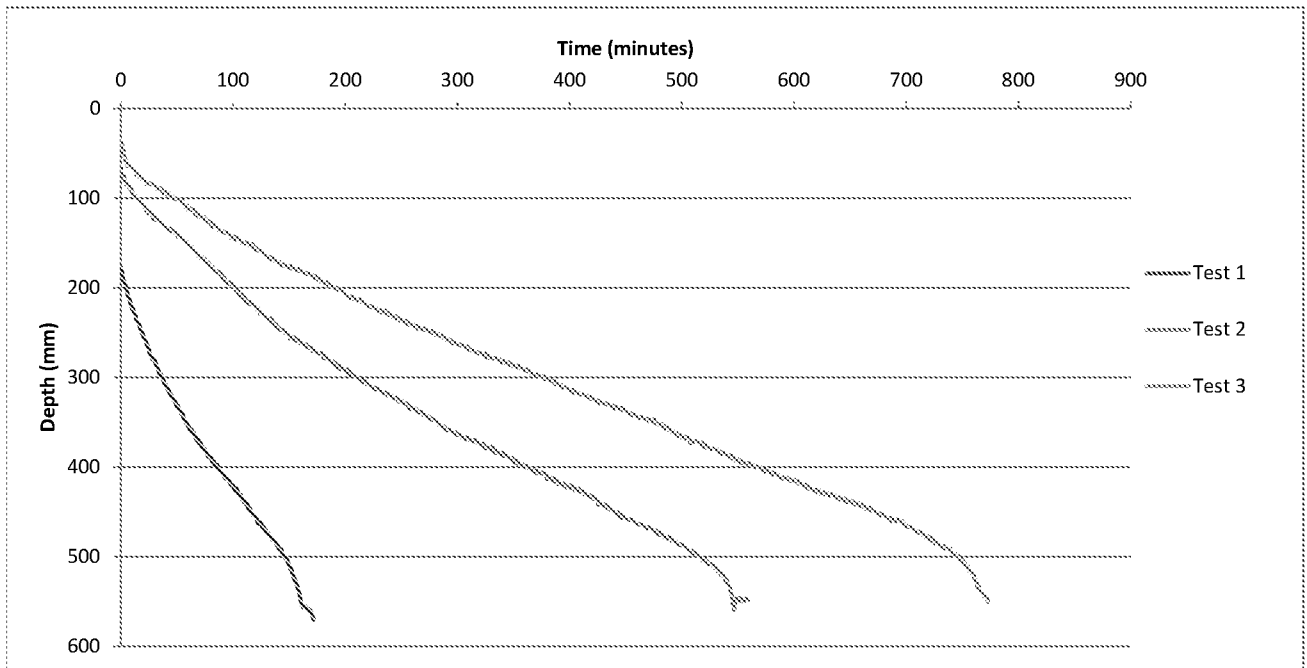
Infiltration Test Results and Calculation of Infiltration Rates

Site: North End Road, Yapton

Client: Redrow Homes

Test Reference: SA202

Test 1		Test 2		Test 3	
Pit Dimensions		Pit Dimensions		Pit Dimensions	
Trial pit length (mm)	1200	Trial pit length (mm)	1200	Trial pit length (mm)	1200
Trial pit width (mm)	600	Trial pit width (mm)	600	Trial pit width (mm)	600
Trial pit depth (mm)	570	Trial pit depth (mm)	560	Trial pit depth (mm)	548
Plan area (m ²)	0.72	Plan area (m ²)	0.72	Plan area (m ²)	0.72
Depth to water at start of test (mm)	177	Depth to water at start of test (mm)	65	Depth to water at start of test (mm)	36
End time (sec)	10320	End time (sec)	33540	End time (sec)	46380
Final depth	570	Final depth	548	Final depth	550
75% Effective depth (mm)	275	75% Effective depth (mm)	189	75% Effective depth (mm)	164
25% Effective depth (mm)	472	25% Effective depth (mm)	436	25% Effective depth (mm)	420
Time at 75% effective depth - t_{p75} (sec)	1620	Time at 75% effective depth - t_{p75} (sec)	5460	Time at 75% effective depth - t_{p75} (sec)	7800
Time at 25% effective depth - t_{p25} (sec)	7800	Time at 25% effective depth - t_{p25} (sec)	25440	Time at 25% effective depth - t_{p25} (sec)	36480
Effective Storage volume of water (m ³)	0.28296	Effective Storage volume of water (m ³)	0.3564	Effective Storage volume of water (m ³)	0.36864
V_{p75-25} (m ³)	0.14148	V_{p75-25} (m ³)	0.1782	V_{p75-25} (m ³)	0.18432
Internal surface area - a_{p50} (m ²)	1.4274	Internal surface area - a_{p50} (m ²)	1.611	Internal surface area - a_{p50} (m ²)	1.6416
t_{p75-25} (sec)	6180	t_{p75-25} (sec)	19980	t_{p75-25} (sec)	28680
BR365 Soil Infiltration Rate	1.6E-05	BR365 Soil Infiltration Rate	5.5E-06	BR365 Soil Infiltration Rate	3.9E-06
Average Soil Infiltration Rate	1.9E-05	Average Soil Infiltration Rate	6.4E-06	Average Soil Infiltration Rate	4.9E-06
Testing completed by	EJD	Calculation completed by	EJD	Calculation checked by	RAN
Date	27-29/10/21	Date	03/11/2021	Date	04/11/2021



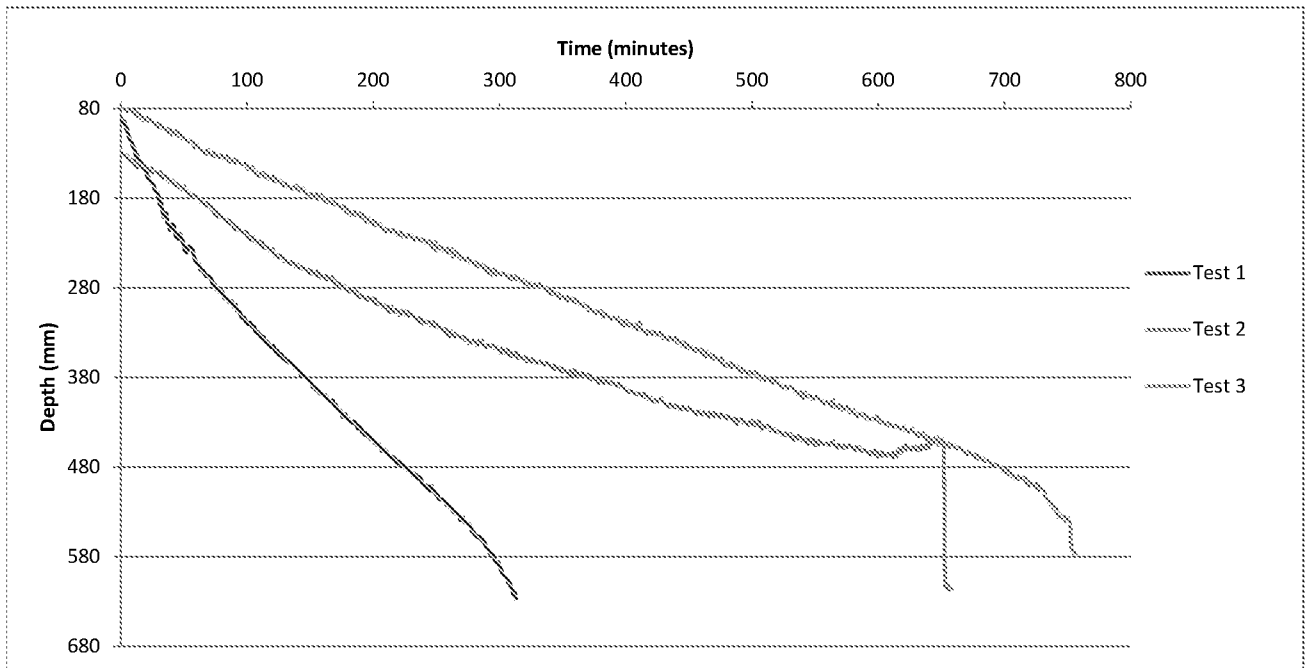
Infiltration Test Results and Calculation of Infiltration Rates

Site: North End Road, Yapton

Client: Redrow Homes

Test Reference: SA203

Test 1		Test 2		Test 3	
Pit Dimensions		Pit Dimensions		Pit Dimensions	
Trial pit length (mm)	1300	Trial pit length (mm)	1300	Trial pit length (mm)	1300
Trial pit width (mm)	600	Trial pit width (mm)	600	Trial pit width (mm)	600
Trial pit depth (mm)	630	Trial pit depth (mm)	627	Trial pit depth (mm)	590
Plan area (m ²)	0.78	Plan area (m ²)	0.78	Plan area (m ²)	0.78
Depth to water at start of test (mm)	91	Depth to water at start of test (mm)	126	Depth to water at start of test (mm)	75
End time (sec)	18780	End time (sec)	39480	End time (sec)	45420
Final depth	627	Final depth	617	Final depth	575
75% Effective depth (mm)	226	75% Effective depth (mm)	251	75% Effective depth (mm)	204
25% Effective depth (mm)	495	25% Effective depth (mm)	502	25% Effective depth (mm)	461
Time at 75% effective depth - t_{p75} (sec)	2880	Time at 75% effective depth - t_{p75} (sec)	7920	Time at 75% effective depth - t_{p75} (sec)	11640
Time at 25% effective depth - t_{p25} (sec)	14280	Time at 25% effective depth - t_{p25} (sec)	39140	Time at 25% effective depth - t_{p25} (sec)	40020
Effective Storage volume of water (m ³)	0.42042	Effective Storage volume of water (m ³)	0.39078	Effective Storage volume of water (m ³)	0.4017
V_{p75-25} (m ³)	0.21021	V_{p75-25} (m ³)	0.19539	V_{p75-25} (m ³)	0.20085
Internal surface area - a_{p50} (m ²)	1.8041	Internal surface area - a_{p50} (m ²)	1.7319	Internal surface area - a_{p50} (m ²)	1.7585
t_{p75-25} (sec)	11400	t_{p75-25} (sec)	31220	t_{p75-25} (sec)	28380
BR365 Soil Infiltration Rate	1.0E-05	BR365 Soil Infiltration Rate	3.6E-06	BR365 Soil Infiltration Rate	4.0E-06
Average Soil Infiltration Rate	1.2E-05	Average Soil Infiltration Rate	5.5E-06	Average Soil Infiltration Rate	4.8E-06
Testing completed by	EJD	Calculation completed by	EJD	Calculation checked by	RAN
Date	27-29/10/21	Date	03/11/2021	Date	04/11/2021



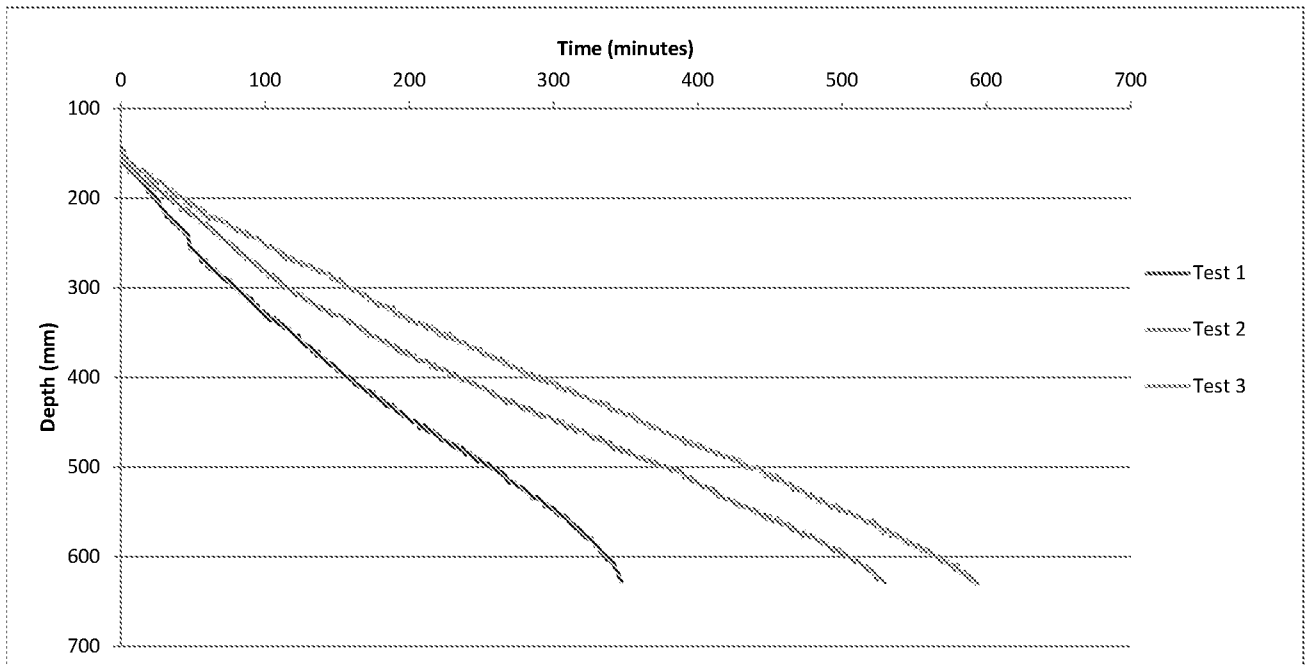
Infiltration Test Results and Calculation of Infiltration Rates

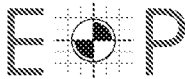
Site: North End Road, Yapton

Client: Redrow Homes

Test Reference: SA204

Test 1		Test 2		Test 3	
Pit Dimensions		Pit Dimensions		Pit Dimensions	
Trial pit length (mm)	1300	Trial pit length (mm)	1300	Trial pit length (mm)	1300
Trial pit width (mm)	600	Trial pit width (mm)	600	Trial pit width (mm)	600
Trial pit depth (mm)	630	Trial pit depth (mm)	628	Trial pit depth (mm)	630
Plan area (m ²)	0.78	Plan area (m ²)	0.78	Plan area (m ²)	0.78
Depth to water at start of test (mm)	144	Depth to water at start of test (mm)	150	Depth to water at start of test (mm)	150
End time (sec)	20820	End time (sec)	31800	End time (sec)	35640
Final depth	628	Final depth	628	Final depth	630
75% Effective depth (mm)	266	75% Effective depth (mm)	270	75% Effective depth (mm)	270
25% Effective depth (mm)	509	25% Effective depth (mm)	509	25% Effective depth (mm)	510
Time at 75% effective depth - t_{p75} (sec)	3300	Time at 75% effective depth - t_{p75} (sec)	5460	Time at 75% effective depth - t_{p75} (sec)	7200
Time at 25% effective depth - t_{p25} (sec)	15900	Time at 25% effective depth - t_{p25} (sec)	23400	Time at 25% effective depth - t_{p25} (sec)	27000
Effective Storage volume of water (m ³)	0.37908	Effective Storage volume of water (m ³)	0.37284	Effective Storage volume of water (m ³)	0.3744
V_{p75-25} (m ³)	0.18954	V_{p75-25} (m ³)	0.18642	V_{p75-25} (m ³)	0.1872
Internal surface area - a_{p50} (m ²)	1.7034	Internal surface area - a_{p50} (m ²)	1.6882	Internal surface area - a_{p50} (m ²)	1.692
t_{p75-25} (sec)	12600	t_{p75-25} (sec)	17940	t_{p75-25} (sec)	19800
BR365 Soil Infiltration Rate	8.8E-06	BR365 Soil Infiltration Rate	6.2E-06	BR365 Soil Infiltration Rate	5.6E-06
Average Soil Infiltration Rate	1.1E-05	Average Soil Infiltration Rate	6.9E-06	Average Soil Infiltration Rate	6.2E-06
Testing completed by	EJD	Calculation completed by	EJD	Calculation checked by	RAN
Date	27-29/10/21	Date	03/11/2021	Date	04/11/2021





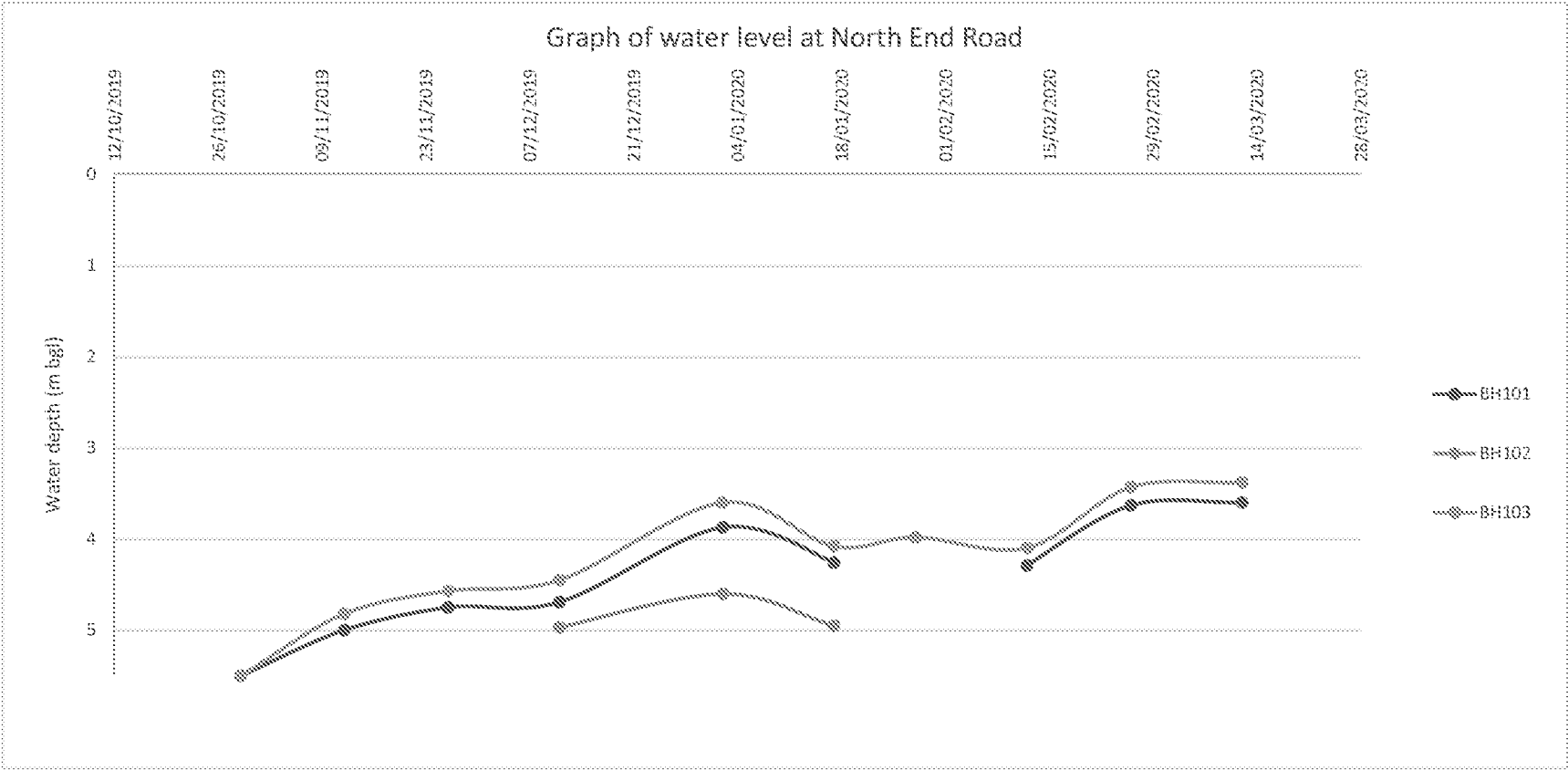
Winter Groundwater Monitoring Results

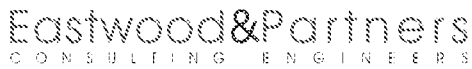
North End Road

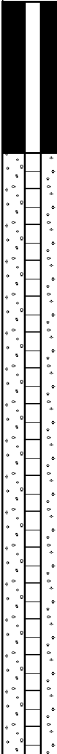
BH	Monitoring Date											BH Depth
	29/10/2019	12/11/2019	26/11/2019	11/12/2019	02/01/2020	17/01/2020	28/01/2020	12/02/2020	26/02/2020	12/03/2020	22/10/2020	
BH101		5	4.75	4.69	3.87	4.26		4.29	3.63	3.6	CNF	5.04
BH102				4.97	4.6	4.95	CNF	CNF	CNF	CNF	CNF	5.07
BH103		4.82	4.57	4.45	3.6	4.08	3.98	4.1	3.43	3.38	CNF	5.05

CNF - Could not find - wells appear to have been buried or destroyed by plant movement/archaeological works.

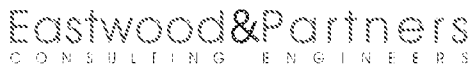
NOTE: Where cells are blank, well was found to be dry.

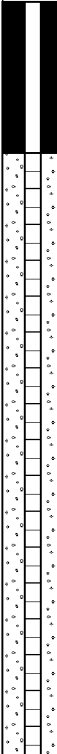


								Borehole No. BH101 Sheet 1 of 1	
Project Name North End Road					Project No. 44005A		Co-ords:		Hole Type WS
Location: Yapton							Level:		Scale 1:50
Client: Redrow Homes							Dates: 28/10/2019		Logged By RAN

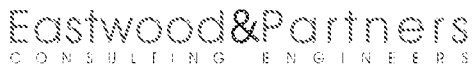
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
					0.20			TOPSOIL: Dark brown slightly sandy, silty CLAY.		
					0.40			Firm brown silty CLAY.		
								Very stiff brown desiccated silty CLAY.		
					1.20			Stiff brown/orange silty sandy CLAY.		
					2.10			Firm brown/orange silty very sandy CLAY.		
					2.60			Brown/orange very silty slightly gravelly SAND. Gravel is fine to coarse, angular flint.		
					3.30			Structureless CHALK composed of cream/pale yellow firm very gravelly silty CLAY. Gravel is weak, low and medium density cream/white and angular to sub-angular. (Grade Dm)		
					5.00			End of Borehole at 5.000m		

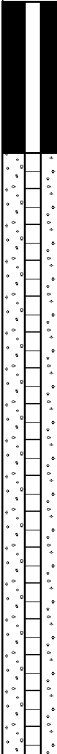
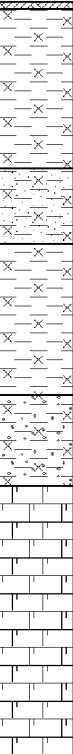
Remarks No groundwater encountered.	
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								Borehole No. BH102 Sheet 1 of 1	
Project Name North End Road					Project No. 44005A		Co-ords:		Hole Type WS
Location: Yapton					Level:			Scale 1:50	
Client: Redrow Homes					Dates: 28/10/2019			Logged By RAN	

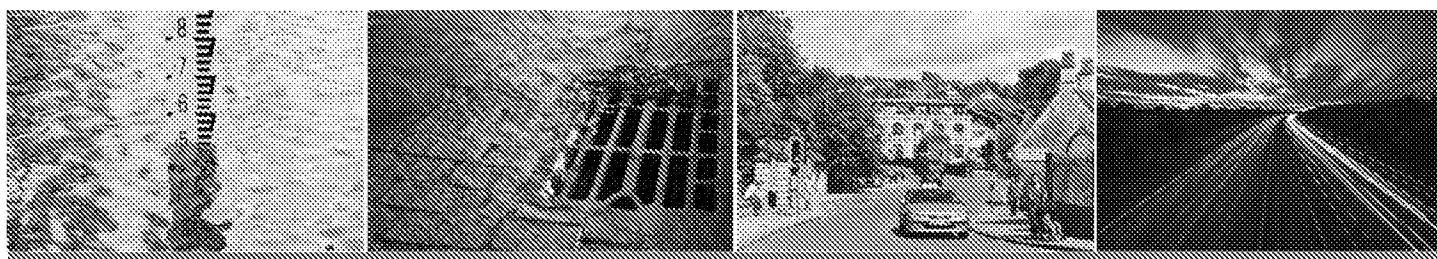
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30		TOPSOIL: Dark brown slightly sandy, silty CLAY. Firm to stiff brown silty CLAY.	1	
					1.90		Stiff brown sandy silty CLAY with occasional fine to coarse angular and sub-angular flint gravel.	2	
					2.40		Brown/orange silty SAND.		
					2.90		Brown/orange very silty SAND/very sandy SILT with occasional fine to coarse, angular and sub-angular flint gravel.	3	
					4.00		Structureless CHALK composed of slightly clayey sandy angular and sub-angular GRAVEL. Clasts are weak, medium density cream/white. Matrix is cream. Frequent rinded flint nodules. (Grade Dc)	4	
					5.00		End of Borehole at 5.000m	5	
								6	
								7	
								8	
								9	

Remarks No groundwater encountered.							
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								Borehole No. BH103 Sheet 1 of 1	
Project Name North End Road					Project No. 44005A		Co-ords:		Hole Type WS
Location: Yapton							Level:		Scale 1:50
Client: Redrow Homes							Dates: 28/10/2019		Logged By RAN

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.05		TOPSOIL: Dark brown slightly sandy, silty CLAY. Firm brown silty CLAY.		
					1.10		Stiff below 0.6 m.	1	
					1.60		Stiff brown/orange silty sandy CLAY.		
					2.60		Firm to stiff brown/grey silty CLAY.	2	
					3.20		Brown and white silty gravelly CLAY. Gravel is fine to coarse, angular and sub-angular chalk.	3	
					5.00		Structureless CHALK composed of cream/pale yellow firm very gravelly silty CLAY. Gravel is weak, low and medium density cream/white and angular to sub-angular. (Grade Dm)	4	
							End of Borehole at 5.000m	5	
								6	
								7	
								8	
								9	

Remarks No groundwater encountered.	
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Civil Engineering - Transport Planning - Flood Risk

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