RSK	Report No:881964	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Fryatts Way, Bexhill

Photo No.	**Date:**
19	13/11/19

Direction Photo Taken:

NW

Description:

The ordinary watercourse was observed to be fast flowing. The sides of the channel were steep and vegetated with a narrow path for water to flow through. The water appears to be undercutting the channel.

Photo No.	**Date:**
20	13/11/19

Direction Photo Taken:

N

Description:

The ordinary watercourse was observed to be fast flowing. The sides of the channel are shallower that in photo 19, but still vegetated. The channel was wider by 0.5m that in photo 19.

RSK	Report No:881964	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Fryatts Way, Bexhill

Photo No.	**Date:**
21	13/11/19

Direction Photo Taken:

W

Description:

The ordinary watercourse runs along the W boarder of the site with a golf course located on the other side of the channel. The channel was observed to be approximately 1m higher on the opposite bank than on the site.

Photo No.	**Date:**
22a	13/11/19

Direction Photo Taken:

N/A

Description:

Standing water present with some puddles appearing to have an oily sheen. Potential contamination.

RSK	Report No:881964	PHOTOGRAPHIC LOG

Client name:
Gladman Developments Ltd.

Site Location:
Fryatts Way, Bexhill

Photo No.	**Date:**
22b	13/11/19

Direction Photo Taken:

N/A

Description:

Standing water present. This section was the boggiest part of the site.

Photo No.	**Date:**
23a	13/11/19

Direction Photo Taken:

E

Description:

Field drain present along the middle W field boundary. Channel contained water flowing slowly.

RSK	Report No:881964	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Fryatts Way, Bexhill

Photo No.	**Date:**
23b	13/11/19

Direction Photo Taken:

W

Description:

Culverted field ditch beneath gate entrance. Plastic pipe had a diameter of approximately 300m.

Photo No.	**Date:**
23c	13/11/19

Direction Photo Taken:

W

Description:

Culverted field ditch beneath gate entrance. Plastic pipe had a diameter of approximately 300m.

RSK	Report No:881964	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Fryatts Way, Bexhill

Photo No.	**Date:**
24a	13/11/19

Direction Photo Taken:

E

Description:

Field ditch observed in the right-hand side of the photo. The ground had been churned up and was very wet and muddy with standing water present. Field drain was vegetated with grasses and brambles.

Photo No.	**Date:**
24b	13/11/19

Direction Photo Taken:

W

Description:

Field drain was vegetated with grasses and brambles.

RSK	Report No:881964	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Fryatts Way, Bexhill

Photo No.	**Date:**
25	13/11/19

Direction Photo Taken:

W

Description:

Topography of the site appeared variable with a general slope downwards to the W. There also appeared to be a slight valley with the centre of the field being lower than either edge.

Photo No.	**Date:**
26	13/11/19

Direction Photo Taken:

SW

Description:

Field ditch culverted for a short stretch by a plastic pipe with a diameter of approximately 400-450mm. Vegetation was present in the channel but the entrance to the pipe was clear. This photo displays the inlet pipe.

RSK	Report No:881964	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Fryatts Way, Bexhill

Photo No.	**Date:**
27	13/11/19

Direction Photo Taken:

SE

Description:

The field ditch was present in the right-hand side of the photo at the boundary of the field. The ground sloped downwards towards the ordinary watercourse at the W of the site. Standing water was present.

Photo No.	**Date:**
28	13/11/19

Direction Photo Taken:

SE

Description:

Field ditch culverted for a short stretch by a plastic pipe with a diameter of approximately 400-450mm. Vegetation was present in the channel but the entrance to the pipe was clear. This photo displays the outlet pipe.

RSK	Report No:881964	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Fryatts Way, Bexhill

Photo No.	**Date:**
29	13/11/19

Direction Photo Taken:

E

Description:

Topography of the site was variable with a general slope downwards to the W. There also appeared to be a slight valley with the centre of the field being lower that either edge. The 'valley' labelled in the photo with an arrow

Photo No.	**Date:**
30	13/11/19

Direction Photo Taken:

E

Description:

A shallow field drain was present to the N boundary of the field as shown in the photo. The channel contained standing water and vegetation debris.

RSK	Report No:881964	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Fryatts Way, Bexhill

Photo No.	**Date:**
31	13/11/19

Direction Photo Taken:

E

Description:

The ground sloped downwards towards the ordinary watercourse located at the W boundary of the site. There was also a slight downwards slope to the N of the site.

Photo No.	**Date:**
32	13/11/19

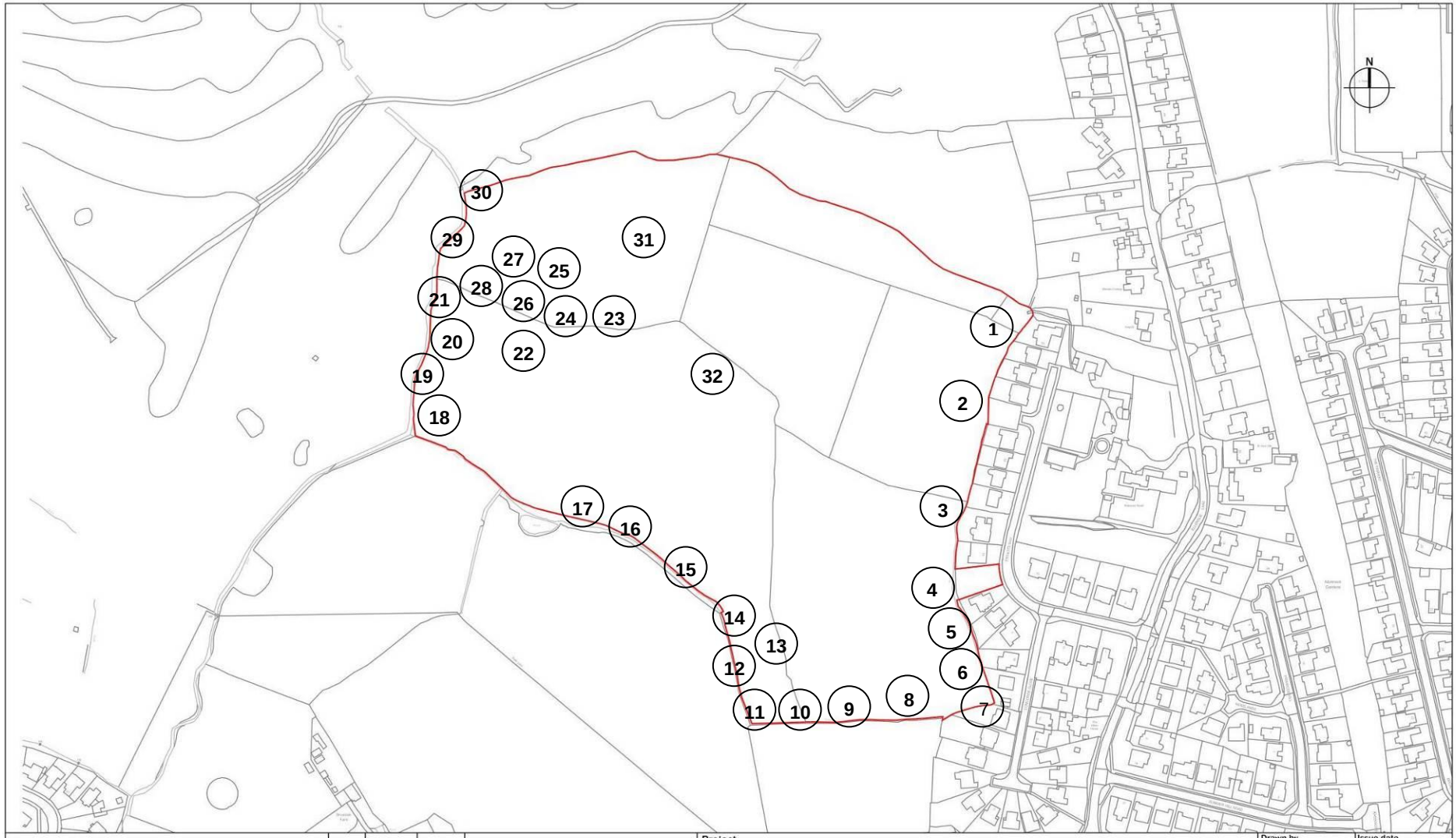
Direction Photo Taken:

W

Description:

The ground sloped downwards to the S of the site and a small ditch was present at the field boundary. No water was present in the ditch.

PHOTOGRAPH LOCATION PLAN



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Rev	Date	By	Revision notes
*	*	*	*

Status: INFORMATION

Project: BEXHILL, FRYATTS WAY

Title: LOCATION PLAN

Drawn by: SR	Issue date: 09.10.19
Title checked by: CHECKED BY	Title checked date: CHECKED_DATE
Highways checked by: CHECKED BY	Highways checked date: CHECKED_DATE
Topo checked by: CHECKED BY	Topo checked date: CHECKED_DATE

Scale(s): 1:2500 @ A3

Drawing No: 101

APPENDIX C
TOPOGRAPHIC SURVEY

N

NOTES

THIS SURVEY IS ORIENTATED TO ORDNANCE SURVEY GRID NORTH. THE SURVEY IS TO A PLANE GRID. HORIZONTAL MEASUREMENTS TAKEN FROM THIS SURVEY WILL BE GROUND DISTANCES.

SITE CENTRE: E 572347, N 108826

LOCAL SCALE FACTOR: 0.9999661

ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM GENERATED BY ACTIVE GPS NETWORK.

DRAINAGE:-

NO ALLOWANCE HAS BEEN MADE FOR SUB SURFACE ACCESS TO MANHOLES OR DRAINAGE SYSTEMS. ALL DRAINAGE RUNS ARE APPROXIMATE AND ASSUMED FROM THE SURFACE AND THUS WILL ONLY BE APPROXIMATE. ANY FLOW TYPES (FOUL WATER, SURFACE WATER OR COMBINED) ARE ASSUMED AND THEREFORE REQUIRE VERIFICATION.

ROAD MARKINGS:-

ROAD MARKINGS DISPLAYED ARE SYMBOLIC. LENGTH, SPACING AND THICKNESS ETC ARE INDICATIVE ONLY.

LEGEND

- 3629 — SPOT LEVEL
- SURVEY STATION
- SAPLING
- BUSH/ES/SHRUB
- TREE (INDICATIVE ONLY)
- HEDGE/AREA OF UNDERGROWTH
- 98.87 — CONTOUR
- GATE
- OVERHEAD CABLE
- FENCE
- 1 — PHOTOGRAPH LOCATION AND NUMBER

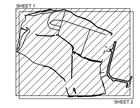
ABBREVIATIONS

AL	ARCH LEVEL	LB	LETTER BOX
AV	AIR VALVE	LP	LAMPOST
B	BOLLARD	MH	MANHOLE
BB	BUSH/SHRUB/CON	MKR	MARKER
BH	BOREHOLE	OHC	OVERHEAD CABLE
BL	BED LEVEL	OL	OPENING LEVEL
BS	BUS STOP	OSBM	OS BENCHMARK
CB	CATCH PIT	P	POST
CE	CLOSED BOARD FENCE	PR	POST AND RAIL FENCE
CL	CHAIN LINK FENCE	PW	POST AND WIRE FENCE
CATV	CABLE TELEVISION COVER	PEC	PEDESTRIAN CROSSING
CC	CONTROL CABIN	PM	PARKING METER
CH	CHIMNEY	PO	POWER POLE
Conc/p	CONCRETE PANEL FENCE	RWL	RETAINING WALL
CPY	CANOPY	SAP	SAPLING
CL	CROWN LEVEL	SEC	SECURITY CAMERA
Csty	CABLE STAY	SGY	STRIP GULLY
CP	CONCRETE POST	SL	SIGN POST LEVEL
CYR	CYCLE RACK	SP	SIGNPOST
DK	DROPPED KERB	Spg	SPRINGING LEVEL
DP	DOWNPIPE	SV	STOP VALVE
EIP	ELECTRIC INJECT POINT	Tac	TACTILE PAVING
ETC	ELECTRICITY CONNECTION COVER	TB	TELEGRAPH BOX
EP	ELECTRICITY SUPPLY POLE	TS17	TREE + NUMBER
ER	EARTH ROD	THL	THRESHOLD LEVEL
FH	FIRE HYDRANT	TL	TRAFFIC LIGHT
G	GULLY	ToP	TOP OF FENCE
GDP	GULLY AND DOWNPIPE	TOW	TOP OF WALL
GP	GATE POST	TP	TELEPHONE POLE
Gp	GAS PIPE	WM	WIRE MESH FENCE
IC	INSPECTION	WF	WOODEN RAIL FENCE
IC	INSPECTION CHAMBER	WLV	WATER LEVEL
IL	INVERT LEVEL	WM	WATER METER
IR	IRON RAILING FENCE	WO	WASH OUT
KO	KERB OUTLET		

STATION CO-ORDINATES

STATION	EASTING	NORTHING	LEVEL	DESCRIPTION
STN53	572553.57	108693.24	29.34	Survey Nail
STN54	572588.96	108665.83	30.20	Survey Nail
STN55	572581.65	108797.13	37.91	Survey Nail
STN56	572652.79	108661.41	32.62	Survey Nail
STN57	572573.80	108788.31	37.80	Survey Nail

PLOT LOCATIONS



TREE SCHEDULE

No.	DIAM.	SPREAD Ø	HEIGHT
TE/1	0.85	18	16
TE/2	0.50	14	16
TE/3	0.50	14	16
TE/4	0.40	14	16
TE/5	0.90	14	16
TE/6	0.50	14	16
TE/7	0.50	14	16
TE/8	1.00	14	16
TE/9	0.55	14	16
TE/10	0.40	10	10
TE/11	0.60	16	16
TE/12	0.60	16	16
TE/13	0.45	16	16
TE/14	1.00	18	16
TE/15	1.00	18	16
TE/16	0.80	18	16
TE/17	1.00	18	16
TE/18	1.20	18	16
TE/19	1.00	20	16
TE/20	0.35	10	14
TE/21	0.70	16	14
TE/22	0.80	16	14
TE/23	0.80	16	14
TE/24	0.80	20	16
TE/25	0.60	14	14
TE/26	0.60	14	14
TE/27	0.90	22	18
TE/28	0.80	22	18
TE/29	0.80	22	18
TE/30	0.80	22	18
TE/31	0.80	22	18
TE/32	0.80	22	18
TE/33	1.00	22	18
TE/34	0.70	16	16
TE/35	0.50	12	12
TE/36	0.50	12	12
TE/37	1.20	18	20
TE/38	1.00	14	20
TE/39	0.80	16	18
TE/40	0.40	10	10
TE/41	1.00	14	14
TE/42	0.55	8	8
TE/43	1.40	20	33
TE/44	0.20	8	4
TE/45	1.90	30	16
TE/46	0.60	12	10
TE/47	0.80	16	16
TE/48	0.65	16	16
TE/49	1.20	22	18
TE/50	1.80	22	18
TE/51	0.70	14	12
TE/52	0.50	6	6
TE/53	0.50	6	6
TE/54	0.50	6	6
TE/55	0.50	6	6
TE/56	2.00	20	18
TE/57	1.00	20	18
TE/58	0.70	12	12
TE/59	0.70	12	12
TE/60	0.65	16	14
TE/61	0.40	8	14
TE/62	0.70	16	14
TE/63	0.80	16	14
TE/64	0.50	12	14
TE/65	0.70	16	14
TE/66	0.70	14	14
TE/67	0.70	14	10
TE/68	0.85	8	10
TE/69	1.10	22	20
TE/70	1.60	20	20
TE/71	0.80	20	18
TE/72	0.85	14	14
TE/73	0.90	18	18
TE/74	0.90	18	18
TE/75	1.10	22	20
TE/76	1.80	10	33
TE/77	1.80	20	14
TE/78	1.00	12	20
TE/79	1.00	12	20
TE/80	1.20	12	33
TE/81	1.00	18	16
TE/82	0.50	12	12
TE/83	0.50	12	12
TE/84	1.00	18	16
TE/85	1.00	18	16
TE/86	1.00	18	16
TE/87	0.80	8	8
TE/88	1.00	20	18
TE/89	1.00	20	18
TE/90	0.80	16	16
TE/91	1.80	18	16
TE/92	1.00	18	16

TREE DIAMETER MEASURED APPROXIMATELY 1.5M ABOVE GROUND LEVEL. TREE SPREADS ARE SYMBOLIC ONLY AND ARE REPRESENTATIVE OF THE GENERALISED CANOPY SIZE. TREE BOLE MAY NOT SIT CENTRALLY TO THE CANOPY. TREE HEIGHT ESTIMATED FROM GROUND LEVEL.

Rev	Date	Revision notes	By
*	*	*	*

DO NOT SCALE

Status

INFORMATION

Project

Fryatts Way, Bexhill.

Title

TOPOGRAPHICAL SURVEY AS OF 11.11.19 SHEET 1 OF 2

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Drawn By	Publish Date	Scale(s)	Sheet Size
JH/JW	15.11.19	1:500	A0

Project no.	Drawing no.	Revision
2019-102	Topo_01_2D	0

APPENDIX D
ENVIRONMENT AGENCY CORRESPONDENCE

creating a better place
for people and wildlife

Environment Agency

Kathryn Olive,
RSK
14 Beecham Court,
Pemberton Business Park,
Wigan,
WN3 6PR,
UK

Our ref: SSD150403
Date: 18/11/2019

Dear Ms Olive,

Risk of flooding from rivers and the sea and flood history information for Fryatts Way, Bexhill

Thank you for your enquiry dated 14 November 2019 regarding the address above.

The Environment Agency's information on the risk of flooding from rivers, the sea and surface water in the area relating to this address is shown below.

The attached 'Flooding information sheet – your questions answered', which we have produced jointly with the Association of British Insurers and Flood Re, gives general information on flood risk from rivers / the sea / surface water and insurance.

The likelihood of flooding from rivers and the sea in this area (taking into account defences)

1. Our most recent National Flood Risk Assessment (carried out in 2018), which takes account of the location, type and condition of flood defences, classified the flood risk for this site, predominantly as **Very Low** - less than 0.1% (1 in 1,000) in any given year. *Note: The western extent of the site is located within Flood Zone 3*.

2. We hold no records of flooding from rivers and the sea in this area.

Please note our records are not comprehensive and may not include all events, you can contact Rother District Council for a more comprehensive flood history check and to enquire whether they hold any relevant information regarding this site.

The likelihood of flooding from surface water in this area

3. This address is predominantly in an area at **very low** risk of surface water flooding; areas within the site are at **high risk** of surface water flooding. Please see the attached map for further clarification. For more information about how surface water flooding is managed in your local area please contact East Sussex County Council.

Note - This information relates to the area the above named properties are in, and is not specific to any property itself. Please see the attached fact sheet for further explanation.

Note – For more information on flooding from other sources you should contact your Lead Local Flood Authority, East Sussex County Council.

The site is located in an area that could be flooded from surface water, rivers and the sea. The scale of the risk will vary according to how far the property is away from the source of flooding , the height of the property above the ground, and as a result of other factors such as any flood defences in the area. We do not hold records on height of property above the ground but, where it is available, we can provide information on our assessment of the flood risk from rivers and the sea in your area and on any flood defences.

Water causing flooding can come from different places, for example from rivers or the sea; surface water (i.e. rainwater flowing over or accumulating on the ground before it is able to enter rivers or the drainage system); overflowing or backing up of sewer or drainage systems which have been overwhelmed or from groundwater rising up from underground aquifers.

Insurers choose whether they want to use Environment Agency data to inform their decision making. If they use it, they do so alongside other relevant information, including any that the customer may be able to provide. Insurers will then make an assessment as to whether they can provide insurance cover and under what terms.

Use of information provided

Please note:

- It is not possible to say for certain what the flood risk is but we use the best information available to provide an indication so that people and insurers can make informed choices about living with or managing the risks. The information we supply does **not** provide an indicator of flood risk at **an individual property / site level**.
- As our information relates to an area rather than a specific property, not all properties within that area (e.g. a street or a postcode) will necessarily be at the same risk of flooding. This might be the case if the property is on higher land or the floor levels are high.
- Our flood risk/likelihood information provided is for sites in or near an area at risk of flooding from the sea, rivers and surface water and does not cover other sources of flooding such as from local drains. However our records on historic flooding can include flooding from groundwater.
- We log historic flooding where we have adequate records and do not have a record of all past flooding. If an area of land is shown outside the extent of recorded flooding it

doesn't mean it has never flooded, simply that we don't hold a record of the area of land being flooded
- Any information provided in respect of proposed improvements to flood defences or natural river channels should be considered as general information for the area in which your property/site is located and is not specific to individual properties/sites.

Attached is a copy of the Open Government Licence which sets out terms and conditions associated with use of this data.

You may also wish to contact your local authority, **East Sussex County Council** to ask about surface water flooding or if they have other relevant local flood information.

I hope that we have correctly interpreted your request.

We respond to requests for recorded information that we hold under the Freedom of Information Act 2000 and the associated Environmental Information Regulations 2004. If you are not satisfied with our response to your request for information you can contact us within 2 calendar months to ask for our decision to be reviewed.

Yours sincerely

Oli Haydon
Flood and Coastal Risk Management Officer
E-mail: PSOEastSussex@Environment-Agency.gov.uk

enc.
Open Government Licence
Flooding Information Sheet – Your questions answered

APPENDIX E
EAST SUSSEX COUNCIL CORRESPNDENCE

14/11/2019

Drainage Report

Site name: Fryatts Way, Bexhill-on-Sea, TN39 4LW

ESCC Reference: SUD/PRE/PC/RR/19/004

Flood Risk

Flood Risk	Is any part of the site at risk?	Where to obtain additional information
Fluvial/Coastal	No	Environment Agency
Surface water	Yes	Environment Agency
Groundwater	Yes	British Geological Survey

The map below shows the flood incidents recorded in our database in the vicinity of the development site.

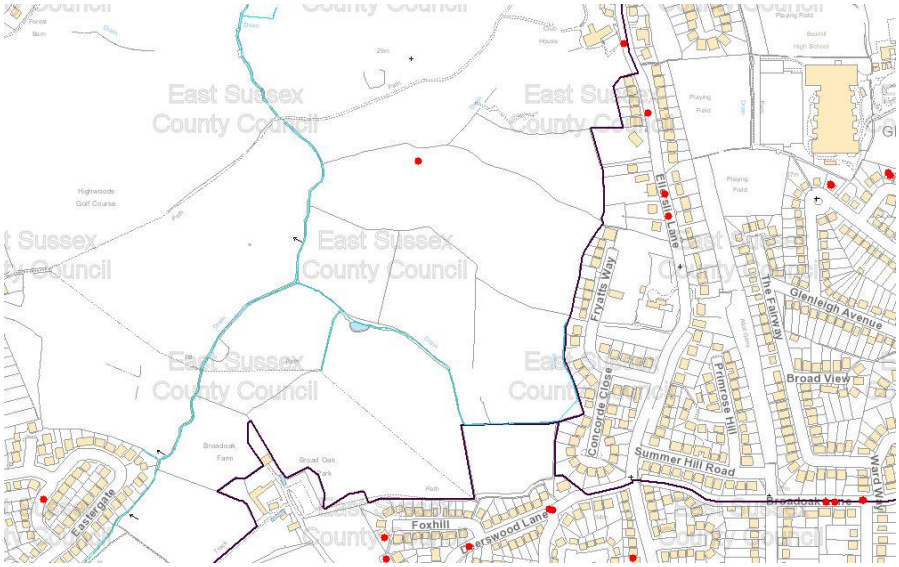


Figure 1: Recorded Flood Incidents

The table below provides details of the recorded flood incidents within the vicinity of the site.

Date	Source of flooding	Description
24/09/1999	Combined	Internal and curtilage flooding. Unusable sanitation
17/10/2007	Foul	Curtilage and highways flooding
30/01/2008	Unknown	Unknown
30/01/2008	Unknown	Unknown
04/03/2010	Foul	Highways flooding
16/03/2010	Surface Water - Drainage	Blocked drains outsider her property
22/12/2012	Unknown	Unknown
29/08/2013	Surface Water - Drainage	drain o/s number 4 Badgers Mount, Bexhill overflowed and caused a mini lake down this road. Over the bank holiday with all the rain we had, the same has happened again, customer said SEW came out yesterday
15/11/2013	Surface Water - Drainage	Broadoak Lane - Bexhill - Before junction with Warwick Road - Drainage problems
20/01/2014	Surface Water	The areas outside 25 and 27 Broad Oak Lane are flooding very easily. Mud in water
20/01/2014	Surface Water	Areas outside 25 and 27 Broad Oak Lane are flooding very easily from the road
22/01/2014	Unknown	Water is seeping out of the road (not through manhole) on the right hand side of the road (if travelling north) outside number 36 Ellerslie Lane.
11/02/2014	Unknown	Broad Oak Lane - Bexhill
03/03/2014	Unknown	Outside No. 29 Broad Oak Lane, Bexhill.
18/08/2014	Surface water- Drainage	Road flooded after rainfall, blocked drains
29/08/2014	Unknown	CMH - Ellerslie Lane, Bexhill
11/02/2015	Surface Water - Drainage	Open earth drainage gully often becomes blocked with resulting discharges on to the main road, even with moderate rainfall
02/05/2018	Surface Water - Drainage	Customer called to inform that the drain on the path outside her property, 34 Broadoak Lane, Bexhill-on-Sea, TN39 4HJ, is blocked and causing flooding.

02/05/2018	Surface Water - Drainage	Surface water cover appears to be blocked, water is currently pooling around cover. Met customer on site who said when heavy rainfall occurs, water floods front of property.

Please note that our records only provide a snapshot of the flood history in the area, as the majority of incidents were compiled after the County Council was established as the Lead Local Flood Authority in 2010. Therefore, other risk management authorities, such as the Environment Agency, the Local Planning Authority and Southern Water may hold additional records.

The surface water management strategy should include information on how the potential impacts of local flood risk sources on the proposed drainage arrangements have been considered and mitigated where necessary. Local flood risk sources include surface water, groundwater, sewer and ordinary watercourse flood risk.

Surface Water Flood Risk

The Environment Agency's surface water flood mapping shows the predicted surface water flood risk at the development site, and the table below gives the corresponding maximum flood depth:

Table 1: Surface Water Flood Depths

Flood Event	Maximum Depth
3.33% AEP (1 in 30 year)	0.82
1% AEP (1 in 100 year)	0.96
0.1% AEP (1 in 1000 year)	1.32

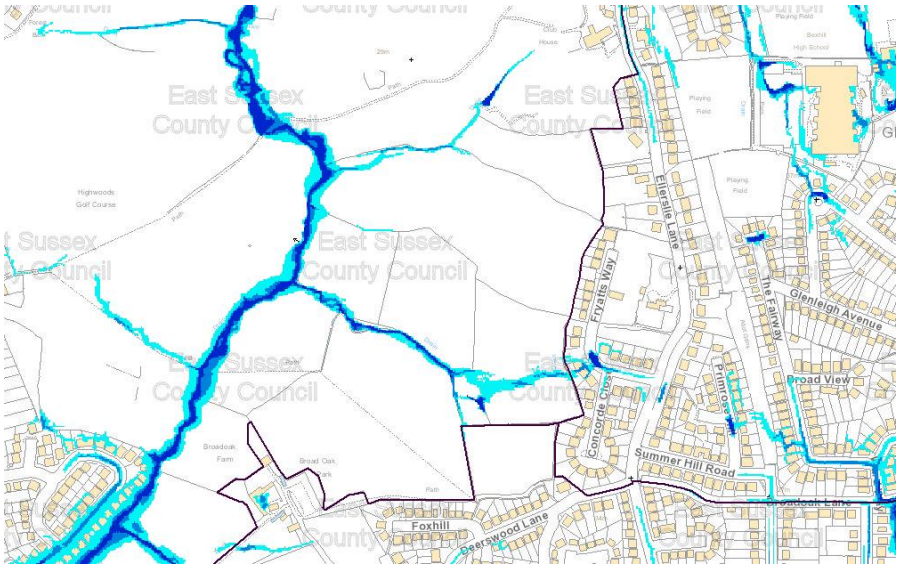
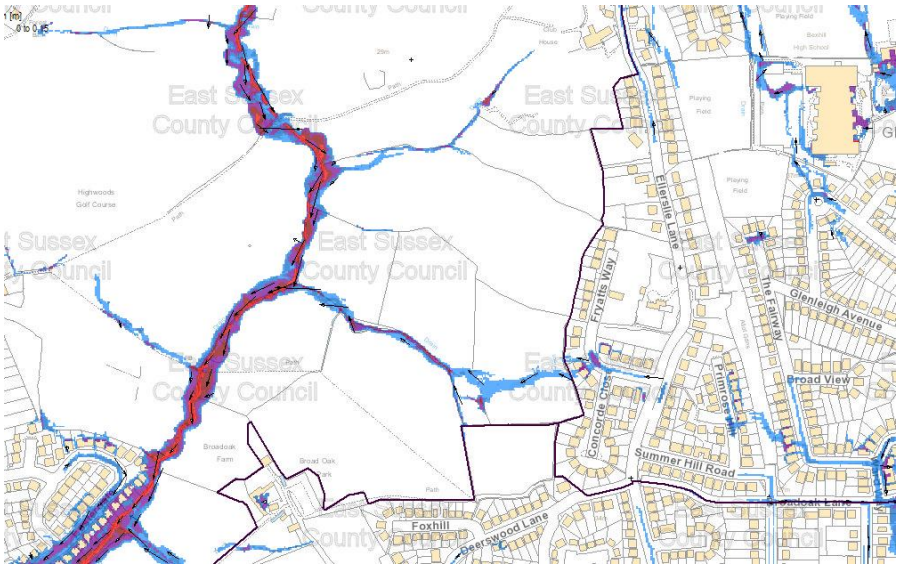


Figure 2: Surface Water Flood Risk

The map below shows predicted depths and flow direction of surface water for the 0.1% AEP (1 in 1000) event:



0.00 – 0.15m	0.15 – 0.30m	0.30 – 0.60m
0.60 - 0.90m	> 0.90 m	

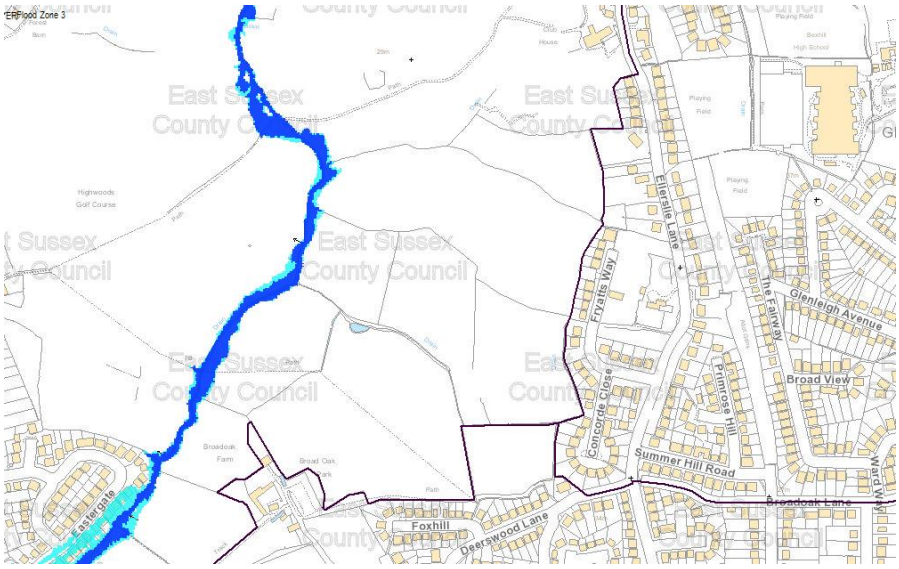
Figure 3: 0.1% AEP depth and flow direction

Further information can be viewed online on at the Environment Agency's pages on the GOV.UK website.

There are a number of flow paths that run along a large proportion of the site boundary. Some of these could be associated with water courses. Surface water flood risk should be considered when designing the site layout as to not increase this risk both on and off the site.

Fluvial and Coastal Flood Risk

The Environment Agency's mapping shows that there is a part in the Western side of the site which is in the vicinity of Flood Zone 2 and Flood Zone 3 and is therefore is potentially at high risk of flooding from fluvial sources.



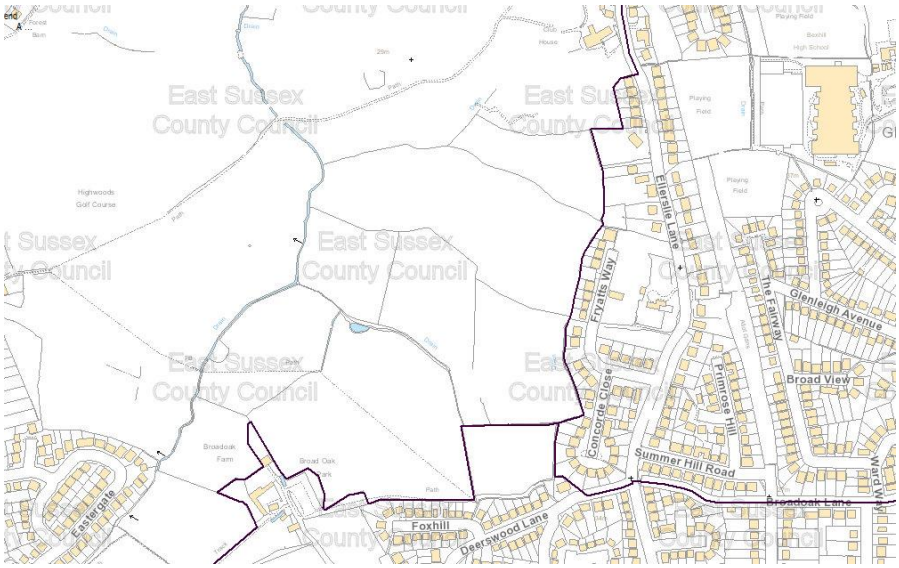
Flood Zone 3	Flood Zone 2

Figure 4: Fluvial and Coastal Flood Risk

Further information can be viewed online at the Environment Agency's pages on the GOV.UK website.

Groundwater Flood Risk

Mapping from the British Geological Survey shows that there is negligible risk of Groundwater flooding to the site.



Limited potential for groundwater flooding to occur	Potential for groundwater flooding of property situated below ground level	Potential for groundwater flooding to occur at surface

Figure 5: Groundwater Flood Risk

Drainage Considerations

The council has carried out county wide analysis to classify East Sussex into four areas of broad drainage characteristics or Drainage Risk Areas (DRA). These spatial groupings are intended to inform the preparation of drainage strategies with development proposals, so that appropriate SuDS techniques are implemented in the county.

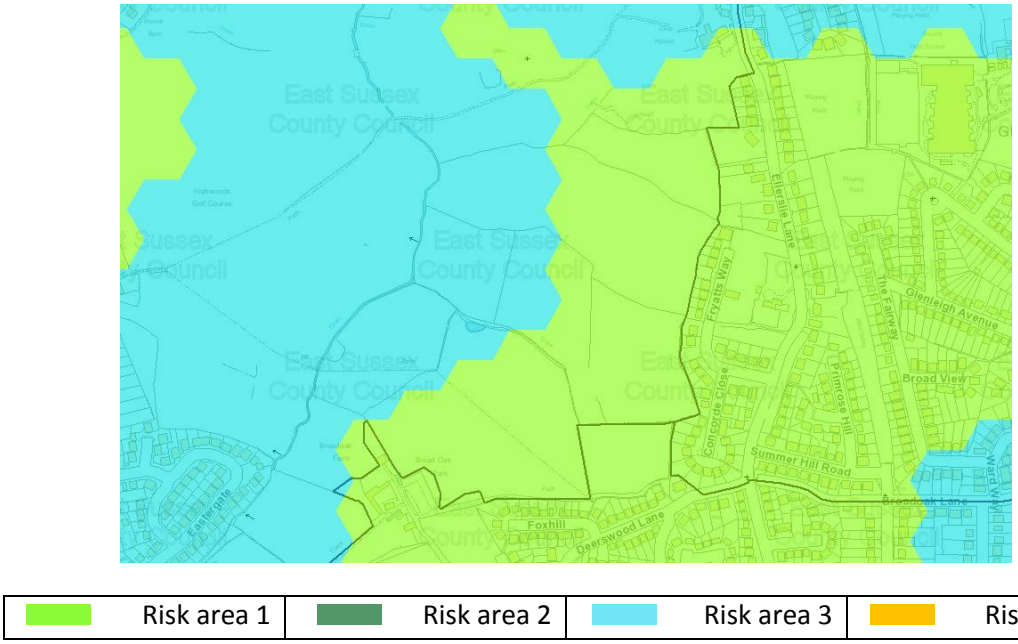


Figure 6: Drainage Risk areas

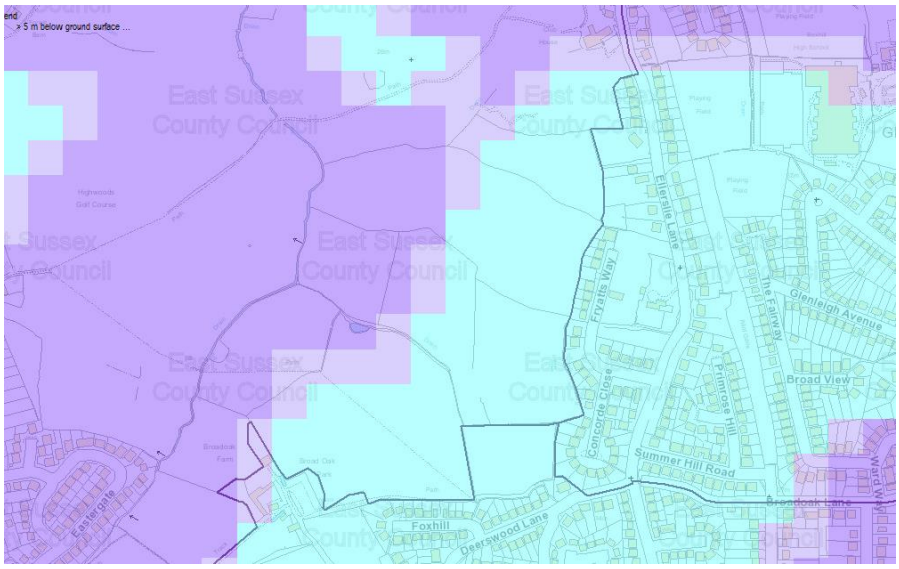
The site is shown to be within risk group 1 and 3. The site may also the contain aspects of other DRA categories.

The LLFA requirements for each DRA are provided in Table 2 below.

Table 2: Drainage Risk Area Guidance

DRA Number	Colour	Guidance
1		Improvements upon greenfield runoff rates should be discussed with LLFA
2		Infiltration is unlikely, ensure an outfall can be secured
3		Infiltration techniques are likely to be inappropriate
4		Robust evidence is required to show the applicability of infiltration on site

Figure 7 below outlines the estimated water table depth for the site, based on data from the British Geological Survey. The legend contains the British Geological Survey advice for each groundwater depth band.



	>5m below surface	Observations of seasonal variations in groundwater level recommended
	3m – 5m below surface	Determine seasonal variations in groundwater level
	<3m below surface	Determine seasonal variations in groundwater level

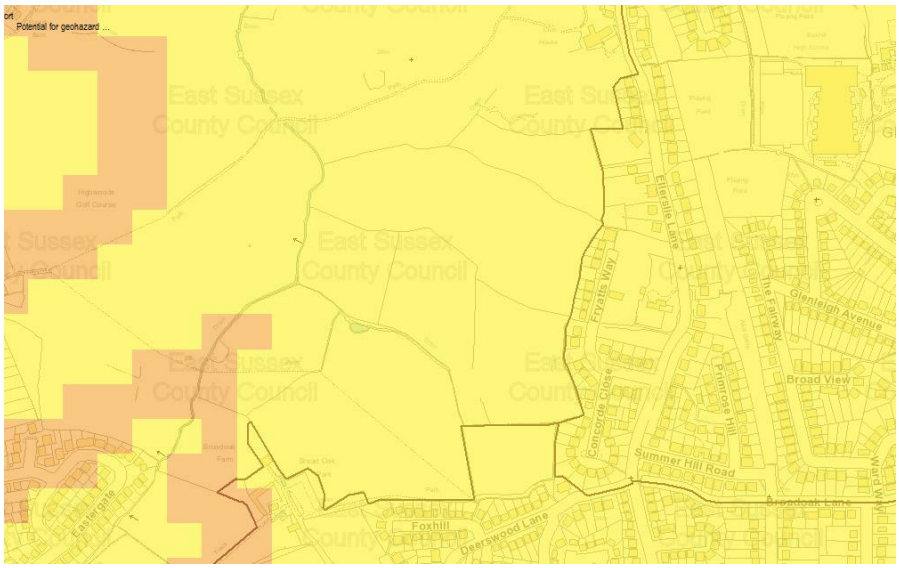
Figure 7: Depth to Groundwater

The map indicates that the water table is varies across the site with the Eastern side being greater then 5m below the surface and the Western side being less than 3m below the surface. Therefore any proposals to use infiltration techniques within the drainage design would require infiltration testing in accordance with BRE365 at locations and comparable depths to the proposed infiltration features.

Groundwater levels can also vary throughout the year. These variations should be determined with groundwater monitoring to be completed between autumn and spring. We would typically expect a 1m unsaturated zone between the base of the drainage structure and the highest recorded groundwater level.

Figure 8 below outlines the estimated ground stability for the site, based on data from the British Geological Survey. The legend contains the British Geological Survey advice for each ground stability band.

The BGS data indicates that there is potential for a Geohazard to occur. Therefore, any proposals to use infiltration should consider any effects it may have on ground stability.



	Potential for Geohazard	Before installing infiltration SuDS consider the potential for or consequences of infiltration or ground stability
	Significant potential for Geohazard	Only install infiltration SuDS if the potential for or consequences of infiltration are considered no to be considerate
	Very significant constraints are indicated	Only install infiltration SuDS if the potential for or consequences of infiltration are considered no to be considerate

Figure 8: Ground Stability

The information provided is guidance only. All development proposals must undertake the necessary site surveys to confirm the drainage constraints or opportunities. For further information on drainage strategy requirements, please refer to the ESCC Guide to Sustainable Drainage Systems in East Sussex and the Local Flood Risk Management Strategy. The 'surface water drainage checklist' available on our website lists the information we expect to be submitted in support of a planning application

Watercourses and Drainage Assets

Watercourses and drainage assets in the vicinity of the property are shown below.

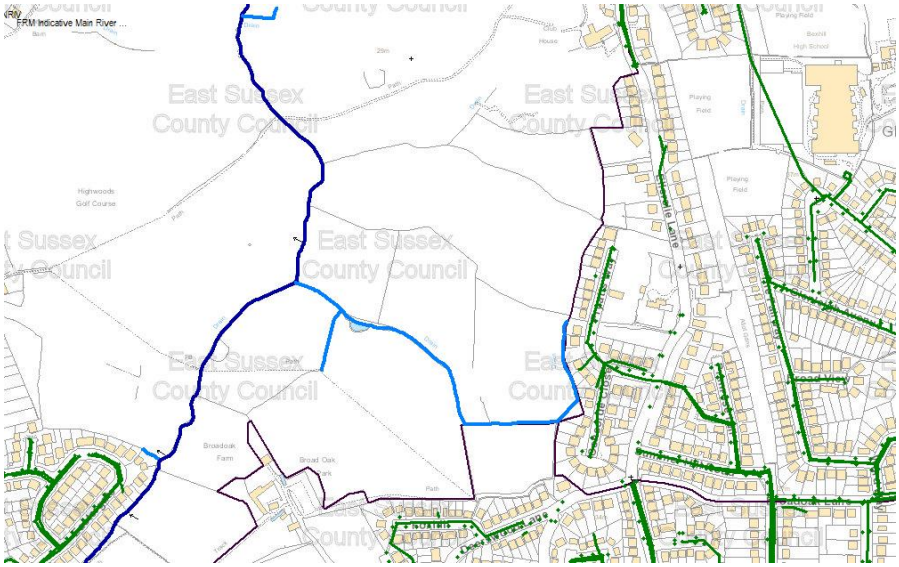


Figure 9: Watercourses

If any ordinary watercourses lie within the site boundary, any planned works to the watercourse map require a separate Ordinary Watercourse Consent from ESCC.

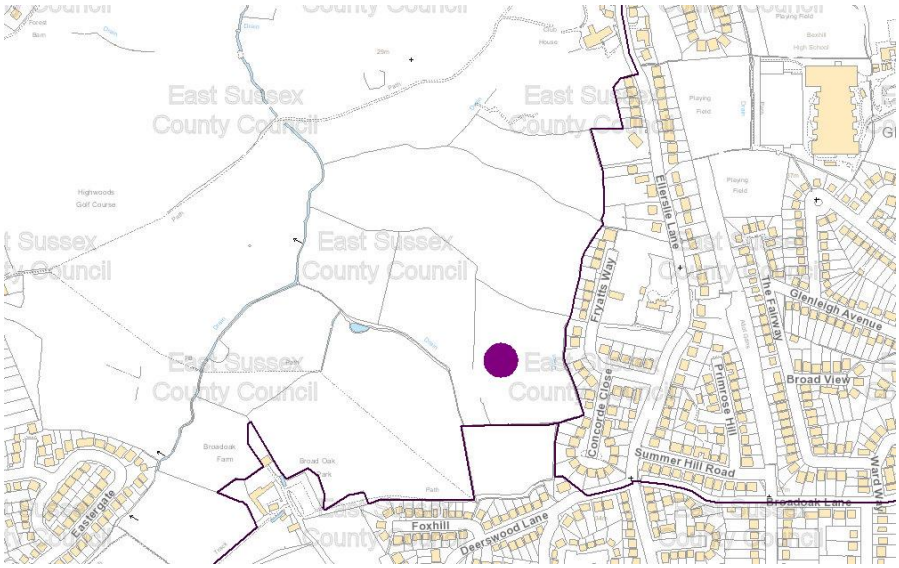
If a main river lies within the site boundary, any planned works to this watercourse may require an Environmental Permit (formerly Flood Defence Consent) from the Environment Agency. Contact the EA for enquiries at enquiries@environment-agency.co.uk

To connect into existing surface water and foul water systems, agreement must be obtained from Southern Water. Please refer to Southern Water for details on the capacity of the existing sewer system and applications for a new connection to the existing sewer system.

There is both an ordinary watercourse and a main river that run along the boundary of the site. For more information regarding the appropriate consents that would be required please contact the relevant authority depending on drainage design and the proposals to discharge surface water.

Water Quality and Landfill

Figure 10 below shows the ecological status of adjacent waterbodies, as defined by the Water Framework Directive and any historic landfill sites.



High Ecological Status	Good Ecological Status	Moderate Ecological Status
Poor Ecological Status	Bad Ecological Status	Historic Landfill Site

Figure 10: Water Quality and Landfill

If the site is adjacent to a sensitive waterbody, as defined by the Water Framework Directive, the Quality of water discharged from the site is likely to be a key consideration. Contact the EA for enquiries at enquiries@environment-agency.co.uk for further information.

If the site is in the vicinity of a historic landfill the EA may have additional comments on the associated water quality risks.

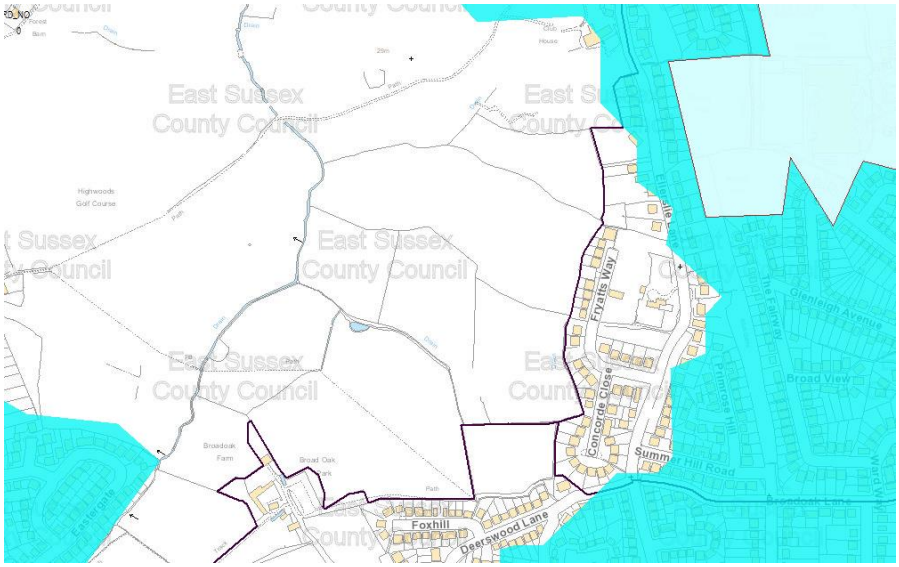
There is a small historic landfill site within the boundary of the development site.

Investigations

ESCC has undertaken a broad range of investigations into historic flooding and drainage issues including section 19 reports, Land Drainage Investigations and Surface Water Management Plans. Figure 11 below illustrates the location of these investigations.

Where a significant flood event has occurred and the responsibility for managing the risk is unclear; ESCC may undertake a formal investigation under Section 19 of the Flood and Water Management Act 2010. The published report aims to identify the responsible party and proposed response to the incident. To address less severe, localised flooding, ESCC may undertake a Land Drainage Investigation.

The Surface Water Management Plans (SWMP) in ESCC identified several risk 'hotspots'. If the site is adjacent to a hotspot, please refer to the full SWMP document for more information.



Land Drainage Investigation	SWMP Hotspot	Section 19 Investigation

Figure 11: Previous investigations

If the site is adjacent to any Section 19 Reports, Land Drainage Investigations or SWMP hotspots, please contact the Flood Risk Management Team at watercourse.consenting@eastsussex.co.uk

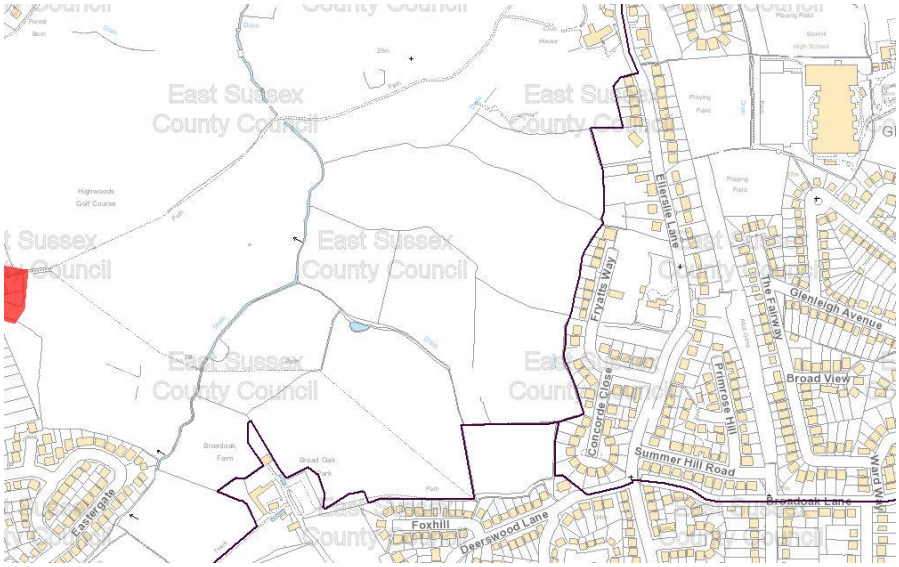
There are a number of large SWMP Hotspots within the vicinity of the site.

Other Information

The site lies with administrative area of the East Sussex County Council Internal Drainage Board. Additional requirements may need to be taken into consideration. Please contact the below relevant authority for further information.

Upper Medway Internal Drainage Board	enquiries@medwayidb.co.uk
Romney Marshes Area Internal Drainage Board	info@rmaidb@co.uk
Cuckmere and Pevensey Water Level Management Board	info@wlma.org.uk
East Sussex County Council LLFA	Watercourse.consenting@eastsussex.gov.uk

Figure 12 below shows any known archaeological sites adjacent to the site. If there is an adjacent site, it is highly likely that information on the location and extent of heritage assets will be required, as well as the archaeological potential of the area. It is recommended to investigate the level of information required by contacting East Sussex Historic Environment Record (HER) at country.HER@eastsussex.gov.uk



Archaeological Site

Figure 12: Archaeology

East Sussex contains area of international, national and local importance for biodiversity. The below Figure 13 illustrates the location of RAMSAR sites, Sites of Specific Scientific Interest (SSSI), Special Areas of Conservation (SAC) and Special Protection Areas (SPA).

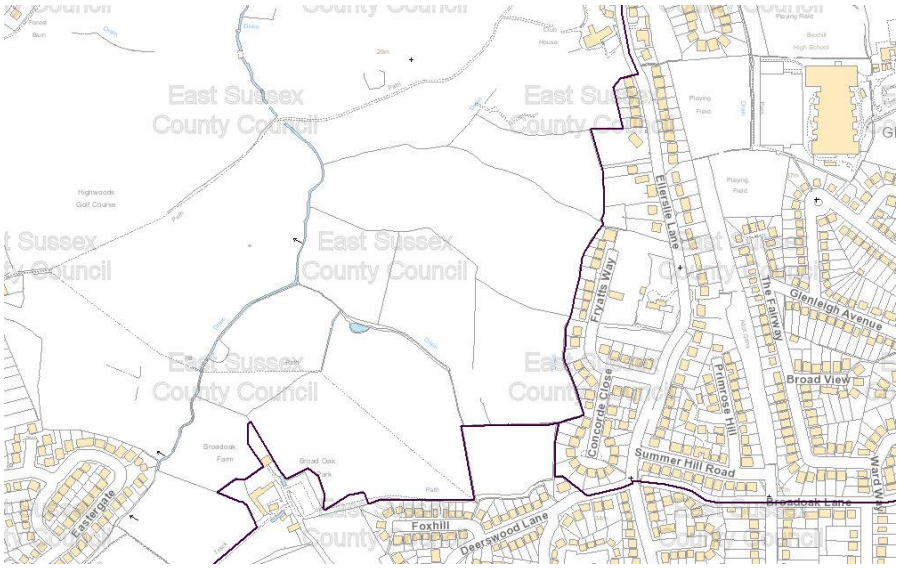


Figure 13: Biodiversity

ESCC policy states that the development should provide net gain in biodiversity where possible. Therefore Sustainable Drainage Systems (SuDS) should be designated as multifunctional features, which ensure that biodiversity can be compensated and/or enhanced.

Further information can be found in the Guide to Sustainable Drainage Systems in East Sussex.

Colin Whittingham

From: Su DS Consultations - Flood <Su.DS@eastsussex.gov.uk>
Sent: 09 December 2019 15:19
To: Colin Whittingham
Cc: Su DS Consultations - Flood
Subject: RE: Land at Fryatts Way, Bexhill

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Colin,

Provided that discharge rates are limited to pre-development (in this case greenfield runoff rates) the use of a complex flow control would be acceptable in principle, although this would also depend on your drainage design at the planning stage.

We would also encourage you to provide a betterment over greenfield runoff rates if possible.

Kind regards,
Peter

Peter Rook
Flood Strategy & Drainage officer
Flood Risk Management

01273 481720
eastsussex.gov.uk

East Sussex County Council

From: Colin Whittingham <CWhittingham@rsk.co.uk>
Sent: 09 December 2019 08:11
To: Su DS Consultations - Flood <Su.DS@eastsussex.gov.uk>
Subject: RE: Land at Fryatts Way, Bexhill

Josie

Many thanks for sending this over. I am also looking at the surface water discharge options for the site. I am seeking to replicate the existing discharge rates for the QBAR, 30 and 100 year events using a complex control to ensure that the off site discharge does not exceed the pre-development rates for these events. In principle, is this an acceptable approach to ESCC?

Colin Whittingham
Associate Director BSc (Hons) MSc MCIWEM C.WEM PIEMA

RSK
Land & Development Engineering
14, Beecham Court, Pemberton Business Park, Wigan, UK, WN3 6PR

Switchboard: +44 (0) 1942 493255
Mobile: +44 (0) 7917 425267

Fax: +44 (0) 1942 493171

http://www.rsk.co.uk

From: Su DS Consultations - Flood <Su.DS@eastsussex.gov.uk>
Sent: 14 November 2019 09:13
To: Kathryn Olive <KOlive@rsk.co.uk>
Cc: Su DS Consultations - Flood <Su.DS@eastsussex.gov.uk>
Subject: Land at Fryatts Way, Bexhill

Good Morning Kathryn,

Please find attached one of or standard drainage reports as requested for the land at Fryatts Way, Bexhill.

The report shows that there is an area of the site that is located within Flood Zone 2 and 3 and is therefore at potentially high risk to flooding from fluvial sources.

There are some significant surface water flow paths along the boundaries of the site which could be associated with watercourses. However it is imperative to ensure that the design of the site layout and levels, do not increase the surface water risk both on and off the site.

Any alterations or planned works to the watercourse would require the appropriate consents from the relevant authority. For the Main River, contact the Environment Agency and Ordinary Watercourse, East Sussex County Council LLFA.

I hope you find the report of use and if you have any other questions, please don't hesitate to contact us.

Kind Regards,
Josie

Josie Bush
Flood Risk Technician
Flood Risk Management

01273 335474
eastsussex.gov.uk

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APPENDIX F
SEWER RECORDS

Order received: 15 October 2019
Order completed: 21 October 2019

Drainage and water enquiry

Commercial

Order reference: LS/U1473957
Your reference: SF28281645000 LKS/Brexhill 2019-102

Search address:

Land at Fryatts Way
Bexhill On Sea
East Sussex
TN39 4LW

Ordered by:

Searchflow
42 Kings Hill Avenue
West Malling
Kent
ME19 4AJ

For enquiries regarding the information provided in this report, please contact the LandSearch team:

Tel: 0845 270 0212
0330 303 0276 (individual consumers)

Email: searches@southernwater.co.uk

Web: www.southernwater.co.uk

LandSearch
Southern Water Services
Southern House
Capstone Road
Chatham
Kent
ME5 7QA

COMMERCIALDW
DRAINAGE AND WATER ENQUIRY

Southern Water

What you need to know about...

Private sewer transfer

On 1 October 2011, ownership of private sewers and lateral drains changed in accordance with The Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011. The contents of this search may not reflect these changes.

For further information please visit our website: www.southernwater.co.uk/sewer-ownership-changes.

Records searched

The following records were searched in compiling this report: the Map of Public Sewers, the Map of Waterworks, water and sewerage records, the Register of Properties subject to Internal Foul Flooding, the Register of Properties subject to Poor Water Pressure and the Drinking Water Register. Should the property not fall entirely within Southern Water's region, a copy of the records held by the relevant water company was searched.

Competition in the non-household retail market

From April 2017 non-household customers in England can choose their retailer. 'Retail' refers to the way in which customers are billed for their water and sewerage as well as customer services including meter reading.

The 'wholesale' part of the water industry was not opened for competition in April 2017. This means Southern Water continues to look after the pipes and infrastructure for all its customers across Kent, Sussex, Hampshire and the Isle of Wight.

Moving

There can be a lot to do and remember when you're moving. Whether you are moving within our area, moving into our area or moving out of the area please let your retailer know.

Your order summary

	Maps	
1.1	Where relevant, please include a copy of an extract from the public sewer map.	Map provided
1.2	Where relevant, please include a copy of an extract from the map of waterworks.	Map provided
	Drainage	
2.1	Does foul water from the property drain to a public sewer?	No
2.2	Does surface water from the property drain to a public sewer?	No
2.3	Is a surface water drainage charge payable?	See answer
2.4	Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundaries of the property?	No
2.4.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?	No
2.5	Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?	No
2.5.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within 50 metres of any buildings within the property?	No
2.6	Are any sewers or lateral drains serving, or which are proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
2.7	Has any sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?	No
2.8	Is the building which is or forms part of the property at risk of internal flooding due to overloaded public sewers?	No
2.9	Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.	See answer
	Water	
3.1	Is the property connected to mains water supply?	No
3.2	Are there any water mains, resource mains or discharge pipes within the boundaries of the property?	No
3.3	Is any water main or service pipe serving, or which is proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
3.4	Is the property at risk of receiving low water pressure or flow?	No
3.5	What is the classification of the water supply for the property?	See answer
3.6	Is there a meter installed at this property?	See answer
	Charging	
4.1.1	Who is responsible for providing the sewerage services for the property?	Southern Water
4.1.2	Who is responsible for providing the water services for the property?	South East Water
4.2	Who bills the property for sewerage services?	See answer
4.3	Who bills the property for water services?	See answer
	Trade effluent information	
4.4	Is there a consent on this property to discharge trade effluent under Section 118 of the Water Industry Act (1991) into the public sewerage system?	No

Maps

Public sewer map

Q. 1.1: Where relevant, please include a copy of an extract from the public sewer map.

A.: A copy of an extract from the public sewer map is provided.

Guidance Notes:

The Water Industry Act 1991 defines public sewers as those which the Company has responsibility for. Other assets and rivers, watercourses, ponds, culverts or highway drains may be shown for information purpose only.

Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an “as constructed” record. It is recommended these details be checked with the developer.

Map of waterworks

Q. 1.2: Where relevant, please include a copy of an extract from the map of waterworks.

A.: A copy of an extract of the map of waterworks is provided.

Guidance Notes:

Assets other than vested water mains may be shown on the plan for information only.

The Company is not responsible for private supply pipes connecting the property to the public water main and does not hold details of these. These may pass through land outside of the control of the seller, or may be shared with adjacent properties. The buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.

If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Drainage

Foul water

Q. 2.1: Does foul water from the property drain to a public sewer?

A.: The Company's records indicate that foul water from the property does not drain to the public sewerage system.

Guidance Notes:

The Company is not responsible for private drains and sewers that connect the property to the public sewerage system and does not hold details of these.

The property owner will normally have sole responsibility for private drains serving the property and may have shared responsibility, with other users, if the property is served by a private sewer which also serves other properties. These may pass through land outside of the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.

The copy extract will show known public sewers in the vicinity of the property. It should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

If foul water does not drain to the public sewerage system the property may have private facilities in the form of a cesspit, septic tank or other type of treatment plant.

Surface water

Q. 2.2: Does surface water from the property drain to a public sewer?

A.: The Company's records indicate that surface water from the property does not drain to the public sewerage system. If the property was constructed after 6 April 2015 the surface water drainage may be served by a Sustainable Drainage System. Further information may be available from the developer.

Guidance Notes:

The Company is not responsible for private drains and sewers that connect the property to the public sewerage system and does not hold details of these.

The property owner will normally have sole responsibility for private drains serving the property and may have shared responsibility, with other users, if the property is served by a private sewer which also serves other properties. These may pass through land outside of the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.

The copy extract will show known public sewers in the vicinity of the property. It should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

In some cases company records do not distinguish between foul and surface water connections to the public sewerage system. If on inspection the buyer finds that the property is not connected for surface water drainage, the property may be eligible for a rebate of the surface water drainage charge. Details can be obtained from the Company.

If surface water does not drain to the public sewerage system the property may have private facilities in the form of a soakaway or private connection to a watercourse.

Surface water drainage charge

Q. 2.3: Is a surface water drainage charge payable?

A.: Records confirm that a surface water drainage charge is not applicable at this property. If the property was constructed after 6 April 2015 the surface water drainage may be served by a Sustainable Drainage System. Further information may be available from the developer.

Guidance Notes:

Where surface water from a property does not drain to the public sewerage system no surface water drainage charges are applicable.

If on inspection the buyer finds that the property is not connected for surface water drainage, the buyer should contact their retailer.

Public sewers within the boundary of the property

Q. 2.4: Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundaries of the property?

A.: The public sewer map indicates that there are no public sewers, disposal mains or lateral drains within the boundaries of the property. However, from 1 October 2011 there may be additional public sewers, disposal mains or lateral drains which are not recorded on the public sewer map but which may further prevent or restrict development of the property. It is therefore recommended that investigations are made into the drainage arrangements of the property as the owner may be liable for repairs to the drainage system.

Guidance Notes:

The approximate boundary of the property has been determined by reference to the Ordnance Survey record or the map supplied.

The presence of a public sewer within the boundary of the property may restrict further development within it.

Southern Water Services has a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of Southern Water Services or its contractors needing to enter the property to carry out work.

Please note if the property was constructed after 1 July 2011 any sewers and/or lateral drain within the boundary of the property are the responsibility of the householder.

Public pumping station within the boundary of the property

Q. 2.4.1: Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?

A.: The public sewer map included indicates that there is no public pumping station within the boundaries of the property. Any other ancillary apparatus is shown on the public sewer map and referenced on the legend.

Guidance Notes:

The approximate boundary of the property has been determined by reference to the Ordnance Survey record or the map supplied.

The presence of a pumping station within the boundary of the property may restrict further development within it.

Southern Water Services has a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of Southern Water Services or its contractors needing to enter the property to carry out work.

It should be noted that only private pumping stations installed before 1 July 2011 will be transferred into the ownership of Southern Water Services.

Public sewers near to the property

Q. 2.5: Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?

A.: The public sewer map indicates that there are no public sewers within 30.48 metres (100 feet) of a building within the property.

Guidance Notes:

From 1 October 2011 there may be additional lateral drains and/or public sewers which are not recorded on the public sewer map but are also within 30.48 metres (100 feet) of a building within the property.

The presence of a public sewer within 30.48 metres (100 feet) of a building within the property can result in the local authority requiring a property to be connected to the public sewer.

The measure is estimated from the Ordnance Survey record, between a building within the boundary of the property and the nearest public sewer.

Public pumping station near to the property

Q. 2.5.1: Does the public sewer map indicate any public pumping station or any other ancillary apparatus within 50 metres of any buildings within the property?

A.: The public sewer map included indicates that there is no public pumping station within 50 metres of any buildings within the property. Any other ancillary apparatus is shown on the public sewer map and referenced on the legend.

Guidance Notes:

The measure is estimated from the Ordnance Survey record, between a building within the boundary of the property and the nearest pumping station.

It should be noted that only private pumping stations installed before 1 July 2011 will be transferred into the ownership of Southern Water Services.

Public adoption of sewers and lateral drains

Q. 2.6: Are any sewers or lateral drains serving, or which are proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?

A.: Records indicate that the sewers serving the development, of which this property forms part, are not the subject of an application for adoption under Section 104 of the Water Industry Act 1991. Where the property is part of an established development it would not normally be subject to an adoption agreement under Section 104 of the Water Industry Act 1991.

Guidance Notes:

This enquiry is of interest to purchasers of new homes who will want to know whether or not the property will be linked to a public sewer.

Where the property is part of a very recent or ongoing development and the sewers are not the subject of an adoption application, buyers should consult with the developer to ascertain the extent of private drains and sewers for which they will hold maintenance and renewal liabilities.

Final adoption is subject to the developer complying with the terms of the adoption agreement under Section 104 of the Water Industry Act 1991.

Any sewers and/or lateral drains within the boundary of the property are not the subject of an adoption agreement and remain the responsibility of the householder. Adoptable sewers are normally those situated in the public highway.

Building over a public sewer, disposal main or drain

Q. 2.7: Has the sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?

A.: There are no records in relation to any approval or consultation about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain. However, the sewerage undertaker might not be aware of a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain.

Guidance Notes:

Buildings or extensions erected over a sewer in contravention of Building Control may have to be removed or altered.

From 1 October 2011 private sewers, disposal mains and lateral drains were transferred into public ownership and the sewerage undertaker may not have approved or been consulted about any plans to erect a building or extension on the property or in the vicinity of these.

Risk of flooding due to overloading public sewers

Q. 2.8: Is the building which is or forms part of the property at risk of internal flooding due to overloaded public sewers?

A.: The building is not recorded as being at risk of internal flooding due to overloaded public sewers. From 1 October 2011 private sewers, disposal mains and lateral drains were transferred into public ownership. It is therefore possible that a building may be at risk of internal flooding due to an overloaded public sewer which the sewerage undertaker is not aware of. For further information it is recommended that enquiries are made of the vendor.

Guidance Notes:

A sewer is “overloaded” when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.

“Internal flooding” from the public sewers is defined as flooding, which enters a building or passes below a suspended floor.

For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.

“At Risk” properties are defined as properties that have suffered or are likely to suffer internal flooding from the public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the sewerage undertaker’s reporting procedure.

Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included.

Buildings may be at risk of flooding but not identified where flooding incidents have not been reported to the sewerage undertaker.

Public sewers are defined as those for which the sewerage undertaker holds statutory responsibility under the Water Industry Act 1991.

It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the sewerage undertaker. This report excludes flooding from the private sewers and drains and the sewerage undertaker makes no comment upon this matter.

Sewage treatment works

Q. 2.9: Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.

A.: The nearest sewage treatment works is 1.99 kilometres North North West of the property. The name of the sewage treatment works is LUNSFORDS CROSS WTW, which is the responsibility of Southern Water Services, Southern House, Yeoman Road, Worthing, West Sussex, BN13 3NX.

Guidance Notes:

The nearest sewage treatment works will not always be the sewage treatment works serving the catchment within which the property is situated.

The sewerage undertaker's records were inspected to determine the nearest sewage treatment works.

It should be noted that there may be a private sewage treatment works closer than the one detailed above that have not been identified.

Water

Connection to mains water supply

Q. 3.1: Is the property connected to mains water supply?

A.: Records indicate that the property is not connected to mains water supply and water is therefore likely to be provided by virtue of a private supply.

Guidance Notes:

The situation should be checked with the current owner of the property.

Details of private supplies are not kept by the water undertaker.

Water mains, resource mains or discharge pipes

Q. 3.2: Are there any water mains, resource mains or discharge pipes within the boundaries of the property?

A.: The map of waterworks is provided by South East Water whose records do not indicate any water mains, resource mains or discharge pipes within the boundaries of the property.

Guidance Notes:

The boundary of the property has been determined by reference to the Ordnance Survey record or the map supplied.

The presence of a public water main within the boundary of the property may restrict further development within it.

Water undertakers have a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of the water undertaker or its contractors needing to enter the property to carry out work.

Adoption of water mains and services pipes

Q. 3.3: Is any water main or service pipe serving, or which is proposed to serve theproperty, the subject of an existing adoption agreement or an application for such an agreement?

A.: Records confirm that water mains or service pipes serving the property are not the subject of an existing adoption agreement or an application for such an agreement.

Guidance Notes:

This enquiry is of interest to purchasers of new homes who will want to know whether or not the property will be linked to the mains water supply.

Risk of low water pressure or flow

Q. 3.4: Is the property at risk of receiving low water pressure orflow?

A.: Records confirm that the property is not recorded by the water undertaker as being at risk of receiving low water pressure or flow.

Guidance Notes:

“Low water pressure” means water pressure below the regulatory reference level which is the minimum pressure when demand on the system is not abnormal.

The reference level of service is a flow of 9 litres/minute at a pressure of 10 metres head on the customer’s side of the main stop tap (mst). The reference level of service must be applied on the customer’s side of a meter or any other company fittings that are on the customer’s side of the main stop tap.

The reference level applies to a single property. Where more than one property is served by a common service pipe, the flow assumed in the reference level must be appropriately increased to take account of the total number of properties served.

For two properties, a flow of 18 litres/minute at a pressure of 10 metres head on the customers side of the mst is appropriate. For three or more properties the appropriate flow should be calculated from the standard loadings provided in BS6700 or Institute of Plumbing handbook.

Water companies include properties receiving pressure below the reference level, provided that allowable exclusions do not apply (i.e. events which can cause pressure to temporarily fall below the reference level). Refer to list below:

Abnormal demand: This exclusion is intended to cover abnormal peaks in demand and not the daily, weekly or monthly peaks in demand which are normally expected. Companies exclude properties which are affected by low pressure only on those days with the highest peak demands. During the year companies may exclude, for each property, up to five days of low pressure caused by peak demand.

Planned maintenance: Companies exclude low pressures caused by planned maintenance. It is not intended that companies identify the number of properties affected in each instance. However, companies must maintain sufficiently accurate records to verify that low pressure incidents that are excluded because of planned maintenance are actually caused by maintenance.

One-off incidents: This exclusion covers a number of causes of low pressure; mains bursts; failures of company equipment (such as PRVs or booster pumps); firefighting; and action by a third party. However, if problems of this type affect a property frequently, they cannot be classed as one-off events and further investigation will be required before they can be excluded.

Low pressure incidents of short duration: Properties affected by low pressures which only occur for a short period, and for which there is evidence that incidents of a longer duration would not occur during the course of the year, may be excluded.

Water hardness

Q. 3.5: What is the classification of the water supply for the property?

A.: The water supplied to the property has an average water hardness of 92 mg/l calcium carbonate which is defined as "Moderately soft" by South East Water.

Guidance Notes:

The hardness of water depends on the amount of calcium in it – the more it contains, the harder the water is.

There is no UK or European standard set for the hardness of drinking water. More information on water hardness can be found on the Drinking Water Inspectorates' website: http://www.dwi.gov.uk/

Water hardness can be expressed in various indices for example the hardness settings for dishwashers are commonly expressed in Clark's degrees, but check with the manufacturer as there are also other units. The following table explains how to convert mg/l calcium and mg/l calcium carbonate classifications.

To Convert from:	To Clark degrees	To French degrees	To German degrees
mg/l calcium	multiply by 0.18	multiply by 0.25	multiply by 0.14
mg/l calcium carbonate	multiply by 0.07	multiply by 0.10	multiply by 0.056

Water meters

Q. 3.6: Is there a meter installed at this property?

A.: Records indicate that the property is not served by a water meter.

Guidance Notes:

Where the property is not served by a water meter and the customer wishes to consider this method of charging they should contact their water retailer.

If a property is measured (metered) upon change of occupation this property will retain the meter.

Charging

Sewerage undertaker

Q. 4.1.1: Who is responsible for providing the sewerage services for the property?

A.: Southern Water is responsible for providing the sewerage services for the property.

Guidance Notes:

The ‘wholesale’ part of the water industry did not open for competition in April 2017. This means that Southern Water continues to operate the network of pipes, mains and treatment works.

As a wholesaler, Southern Water sells sewerage services to the companies who enter the retail market. In some instances, wholesalers will still need to interact directly with customers. For example, customers will still contact Southern Water to report internal sewer flooding.

Water undertakers

Q. 4.1.2: Who is responsible for providing the water services for the property?

A.: South East Water is responsible for providing the water services for the property.

Guidance Notes:

The ‘wholesale’ part of the water industry did not open for competition in April 2017. This means that water undertakers continue to operate the network of pipes, mains and treatment works.

As a wholesaler, water undertakers sell water services to the companies who enter the retail market. In some instances, wholesalers will still need to interact directly with customers. For example, customers will still contact water undertakers to report leaks.

Sewerage bills

Q. 4.2: Who bills the property for sewerage services?

A.: If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit www.open-water.org.uk.

Guidance Notes:

From April 2017 non-household customers in England can choose their retailer.

'Retail' refers to the way in which customers are billed for their water and sewerage as well as customer services including meter reading.

Water bills

Q. 4.3: Who bills the property for water services?

A.: If you wish to know who bills the water services for this property then you will need to contact the current owner. For a list of all potential retailers of water services for the property please visit www.open-water.org.uk.

Guidance Notes:

From April 2017 non-household customers in England can choose their retailer.

'Retail' refers to the way in which customers are billed for their water and sewerage as well as customer services including meter reading.

Trade effluent information

Q. 4.4: Is there a consent on this property to discharge trade effluent under Section 118 of the Water Industry Act (1991) into the public sewerage system?

A.: The trader operating at this commercial property does not hold either a Trade Effluent Consent, or an acknowledgement of a trade effluent discharge, as issued by Southern Water.

Guidance Notes:

Please note, any existing consent is dependent on the business being carried out at the property and will not transfer automatically upon change of ownership.

Any change of ownership from the current incumbent of a property will require the negotiation of a new trade effluent consent or a new acknowledgement between the new incumbent and Southern Water.

Where consent or acknowledgement details have been provided, this does not represent a direct copy of the original.

Other Information

Additional meter information

No further information.

Appendix one: Terms and expressions

"the 1991 Act" means the Water Industry Act 1991**(i)**;
"the 2000 Regulations" means the Water Supply (Water Quality) Regulations 2000**(ii)**;
"the 2001 Regulations" means the Water Supply (Water Quality) Regulations 2001**(iii)**;
"adoption agreement" means an agreement made or to be made under Section 51A(1) or 104(1) of the 1991 Act**(iv)**;
"bond" means a surety granted by a developer who is a party to an adoption agreement;
"bond waiver" means an agreement with a developer for the provision of a form of financial security as a substitute for a bond;
"calendar year" means the twelve months ending with 31 December;
"discharge pipe" means a pipe from which discharges are made or are to be made under Section 165(1) of the 1991 Act;
"disposal main" means (subject to Section 219(2) of the 1991 Act) any outfall pipe or other pipe which:
(a) is a pipe for the conveyance of effluent to or from any sewage disposal works, whether of a sewerage undertaker or of any other person; and
(b) is not a public sewer;
"drain" means (subject to Section 219(2) of the 1991 Act) a drain used for the drainage of one building or any buildings or yards appurtenant to buildings within the same curtilage;
"effluent" means any liquid, including particles of matter and other substances in suspension in the liquid;
"financial year" means the twelve months ending with 31 March;
"lateral drain" means:
(a) that part of a drain which runs from the curtilage of a building (or buildings or yards within the same curtilage) to the sewer with which the drain communicates or is to communicate; or
(b) (if different and the context so requires) the part of a drain identified in a declaration of vesting made under Section 102 of the 1991 Act or in an agreement made under Section 104 of that Act**(v)**;
"licensed water supplier" means a company which is the holder for the time being of a water supply licence under Section 17A(1) of the 1991 Act**(vi)**;
"maintenance period" means the period so specified in an adoption agreement as a period of time:
(a) from the date of issue of a certificate by a sewerage undertaker to the effect that a developer has built (or substantially built) a private sewer or lateral drain to that undertaker's satisfaction; and
(b) until the date that private sewer or lateral drain is vested in the sewerage undertaker;
"map of waterworks" means the map made available under section 198(3) of the 1991 Act**(vii)** in relation to the information specified in subsection (1A);
"private sewer" means a pipe or pipes which drain foul or surface water, or both, from premises, and are not vested in a sewerage undertaker;
"public sewer" means, subject to Section 106(1A) of the 1991 Act**(viii)**, a sewer for the time being vested in a sewerage undertaker in its capacity as such, whether vested in that undertaker:
(a) by virtue of a scheme under Schedule 2 to the Water Act 1989**(ix)**;
(b) by virtue of a scheme under Schedule 2 to the 1991 Act**(x)**;
(c) under Section 179 of the 1991 Act**(xi)**; or
(d) otherwise;
"public sewer map" means the map made available under Section 199(5) of the 1991 Act**(xii)**;
"resource main" means (subject to Section 219(2) of the 1991 Act) any pipe, not being a trunk main, which is or is to be used for the purpose of:
(a) conveying water from one source of supply to another, from a source of supply to a regulating reservoir or from a regulating reservoir to a source of supply; or
(b) giving or taking a supply of water in bulk;
"sewerage services" includes the collection and disposal of foul and surface water and any other services which are required to be provided by a sewerage undertaker for the purpose of carrying out its functions;
"sewerage undertaker" means the company appointed to be the sewerage undertaker under Section 6(1) of the 1991 Act for the area in which the property is or will be situated;
"surface water" includes water from roofs and other impermeable surfaces within the curtilage of the property;
"water main" means (subject to Section 219(2) of the 1991 Act) any pipe, not being a pipe for the time being vested in a person other than the water undertaker, which is used or to be used by a water undertaker or licensed water supplier for the purpose of making a general supply of water available to customers or potential customers of the undertaker or supplier, as distinct from for the purpose of providing a supply to particular customers;
"water meter" means any apparatus for measuring or showing the volume of water supplied to, or of effluent discharged from any premises;
"water supplier" means the company supplying water in the water supply zone, whether a water undertaker or licensed water supplier;
"water supply zone" means the names and areas designated by a water undertaker within its area of supply that are to be its water supply zones for that year; and
"water undertaker" means the company appointed to be the water undertaker under Section 6(1) of the 1991 Act for the area in which the property is or will be situated.

In this report, references to a pipe, including references to a main, a drain or a sewer, shall include references to a tunnel or conduit which serves or is to serve as the pipe in question and to any accessories for the pipe.

(i) 1991 c.56.
(ii) S.I. 2000/3184. These Regulations apply in relation to England.
(iii) S.I. 2001/3911. These Regulations apply in relation to Wales.
(iv) Section 51A was inserted by Section 92(2) of the Water Act 2003 (c. 37). Section 104(1) was amended by Section 96(4) of that Act.
(v) Various amendments have been made to Sections 102 and 104 by section 96 of the Water Act 2003.
(vi) Inserted by Section 56 of and Schedule 4 to the Water Act 2003.
(vii) Subsection (1A) was inserted by Section 92(5) of the Water Act 2003.
(viii) Section 106(1A) was inserted by Section 99 of the Water Act 2003.
(ix) 1989 c.15.
(x) To which there are various amendments made by Section 101(1) of and Schedule 8 to the Water Act 2003.
(xi) To which there are various amendments made by Section 101(1) of and Schedule 8 to the Water Act 2003.
(xii) Section 199 was amended by Section 97(1) and (8) of the Water Act 2003.

Appendix two: A guide to new development

The information contained below is for general guidance only. It is recommended that Southern Water's Developer Services department be contacted for further details concerning new infrastructure development.

Wastewater information

Sewer requisitions

It may be necessary for a developer to request that Southern Water provides a public sewer to connect a development site to the existing public system. The developer is responsible for the cost of the work, although a discount will be applied based on the future predicted income from the development served by the new sewer.

Sewer diversions

If a public sewer crosses private land, it may be possible for the landowner/developer to request the sewer be diverted. In the majority of cases Southern Water will allow the developer to undertake this work under close supervision. Whether Southern Water or the developer undertakes the diversionary works the costs are the responsibility of the developer.

Building-over sewers

Public sewers are afforded statutory protection and consequently there is no right to build over or in close proximity to a public sewer. If an existing public sewer either crosses a development site or is located in close proximity to a development site it is essential that a developer contact Southern Water.

Sewer connections

A developer can serve notice on Southern Water that it wishes to make a connection to the public sewerage system. The developer must provide 21 days' notice and the work will be supervised by Southern Water.

Water information

Water requisitions

It may be necessary for a developer to request that Southern Water provides both:

(a) a public water main to connect a development site to the existing public system and,
(b) on-site public water mains to serve the individual properties.

In both cases the developer is responsible for the cost of the work, although a discount will be applied based on the future predicted income from the development.

It is possible for the developer to lay the on-site mains themselves under a Self-Lay Agreement. Further details are available from Southern Water.

Water main diversions

The building over or in close proximity to public water mains is not permitted. A developer must request that Southern Water undertakes a diversion of a water main that is affected by a development.

Water connections

A developer can request a new connection to a public water main. This work will be undertaken by Southern Water.

Contact us

For specific information on Southern Water's Developer Services service, including details on how to contact the right person, please visit our website: www.southernwater.co.uk/developers-and-builders-overview.

Appendix three: Terms and conditions

The Customer the Client and the Purchaser are asked to note these terms, which govern the basis on which this drainage and water report is supplied.

Definitions
"The Company" means the water service company operating within the Southern Water drainage area that provides information to Southern Water for this commercial search Report.
"Order" means any request completed by the Customer requesting the Report.
"Report" means the drainage and/or water report prepared by The Company in respect of the Property.
"Property" means the address or location supplied by the Customer in the Order.
"Customer" means the person, company, firm or other legal body placing the Order, either on their own behalf as Client, or, as an agent for a Client.
"Client" means the person, company or body who is the intended recipient of the Report with an actual or potential interest in the Property.
"Purchaser" means the actual or potential purchaser of the Property including their mortgage lender.

1.0 Agreement
1.1 Southern Water agrees to supply the Report subject to these terms. The scope and limitations of the Report are described in paragraph 2 of these terms. Where the Customer is acting as an agent for the Client then the Customer shall be responsible for bringing these terms to the attention of the Client.
1.2 The Customer and Client agree that the placing of an Order for a Report indicates their acceptance of these terms.

2.0 The Report
Whilst Southern Water will use reasonable care and skill in producing the Report, it is provided to the Client on the basis that they acknowledge and agree to the following:
2.1 The information contained in the Report can change on a regular basis so Southern Water cannot be responsible to the Client for any change in the information contained in the Report after the date on which the Report was produced and sent to the Client.
2.2 The Report does not give details about the actual state or condition of the Property nor should it be used or taken to indicate or exclude actual suitability or unsuitability of the Property for any particular purpose, or relied upon for determining saleability or value, or used as a substitute for any physical investigation or inspection. Further advice and information from appropriate experts and professionals should always be obtained.
2.3 The information contained in the Report is based upon the accuracy of the address supplied by the Customer or Client.
2.4 The Report provides information as to the location and connection of existing services, and details of trade effluent consents. It should not be relied upon for any other purpose. The Report may contain opinions or general advice to the Customer and the Client and Southern Water cannot ensure that any such opinion or general advice is accurate, complete or valid and accepts no liabilitytherefore.
2.5 The position and depth of apparatus shown on any maps attached to the Report are approximate, and are furnished as a general guide only, and no warranty as to its correctness is given or implied. The exact positions and depths should be obtained by excavation trial holes.

3.0 Liability
3.1 Southern Water shall not be liable to the Client for any failure defect or non-performance of its obligations arising from any failure of or defect in any machine, processing system or transmission link or anything beyond Southern Water's reasonable control or the acts or omissions or any party for whom Southern Water is not responsible.
3.2 Where a Report is requested for an address falling within a geographical area where Southern Water and another Company separately provide water and sewerage services, then it shall be deemed that liability for the information given by Southern Water or the Company as the case may be will remain with Southern Water or the Company as the case may be in respect of the accuracy of the information supplied. Where Southern Water is supplying information which has been provided to it by another Company for the purposes outlined in this agreement, Southern Water will therefore not be liable in any way for the accuracy of that information.
3.3 Where the Customer sells this Report to a Client (other than in the case of a bona fide legal adviser recharging the cost of the Report as a disbursement) Southern Water or the Company as the case may be shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss or damage whatsoever (save to the extent provided by clause 3.4) and the Customer shall indemnify Southern Water in respect of any claim (other than a claim covered by clause 3.4) by the Client.
3.4 Southern Water shall accept liability for death or personal injury arising from its negligence.
3.5 The entire liability of Southern Water or the Company as the case may be in respect of all causes of action arising under or in connection with the Report (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) shall not exceed £2,000,000 (two million pounds); and Southern Water or the Company as the case may be shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss of profit, loss of goodwill, loss of reputation, loss of business or any indirect, special or consequential loss, damage or other claims, costs orexpenses.

4.0 Copyright andconfidentiality
4.1 The Customer and the Client acknowledge that the Report is confidential and is intended for the personal use of the Client. The copyright and any other intellectual property rights in the Report shall remain the property of Southern Water. No intellectual or other property rights are transferred or licensed to the Customer or the Client except to the extent expresslyprovided.
4.2 The Customer or Client is entitled to make copies of the Report (other than any maps contained in the, or attached to the Report, where no copying is permitted).
4.3 The Customer and Client agree (in respect of both the original and any copies made) to respect and not to alter any trademark, copyright notice or other property marking which appears on theReport.
4.4 The maps contained in the Report are protected by Crown Copyright and must not be used for any purpose outside the context of the Report.
4.5 The Customer and the Client agree to indemnify Southern Water or the Company as the case may be against any losses, costs, claims and damage suffered by Southern Water or the Company as the case may be, as a result of any breach by either of them of the terms of paragraphs 4.1 to 4.4 inclusive.

5.0 Payment
5.1 Unless otherwise stated all prices are inclusive of VAT. The Customer shall pay for the price of the Report specified by Southern Water, without any set off, deduction or counterclaim. Unless the Customer or Client has an account with Southern Water for payment for Reports, payments for Reports must be received in full by Southern Water before the Report is produced. For Customers or Clients with accounts, payment terms will be as agreed with Southern Water.

6.0 General
6.1 If any provision of these terms is or becomes invalid or unenforceable, it will be taken to be removed from the rest of these terms to the extent that it is invalid or unenforceable. No other provision of these terms shall beaffected.
6.2 These terms shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts.
6.3 Nothing in this notice shall in any way restrict your statutory or any other rights of access to the information contained in the Report.

These Terms and conditions are available in larger print for those with impaired vision.

Appendix four: Complaints procedure

When we get it wrong
You deserve the highest standard of service from us, but sometimes we make mistakes. If we do, please let us know and we will investigate and review your concerns.

Whilst we always try to resolve all complaints straight away, if this is not possible and you are not happy with the course of action taken by us, you can ask us to escalate the issue internally or take your complaint to an independent third party.

How you contact us
Firstly please call us and we will try to sort out your problem straight away.

You can call us between 8am and 5pm, Monday to Friday on 0845 270 0212 or 0330 303 0276 (individual consumers);

Email us at searches@southernwater.co.uk; or

Write to us at LandSearch, Southern Water Services, Southern House, Capstone Road, Chatham, Kent, ME5 7QA.

What you can expect
You will receive a full, fair and courteous response from someone who can effectively deal with your problem.

If we can remedy the problem straight away we will do it but if we cannot immediately resolve your problem we will keep you informed of actions being taken.

The process
We will try to resolve any telephone contact or complaint at the time of the call, however, if that isn't possible, we will take the details of your complaint and we will investigate and get back to you within 10 working days.

We will respond to written complaints within 10 working days of the date received, but we will always aim to respond more quickly. Depending on the scale of investigation required, we will keep you informed of the progress and update you with new timescales if necessary.

If you are still not satisfied with our response or action we will refer the matter to a Senior Manager for resolution. At your request we will liaise with a third party representative acting on your behalf.

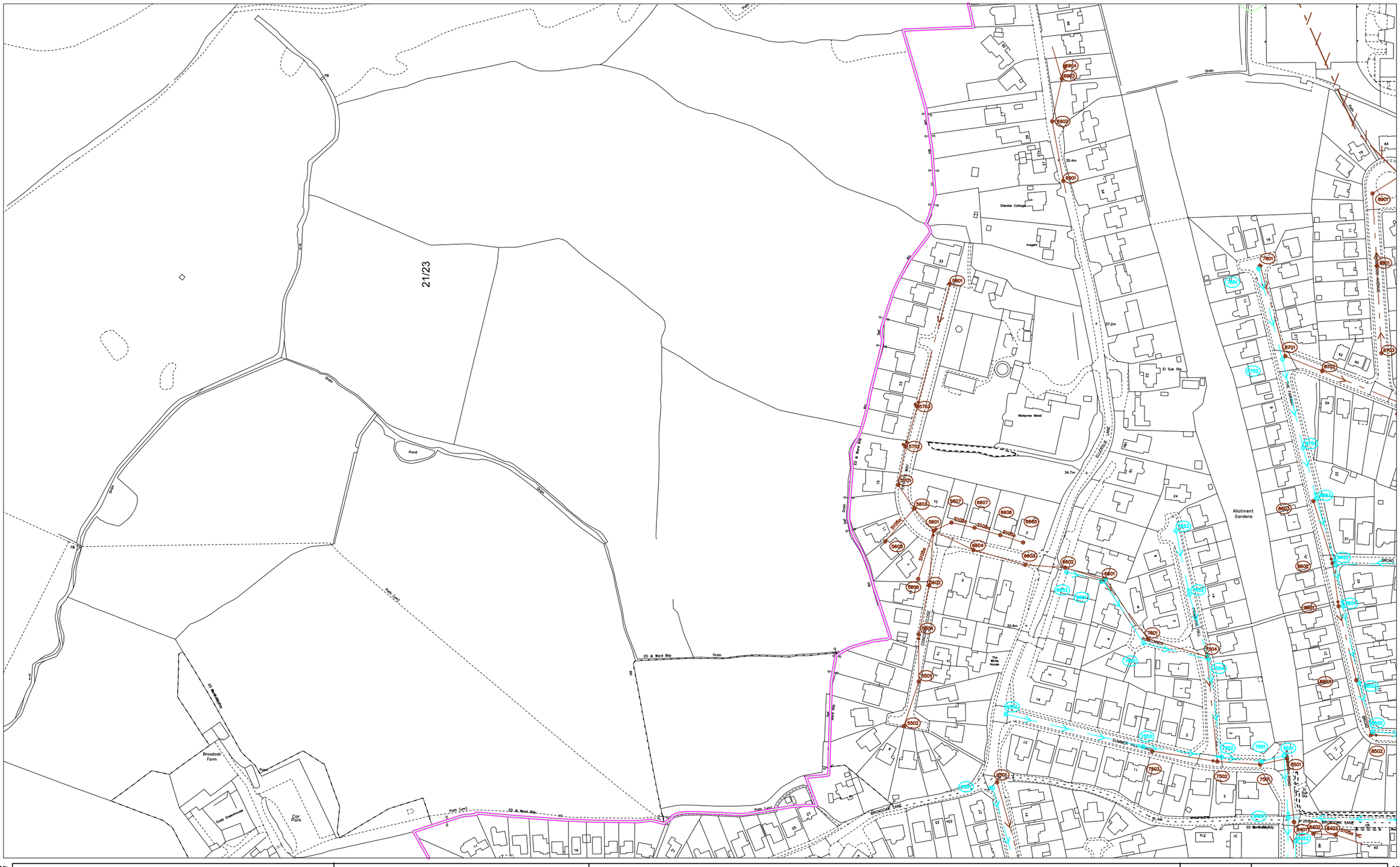
Our commitment to you
If we do not respond to your complaint within 10 working days of receipt of your contact, we will compensate you in line with Southern Water's Customer services — Guaranteed standards of service for business customers.

If we find your complaint to be justified, or we have made any errors that substantially change the outcome in your search result, we will refund the search fee. We will also provide you with a revised search and undertake the necessary action to put things right as soon as practically possible. You will be kept informed of the progress of any action required.

If you remain dissatisfied
While we aim to resolve your complaint first time, in the event that we are unable to resolve the issue to your satisfaction, ultimately you can contact a third party. Please make sure that you have followed the process above first, if not, your complaint will be passed back to us.

SEWER RECORDS PAGE 1 OF 2

109033



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572891

O.S. REF. TQ7208NW	Drawn by: panigar	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 determnined on site. WARNING: BAC pipes are constructed of Bonded Asbestos Cement WARNING: Unknown (UNK) materials may Include Bonded Asbestos Cement
	Scale: 1:2500	
Title: Land at Fryatts Way	Date: 18/10/2019	Based upon Ordnance Survey Digital Data with the permission of the controller of H.M.S.O. Crown Copyright Reserved Licence No. WU 298530.

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Southern Water

SEWER RECORDS PAGE 2 OF 2

Node	Cover	Invert	Size	Material	Shape
5501X	33.92	31.42	150	VC	CIRC
5502X	34.27	31.66	150	VC	CIRC
5601X	29.5	27.3	150	VC	CIRC
5602X	30.3	28.57	150	VC	CIRC
5603X	28.96	27.45	150	VC	CIRC
5604X	31.88	29.23	150	VC	CIRC
5605X			UNK	UNK	CIRC
5606X			UNK	UNK	CIRC
5607X			UNK	UNK	CIRC
5701X	30.33	27.76	150	VC	CIRC
5702X	32.34	27.89	150	VC	CIRC
5703X	35.49	31.89	150	VC	CIRC
5801X	37.81	35.85	150	VC	CIRC
6501X	34.22	28.34	225	VC	CIRC
6551X	34.17	28.14	225	CP	CIRC
6552X	35.06	33.66	150	VC	CIRC
6601X	32.63	26.03	150	VC	CIRC
6602X	32.59	26.43	150	VC	CIRC
6603X	32.35	26.72	150	VC	CIRC
6604X	31.09	27.06	150	VC	CIRC
6605X			UNK	UNK	CIRC
6606X			UNK	UNK	CIRC
6607X			UNK	UNK	CIRC
6651X	32.63	26.32	150	VC	CIRC
6652X	32.57	26.67	150	VC	CIRC
6901X			UNK	UNK	CIRC
6902X			UNK	UNK	CIRC
6903X			UNK	UNK	CIRC
6904X			UNK	UNK	CIRC
7501X	28.3	24.16	225	VC	CIRC
7502X	30.11	24.31	225	VC	CIRC
7503X	32.46	29.98	150	VC	CIRC
7504X	30.21	25.05	225	VC	CIRC
7551X	28.19	24.39	300	CP	CIRC
7552X	30.01	24.62	300	CP	CIRC
7553X	32.81	30.5	150	VC	CIRC
7554X	30.21	25.32	225	VC	CIRC
7601X	31.99	25.69	150	VC	CIRC
7651X	32	25.97	150	VC	CIRC
7652X	31.86	29.8	150	VC	CIRC
7653X	34.36	32.51	150	VC	CIRC
7801X	37.85	36.9	225	VC	CIRC
7851X	37.87	36.81	225	VC	CIRC
8401X	25.84	23.33	225	VC	CIRC
8403X			UNK	VC	CIRC
8451X	25.91	17.99	600	CP	CIRC
8452X	25.52	24.06	225	VC	CIRC
8501X	27.42	23.99	225	VC	CIRC
8502X	24.91	23.55	225	VC	CIRC
8503X	26.02	24.35	150	VC	CIRC
8551X	27.47	24.35	375	CP	CIRC
8552X	24.93	23.76	225	VC	CIRC
8553X	25.95	24.58	225	VC	CIRC
8601X	30.74	28.74	150	VC	CIRC
8602X	34.31	31.21	150	VC	CIRC
8603X	37.99	35.27	150	VC	CIRC
8651X	30.63	27.95	225	VC	CIRC
8652X	34.21	31.39	225	VC	CIRC
8653X	37.81	33.55	225	VC	CIRC
8701X	39.45	36.52	225	VC	CIRC
8702X	40.1	36.37	225	VC	CIRC
8703X	39.94	37.56	225	VC	CIRC
8751X	39.84	35.99	225	VC	CIRC
8752X	39.53	36.34	225	VC	CIRC
8801X	38.06	36.45	225	VC	CIRC

Node	Cover	Invert	Size	Material	Shape
8901X	37.05	36.05	225	VC	CIRC

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LINE STYLES / COLOURS

Brown — Foul; Foul Syphon Sewer; Foul Vacuum Main; Foul Rising Main
Red — Combined; Combined Syphon Sewer; Combined Rising Main; Lateral Drain
Orange — Building Over Agreement Area
Dark Blue — Treated Effluent
Purple — Sludge; Sewer Catchment; Section 104 Area
Light Blue — Surface Water; Surface Water Rising Main
Yellow — Private
Green — Access Shaft; Decommissioned

MATERIALS

AK	Alkathene
BAC	Bonded Asbestos Cement
BRC	Brick (Common)
BRE	Brick (Engineering)
CC	Concrete Box Culvert
CI	Cast Iron
CO	Concrete (In-Situ)
CP	Concrete (Pre-Cast)
CSB	Concrete Segments (bolted)
CSU	Concrete Segments (unbolted)
DI	Ductile Iron
GRC	Glass Reinforced Concrete
GRP	Glass Reinforced Plastic
MAC	Masonry in regular Courses
MAR	Masonry in random Courses
PE	Polyethylene
PF	Pitch Fibre
PP	Polypropylene
PVC	Polyvinyl Chloride
RPM	Reinforced Plastic Matrix
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
XXX	Other
ZZZ	Unknown

Manhole (SW); Manhole (F&C); Lamp hole (SW); Lamp hole (F&C); Pumping Station (SW); Pumping Station (F&C); Side entry manhole (SW); Side entry Manhole (F&C); Blind shaft (SW); Blind shaft (F&C); Ejector station (SW); Ejector station (F&C); Watertight door (SW); Watertight door (F&C); Flushing ch. Mn-e (SW); Flushing ch. Mn-e (F&C); Flushing ch. No-e (SW); Flushing ch. No-e (F&C); Demarcation Chamber

LEGEND - SEWERS

Washout (SW); Washout (F&C); Rodding Eye (SW); Rodding Eye (F&C); Gauging point (SW); Gauging point (F&C); Intercept chamber (SW); Intercept chamber (F&C); Storm Tank (SW); Storm Tank (F&C); Vortex chamber (SW); Vortex chamber (F&C); Label ellipse; Dummy/S24 manhole; Outfall; Penstock chamber; Damboards; Storm Overflow; Backdrop manhole

Other (s); Other; Change in sewer (s); Change in sewer; Reflux valve; Flap valve; Cascade; Anode; Valve; Closed Valve; Air Valve; Hatch box (SW); Hatch box (F&C); Direction arrow; Emptying valve; Catchpit; Soakaway; Inlet; Balancing Pond

Wastewater treatment works; Marine treatment works; Outfall headworks; Vent; Vent column; Tidal storage tank; Blank end; Head of Public Sewer; Micro Pumping Station

SHAPES (S)

A	Arched	R	Rectangular
B	Barrel	S	Square
C	Circular	T	Trapezoidal
E	Egg	U	U Shape
H	Horseshoe	X	Other

NODE REFERENCING SYSTEM

1st digit: hundred metre easting identifier
2nd digit: hundred metre northing identifier
3rd digit: sewer type identifier
0-4 = Foul/Combined
5-9 = Surface Water
4th digit: next sequential node

Drawn by:	panigar
Title:	Land at Fryatts Way
Date:	18/10/2019

Southern Water

125 mm HDPE
12 in CI
3 in CI
9 in AC
4 in CI
150 mm AC
100 mm AC
3 in AC
6 in CI
6 in AC
1 in GI
100 mm AC
150 mm AC
75 mm AC
1 1/4 in GI
2 in AC
1 1/2 in AC
150 mm DI
4 in AC
3 in AC
2 in AC
Highwoods Golf Course
Golf Course
TURKEY ROAD
SUMMER HILL ROAD
FOXHILL
SQUIRREL CLOSE
WILLHAM CLOSE
BUSHY CROFT
COUNTHOPE DRIVE
Broad Oak Park
Nursery
50 25 0 50 Meters

Drawing Title: Land at Fryatts Way Bexhill On Sea East Sussex TN39 4LW

South East Water Mains and Fittings

Valve	Meter	Distribution Main
Washout	Pressure Valve	Abandoned Main
Fire Hydrant	Air Valve	Company Boundary

Reference: U1473957	
Plot Date:	17/10/2019
Grid Reference:	572,319.0000 108,824.0000
Scale:	1:3,000

south east water
(Water Maps)
PO Box 105
Snodland, Kent
ME6 9DW
Telephone: 0333 000 0058
Email: water.maps@southeastwater.co.uk
Website: www.southeastwater.co.uk

APPENDIX G
GREENFIELD RUNOFF RATES CALCULATIONS

Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	colin whittingham
Site name:	Fryatts Way
Site location:	Bexhill

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013) , the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be
the basis for setting consents for the drainage of surface water runoff from sites.

Site Details

Latitude:	50.85317° N
Longitude:	0.44777° E
Reference:	2067460443
Date:	Jun 16 2021 08:54

Runoff estimation approach IH124

Site characteristics

Total site area (ha): 6.9

Methodology

Q_{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

	Default	Edited
SOIL type:	4	4
HOST class:	N/A	N/A
SPR/SPRHOST:	0.47	0.47

Hydrological characteristics

	Default	Edited
SAAR (mm):	734	734
Hydrological region:	7	7
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Growth curve factor 200 years:	3.74	3.74

Notes

(1) Is Q_{BAR} < 2.0 l/s/ha?

When Q_{BAR} is < 2.0 l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

(2) Are flow rates < 5.0 l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

(3) Is SPR/SPRHOST ≤ 0.3?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates

	Default	Edited
Q_{BAR} (l/s):	35.21	35.21
1 in 1 year (l/s):	29.93	29.93
1 in 30 years (l/s):	80.99	80.99
1 in 100 year (l/s):	112.33	112.33
1 in 200 years (l/s):	131.7	131.7

APPENDIX H
INDICATIVE SURFACE WATER CALCULATIONS

Summary of Results for 2 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	15.950	0.150	7.2	114.3	O K
30 min Summer	15.992	0.192	8.9	147.9	O K
60 min Summer	16.033	0.233	9.7	182.0	O K
120 min Summer	16.070	0.270	9.9	213.2	O K
180 min Summer	16.086	0.286	9.9	227.0	O K
240 min Summer	16.096	0.296	9.9	235.2	O K
360 min Summer	16.106	0.306	9.9	244.1	O K
480 min Summer	16.109	0.309	9.9	247.3	O K
600 min Summer	16.110	0.310	9.9	247.5	O K
720 min Summer	16.108	0.308	9.9	245.7	O K
960 min Summer	16.100	0.300	9.9	238.8	O K
1440 min Summer	16.078	0.278	9.9	219.9	O K
2160 min Summer	16.044	0.244	9.7	191.3	O K
2880 min Summer	16.017	0.217	9.4	168.5	O K
4320 min Summer	15.981	0.181	8.5	138.7	O K
5760 min Summer	15.958	0.158	7.5	120.5	O K
7200 min Summer	15.942	0.142	6.8	108.0	O K
8640 min Summer	15.930	0.130	6.1	98.6	O K
10080 min Summer	15.921	0.121	5.6	91.2	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Summer	36.365	32
30 min Summer	24.055	45
60 min Summer	15.352	70
120 min Summer	9.607	124
180 min Summer	7.267	172
240 min Summer	5.954	204
360 min Summer	4.480	270
480 min Summer	3.655	338
600 min Summer	3.121	408
720 min Summer	2.743	476
960 min Summer	2.237	612
1440 min Summer	1.678	876
2160 min Summer	1.259	1248
2880 min Summer	1.026	1612
4320 min Summer	0.770	2332
5760 min Summer	0.628	3056
7200 min Summer	0.536	3752
8640 min Summer	0.471	4496
10080 min Summer	0.422	5168

Summary of Results for 2 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Winter	15.967	0.167	8.0	128.0	O K
30 min Winter	16.014	0.214	9.4	166.1	O K
60 min Winter	16.061	0.261	9.8	205.3	O K
120 min Winter	16.104	0.304	9.9	242.2	O K
180 min Winter	16.123	0.323	9.9	259.5	O K
240 min Winter	16.133	0.333	9.9	268.1	O K
360 min Winter	16.141	0.341	9.9	275.2	O K
480 min Winter	16.142	0.342	9.9	276.3	O K
600 min Winter	16.139	0.339	9.9	273.5	O K
720 min Winter	16.133	0.333	9.9	268.2	O K
960 min Winter	16.117	0.317	9.9	253.8	O K
1440 min Winter	16.079	0.279	9.9	220.8	O K
2160 min Winter	16.028	0.228	9.6	177.8	O K
2880 min Winter	15.994	0.194	8.9	149.4	O K
4320 min Winter	15.954	0.154	7.4	117.7	O K
5760 min Winter	15.932	0.132	6.2	100.2	O K
7200 min Winter	15.918	0.118	5.4	88.7	O K
8640 min Winter	15.907	0.107	4.8	80.5	O K
10080 min Winter	15.899	0.099	4.3	74.3	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Winter	36.365	32
30 min Winter	24.055	45
60 min Winter	15.352	72
120 min Winter	9.607	124
180 min Winter	7.267	180
240 min Winter	5.954	232
360 min Winter	4.480	290
480 min Winter	3.655	368
600 min Winter	3.121	444
720 min Winter	2.743	520
960 min Winter	2.237	664
1440 min Winter	1.678	934
2160 min Winter	1.259	1304
2880 min Winter	1.026	1652
4320 min Winter	0.770	2376
5760 min Winter	0.628	3072
7200 min Winter	0.536	3816
8640 min Winter	0.471	4504
10080 min Winter	0.422	5248

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time / Area Diagram

Total Area (ha) 1.772

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.354	4-8	0.354	8-12	0.354	12-16	0.355	16-20	0.355

Model Details

Storage is Online Cover Level (m) 17.000

Tank or Pond Structure

Invert Level (m) 15.800

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	725.0	1.200	1300.0

Hydro-Brake® Outflow Control

Design Head (m) 1.200 Diameter (mm) 134
Design Flow (l/s) 11.3 Invert Level (m) 15.800
Hydro-Brake® Type Md6 SW Only

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.4	1.200	11.3	3.000	17.7	7.000	27.1
0.200	9.1	1.400	12.1	3.500	19.2	7.500	28.1
0.300	9.9	1.600	13.0	4.000	20.5	8.000	29.0
0.400	9.6	1.800	13.7	4.500	21.7	8.500	29.9
0.500	9.2	2.000	14.5	5.000	22.9	9.000	30.7
0.600	9.1	2.200	15.2	5.500	24.0	9.500	31.6
0.800	9.5	2.400	15.9	6.000	25.1		
1.000	10.4	2.600	16.5	6.500	26.1		

Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	16.075	0.275	9.9	217.5	O K
30 min Summer	16.155	0.355	9.9	287.6	O K
60 min Summer	16.235	0.435	9.9	360.9	O K
120 min Summer	16.310	0.510	9.9	431.8	O K
180 min Summer	16.346	0.546	9.9	467.1	O K
240 min Summer	16.365	0.565	9.9	486.4	O K
360 min Summer	16.382	0.582	9.9	503.5	O K
480 min Summer	16.386	0.586	9.9	506.9	O K
600 min Summer	16.386	0.586	9.9	506.8	O K
720 min Summer	16.383	0.583	9.9	504.3	O K
960 min Summer	16.374	0.574	9.9	495.0	O K
1440 min Summer	16.346	0.546	9.9	466.8	O K
2160 min Summer	16.294	0.494	9.9	416.4	O K
2880 min Summer	16.240	0.440	9.9	365.6	O K
4320 min Summer	16.144	0.344	9.9	277.5	O K
5760 min Summer	16.073	0.273	9.9	215.8	O K
7200 min Summer	16.026	0.226	9.6	176.4	O K
8640 min Summer	15.997	0.197	9.0	152.3	O K
10080 min Summer	15.978	0.178	8.4	136.2	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Summer	68.836	33
30 min Summer	45.828	47
60 min Summer	29.238	74
120 min Summer	18.112	132
180 min Summer	13.534	190
240 min Summer	10.952	246
360 min Summer	8.106	362
480 min Summer	6.544	436
600 min Summer	5.539	496
720 min Summer	4.832	560
960 min Summer	3.892	690
1440 min Summer	2.866	964
2160 min Summer	2.108	1368
2880 min Summer	1.693	1756
4320 min Summer	1.242	2476
5760 min Summer	0.996	3176
7200 min Summer	0.839	3832
8640 min Summer	0.730	4512
10080 min Summer	0.648	5248

Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Winter	16.106	0.306	9.9	244.5	O K
30 min Winter	16.195	0.395	9.9	323.9	O K
60 min Winter	16.284	0.484	9.9	407.3	O K
120 min Winter	16.368	0.568	9.9	488.7	O K
180 min Winter	16.409	0.609	9.9	530.4	O K
240 min Winter	16.432	0.632	9.9	554.2	O K
360 min Winter	16.455	0.655	9.9	577.7	O K
480 min Winter	16.462	0.662	9.9	584.7	O K
600 min Winter	16.460	0.660	9.9	582.4	O K
720 min Winter	16.453	0.653	9.9	575.9	O K
960 min Winter	16.440	0.640	9.9	562.2	O K
1440 min Winter	16.398	0.598	9.9	519.1	O K
2160 min Winter	16.318	0.518	9.9	439.7	O K
2880 min Winter	16.233	0.433	9.9	358.6	O K
4320 min Winter	16.091	0.291	9.9	231.1	O K
5760 min Winter	16.013	0.213	9.4	165.1	O K
7200 min Winter	15.976	0.176	8.3	135.2	O K
8640 min Winter	15.955	0.155	7.4	117.7	O K
10080 min Winter	15.940	0.140	6.6	105.9	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Winter	68.836	33
30 min Winter	45.828	47
60 min Winter	29.238	74
120 min Winter	18.112	130
180 min Winter	13.534	188
240 min Winter	10.952	244
360 min Winter	8.106	356
480 min Winter	6.544	466
600 min Winter	5.539	568
720 min Winter	4.832	600
960 min Winter	3.892	744
1440 min Winter	2.866	1052
2160 min Winter	2.108	1484
2880 min Winter	1.693	1880
4320 min Winter	1.242	2560
5760 min Winter	0.996	3176
7200 min Winter	0.839	3832
8640 min Winter	0.730	4520
10080 min Winter	0.648	5248

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time / Area Diagram

Total Area (ha) 1.772

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.354	4-8	0.354	8-12	0.354	12-16	0.355	16-20	0.355

Model Details

Storage is Online Cover Level (m) 17.000

Tank or Pond Structure

Invert Level (m) 15.800

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	725.0	1.200	1300.0

Hydro-Brake® Outflow Control

Design Head (m) 1.200 Diameter (mm) 134
Design Flow (l/s) 11.3 Invert Level (m) 15.800
Hydro-Brake® Type Md6 SW Only

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.4	1.200	11.3	3.000	17.7	7.000	27.1
0.200	9.1	1.400	12.1	3.500	19.2	7.500	28.1
0.300	9.9	1.600	13.0	4.000	20.5	8.000	29.0
0.400	9.6	1.800	13.7	4.500	21.7	8.500	29.9
0.500	9.2	2.000	14.5	5.000	22.9	9.000	30.7
0.600	9.1	2.200	15.2	5.500	24.0	9.500	31.6
0.800	9.5	2.400	15.9	6.000	25.1		
1.000	10.4	2.600	16.5	6.500	26.1		

Summary of Results for 2 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m^3)	Status
15 min Summer	13.706	0.306	22.6	120.1	O K
30 min Summer	13.783	0.383	22.7	155.2	O K
60 min Summer	13.847	0.447	22.7	186.5	O K
120 min Summer	13.885	0.485	22.7	205.2	O K
180 min Summer	13.894	0.494	22.7	209.6	O K
240 min Summer	13.892	0.492	22.7	208.7	O K
360 min Summer	13.872	0.472	22.7	198.8	O K
480 min Summer	13.844	0.444	22.7	184.9	O K
600 min Summer	13.814	0.414	22.7	170.2	O K
720 min Summer	13.784	0.384	22.7	156.1	O K
960 min Summer	13.733	0.333	22.7	132.2	O K
1440 min Summer	13.665	0.265	21.6	102.0	O K
2160 min Summer	13.610	0.210	18.6	79.1	O K
2880 min Summer	13.580	0.180	16.0	66.7	O K
4320 min Summer	13.546	0.146	12.6	53.3	O K
5760 min Summer	13.526	0.126	10.5	45.7	O K
7200 min Summer	13.513	0.113	9.1	40.7	O K
8640 min Summer	13.503	0.103	8.0	37.0	O K
10080 min Summer	13.496	0.096	7.2	34.1	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Summer	36.365	30
30 min Summer	24.055	40
60 min Summer	15.352	64
120 min Summer	9.607	104
180 min Summer	7.267	138
240 min Summer	5.954	172
360 min Summer	4.480	240
480 min Summer	3.655	306
600 min Summer	3.121	370
720 min Summer	2.743	432
960 min Summer	2.237	550
1440 min Summer	1.678	782
2160 min Summer	1.259	1136
2880 min Summer	1.026	1492
4320 min Summer	0.770	2212
5760 min Summer	0.628	2944
7200 min Summer	0.536	3672
8640 min Summer	0.471	4408
10080 min Summer	0.422	5136

Summary of Results for 2 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Winter	13.740	0.340	22.7	135.6	O K
30 min Winter	13.827	0.427	22.7	176.6	O K
60 min Winter	13.901	0.501	22.7	213.6	O K
120 min Winter	13.943	0.543	22.7	235.5	O K
180 min Winter	13.948	0.548	22.7	237.7	O K
240 min Winter	13.940	0.540	22.7	233.7	O K
360 min Winter	13.904	0.504	22.7	215.1	O K
480 min Winter	13.856	0.456	22.7	190.7	O K
600 min Winter	13.805	0.405	22.7	165.8	O K
720 min Winter	13.758	0.358	22.7	143.8	O K
960 min Winter	13.689	0.289	22.3	112.6	O K
1440 min Winter	13.617	0.217	19.2	81.9	O K
2160 min Winter	13.569	0.169	15.0	62.5	O K
2880 min Winter	13.544	0.144	12.5	52.6	O K
4320 min Winter	13.516	0.116	9.4	41.9	O K
5760 min Winter	13.501	0.101	7.7	36.0	O K
7200 min Winter	13.491	0.091	6.6	32.2	O K
8640 min Winter	13.483	0.083	5.8	29.3	O K
10080 min Winter	13.477	0.077	5.2	27.2	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Winter	36.365	30
30 min Winter	24.055	42
60 min Winter	15.352	66
120 min Winter	9.607	116
180 min Winter	7.267	150
240 min Winter	5.954	188
360 min Winter	4.480	262
480 min Winter	3.655	330
600 min Winter	3.121	394
720 min Winter	2.743	452
960 min Winter	2.237	564
1440 min Winter	1.678	792
2160 min Winter	1.259	1144
2880 min Winter	1.026	1500
4320 min Winter	0.770	2220
5760 min Winter	0.628	2944
7200 min Winter	0.536	3672
8640 min Winter	0.471	4408
10080 min Winter	0.422	5136

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time / Area Diagram

Total Area (ha) 2.095

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.419	4-8	0.419	8-12	0.419	12-16	0.419	16-20	0.419

Model Details

Storage is Online Cover Level (m) 14.900

Tank or Pond Structure

Invert Level (m) 13.400

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	340.0	1.500	855.0

Complex Outflow Control

Hydro-Brake®

Design Head (m) 0.400 Diameter (mm) 189
Design Flow (l/s) 22.0 Invert Level (m) 13.400
Hydro-Brake® Type Md12 SW Only

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	7.6	1.200	25.9	3.000	40.9	7.000	62.5
0.200	17.8	1.400	27.9	3.500	44.2	7.500	64.7
0.300	22.5	1.600	29.9	4.000	47.2	8.000	66.8
0.400	22.0	1.800	31.7	4.500	50.1	8.500	68.8
0.500	20.4	2.000	33.4	5.000	52.8	9.000	70.8
0.600	20.0	2.200	35.0	5.500	55.4	9.500	72.8
0.800	21.4	2.400	36.6	6.000	57.8		
1.000	23.7	2.600	38.1	6.500	60.2		

Hydro-Brake®

Design Head (m) 0.400 Diameter (mm) 232
Design Flow (l/s) 38.0 Invert Level (m) 14.200
Hydro-Brake® Type Md6 SW Only

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	7.7	1.200	36.4	3.000	53.2	7.000	81.2
0.200	20.8	1.400	37.8	3.500	57.5	7.500	84.1
0.300	32.4	1.600	39.6	4.000	61.4	8.000	86.9
0.400	38.0	1.800	41.6	4.500	65.1	8.500	89.5
0.500	39.1	2.000	43.6	5.000	68.7	9.000	92.1
0.600	38.8	2.200	45.6	5.500	72.0	9.500	94.7
0.800	36.9	2.400	47.6	6.000	75.2		
1.000	35.9	2.600	49.5	6.500	78.3		

Hydro-Brake®

Design Head (m) 0.300 Diameter (mm) 261
Design Flow (l/s) 43.0 Invert Level (m) 14.637
Hydro-Brake® Type Md12 SW Only

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	10.7	1.200	49.7	3.000	78.0	7.000	119.1
0.200	28.1	1.400	53.4	3.500	84.2	7.500	123.3
0.300	42.9	1.600	57.0	4.000	90.1	8.000	127.4
0.400	50.1	1.800	60.4	4.500	95.5	8.500	131.3
0.500	50.6	2.000	63.7	5.000	100.7	9.000	135.1
0.600	48.0	2.200	66.8	5.500	105.6	9.500	138.8
0.800	44.8	2.400	69.8	6.000	110.3		
1.000	46.3	2.600	72.6	6.500	114.8		

Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	13.956	0.556	22.7	241.9	O K
30 min Summer	14.097	0.697	22.7	320.5	O K
60 min Summer	14.219	0.819	22.7	393.4	O K
120 min Summer	14.285	0.885	28.3	435.7	O K
180 min Summer	14.296	0.896	29.7	442.4	O K
240 min Summer	14.296	0.896	29.7	442.5	O K
360 min Summer	14.285	0.885	28.3	435.2	O K
480 min Summer	14.267	0.867	26.2	424.1	O K
600 min Summer	14.247	0.847	24.2	411.1	O K
720 min Summer	14.224	0.824	22.7	396.5	O K
960 min Summer	14.168	0.768	22.7	362.4	O K
1440 min Summer	14.051	0.651	22.7	294.2	O K
2160 min Summer	13.866	0.466	22.7	195.7	O K
2880 min Summer	13.728	0.328	22.7	130.1	O K
4320 min Summer	13.626	0.226	19.8	85.7	O K
5760 min Summer	13.585	0.185	16.6	68.8	O K
7200 min Summer	13.560	0.160	14.1	58.9	O K
8640 min Summer	13.544	0.144	12.4	52.4	O K
10080 min Summer	13.531	0.131	11.1	47.5	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Summer	68.836	32
30 min Summer	45.828	44
60 min Summer	29.238	70
120 min Summer	18.112	120
180 min Summer	13.534	148
240 min Summer	10.952	182
360 min Summer	8.106	252
480 min Summer	6.544	324
600 min Summer	5.539	398
720 min Summer	4.832	470
960 min Summer	3.892	610
1440 min Summer	2.866	874
2160 min Summer	2.108	1232
2880 min Summer	1.693	1540
4320 min Summer	1.242	2220
5760 min Summer	0.996	2944
7200 min Summer	0.839	3672
8640 min Summer	0.730	4408
10080 min Summer	0.648	5136

Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Winter	14.015	0.615	22.7	273.9	O K
30 min Winter	14.168	0.768	22.7	362.6	O K
60 min Winter	14.294	0.894	29.4	441.0	O K
120 min Winter	14.357	0.957	38.3	482.9	O K
180 min Winter	14.368	0.968	39.9	490.1	O K
240 min Winter	14.366	0.966	39.5	488.5	O K
360 min Winter	14.346	0.946	36.7	475.6	O K
480 min Winter	14.322	0.922	33.2	459.1	O K
600 min Winter	14.295	0.895	29.6	441.8	O K
720 min Winter	14.267	0.867	26.2	423.9	O K
960 min Winter	14.197	0.797	22.7	380.0	O K
1440 min Winter	14.010	0.610	22.7	271.1	O K
2160 min Winter	13.724	0.324	22.7	128.0	O K
2880 min Winter	13.633	0.233	20.2	88.3	O K
4320 min Winter	13.571	0.171	15.2	63.1	O K
5760 min Winter	13.542	0.142	12.3	51.9	O K
7200 min Winter	13.525	0.125	10.4	45.1	O K
8640 min Winter	13.513	0.113	9.0	40.4	O K
10080 min Winter	13.503	0.103	8.0	37.0	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Winter	68.836	32
30 min Winter	45.828	45
60 min Winter	29.238	68
120 min Winter	18.112	116
180 min Winter	13.534	148
240 min Winter	10.952	186
360 min Winter	8.106	262
480 min Winter	6.544	338
600 min Winter	5.539	416
720 min Winter	4.832	496
960 min Winter	3.892	658
1440 min Winter	2.866	932
2160 min Winter	2.108	1216
2880 min Winter	1.693	1532
4320 min Winter	1.242	2220
5760 min Winter	0.996	2944
7200 min Winter	0.839	3672
8640 min Winter	0.730	4400
10080 min Winter	0.648	5144

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

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m^3)	Status
15 min Summer	14.314	0.914	32.1	453.9	O K
30 min Summer	14.506	1.106	57.8	586.1	O K
60 min Summer	14.662	1.262	66.6	702.5	Flood Risk
120 min Summer	14.740	1.340	77.6	764.0	Flood Risk
180 min Summer	14.758	1.358	80.7	778.4	Flood Risk
240 min Summer	14.755	1.355	80.2	776.2	Flood Risk
360 min Summer	14.731	1.331	76.1	756.8	Flood Risk
480 min Summer	14.699	1.299	71.1	731.4	Flood Risk
600 min Summer	14.663	1.263	66.6	703.2	Flood Risk
720 min Summer	14.624	1.224	64.6	673.5	Flood Risk
960 min Summer	14.557	1.157	61.9	622.9	O K
1440 min Summer	14.465	1.065	53.2	556.8	O K
2160 min Summer	14.379	0.979	41.4	497.2	O K
2880 min Summer	14.315	0.915	32.3	455.1	O K
4320 min Summer	14.149	0.749	22.7	351.0	O K
5760 min Summer	13.863	0.463	22.7	194.3	O K
7200 min Summer	13.694	0.294	22.4	114.7	O K
8640 min Summer	13.639	0.239	20.5	91.2	O K
10080 min Summer	13.608	0.208	18.5	78.3	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Summer	124.633	32
30 min Summer	83.789	42
60 min Summer	53.779	66
120 min Summer	33.337	102
180 min Summer	24.832	134
240 min Summer	20.006	168
360 min Summer	14.706	236
480 min Summer	11.818	306
600 min Summer	9.966	372
720 min Summer	8.665	438
960 min Summer	6.943	564
1440 min Summer	5.071	816
2160 min Summer	3.696	1204
2880 min Summer	2.949	1604
4320 min Summer	2.142	2468
5760 min Summer	1.705	3128
7200 min Summer	1.427	3696
8640 min Summer	1.235	4416
10080 min Summer	1.093	5144

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

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m^3)	Status
15 min Winter	14.393	0.993	43.5	506.9	O K
30 min Winter	14.601	1.201	63.9	655.6	Flood Risk
60 min Winter	14.767	1.367	82.3	785.6	Flood Risk
120 min Winter	14.844	1.444	96.0	848.6	Flood Risk
180 min Winter	14.854	1.454	97.7	857.0	Flood Risk
240 min Winter	14.840	1.440	95.4	845.9	Flood Risk
360 min Winter	14.797	1.397	87.8	810.1	Flood Risk
480 min Winter	14.751	1.351	79.4	772.6	Flood Risk
600 min Winter	14.704	1.304	71.8	735.5	Flood Risk
720 min Winter	14.655	1.255	65.9	697.0	Flood Risk
960 min Winter	14.559	1.159	62.0	624.7	O K
1440 min Winter	14.448	1.048	51.0	544.7	O K
2160 min Winter	14.354	0.954	37.8	480.9	O K
2880 min Winter	14.283	0.883	28.1	434.2	O K
4320 min Winter	13.870	0.470	22.7	197.9	O K
5760 min Winter	13.643	0.243	20.7	92.7	O K
7200 min Winter	13.597	0.197	17.6	73.5	O K
8640 min Winter	13.571	0.171	15.2	63.3	O K
10080 min Winter	13.554	0.154	13.5	56.4	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Winter	124.633	31
30 min Winter	83.789	42
60 min Winter	53.779	64
120 min Winter	33.337	104
180 min Winter	24.832	140
240 min Winter	20.006	176
360 min Winter	14.706	248
480 min Winter	11.818	320
600 min Winter	9.966	392
720 min Winter	8.665	462
960 min Winter	6.943	586
1440 min Winter	5.071	838
2160 min Winter	3.696	1244
2880 min Winter	2.949	1704
4320 min Winter	2.142	2524
5760 min Winter	1.705	3000
7200 min Winter	1.427	3680
8640 min Winter	1.235	4408
10080 min Winter	1.093	5144

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

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m^3)	Status
15 min Summer	16.277	0.477	9.9	400.8	O K
30 min Summer	16.417	0.617	9.9	538.1	O K
60 min Summer	16.555	0.755	9.9	683.9	O K
120 min Summer	16.684	0.884	9.9	828.0	O K
180 min Summer	16.749	0.949	10.1	903.4	Flood Risk
240 min Summer	16.786	0.986	10.3	947.8	Flood Risk
360 min Summer	16.828	1.028	10.5	998.1	Flood Risk
480 min Summer	16.848	1.048	10.6	1022.5	Flood Risk
600 min Summer	16.855	1.055	10.6	1031.4	Flood Risk
720 min Summer	16.854	1.054	10.6	1030.2	Flood Risk
960 min Summer	16.845	1.045	10.6	1019.4	Flood Risk
1440 min Summer	16.819	1.019	10.5	988.0	Flood Risk
2160 min Summer	16.772	0.972	10.2	931.5	Flood Risk
2880 min Summer	16.722	0.922	10.0	872.4	Flood Risk
4320 min Summer	16.622	0.822	9.9	758.1	O K
5760 min Summer	16.524	0.724	9.9	650.8	O K
7200 min Summer	16.428	0.628	9.9	549.4	O K
8640 min Summer	16.334	0.534	9.9	455.1	O K
10080 min Summer	16.244	0.444	9.9	369.2	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Summer	124.633	34
30 min Summer	83.789	48
60 min Summer	53.779	78
120 min Summer	33.337	136
180 min Summer	24.832	194
240 min Summer	20.006	252
360 min Summer	14.706	368
480 min Summer	11.818	486
600 min Summer	9.966	602
720 min Summer	8.665	714
960 min Summer	6.943	818
1440 min Summer	5.071	1070
2160 min Summer	3.696	1480
2880 min Summer	2.949	1888
4320 min Summer	2.142	2724
5760 min Summer	1.705	3520
7200 min Summer	1.427	4264
8640 min Summer	1.235	5016
10080 min Summer	1.093	5664

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

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m^3)	Status
15 min Winter	16.329	0.529	9.9	450.3	O K
30 min Winter	16.481	0.681	9.9	604.8	O K
60 min Winter	16.632	0.832	9.9	769.0	O K
120 min Winter	16.774	0.974	10.3	933.1	Flood Risk
180 min Winter	16.846	1.046	10.6	1020.4	Flood Risk
240 min Winter	16.889	1.089	10.8	1073.1	Flood Risk
360 min Winter	16.938	1.138	11.0	1135.5	Flood Risk
480 min Winter	16.964	1.164	11.1	1168.9	Flood Risk
600 min Winter	16.977	1.177	11.2	1184.7	Flood Risk
720 min Winter	16.980	1.180	11.2	1189.4	Flood Risk
960 min Winter	16.972	1.172	11.1	1179.0	Flood Risk
1440 min Winter	16.939	1.139	11.0	1136.0	Flood Risk
2160 min Winter	16.877	1.077	10.7	1058.7	Flood Risk
2880 min Winter	16.807	1.007	10.4	972.5	Flood Risk
4320 min Winter	16.661	0.861	9.9	801.6	O K
5760 min Winter	16.513	0.713	9.9	639.0	O K
7200 min Winter	16.359	0.559	9.9	479.7	O K
8640 min Winter	16.203	0.403	9.9	331.4	O K
10080 min Winter	16.093	0.293	9.9	232.8	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Winter	124.633	34
30 min Winter	83.789	48
60 min Winter	53.779	76
120 min Winter	33.337	134
180 min Winter	24.832	190
240 min Winter	20.006	248
360 min Winter	14.706	362
480 min Winter	11.818	476
600 min Winter	9.966	588
720 min Winter	8.665	698
960 min Winter	6.943	908
1440 min Winter	5.071	1132
2160 min Winter	3.696	1596
2880 min Winter	2.949	2052
4320 min Winter	2.142	2940
5760 min Winter	1.705	3760
7200 min Winter	1.427	4544
8640 min Winter	1.235	5128
10080 min Winter	1.093	5656

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time / Area Diagram

Total Area (ha) 1.772

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.354	4-8	0.354	8-12	0.354	12-16	0.355	16-20	0.355

Model Details

Storage is Online Cover Level (m) 17.000

Tank or Pond Structure

Invert Level (m) 15.800

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	725.0	1.200	1300.0

Hydro-Brake® Outflow Control

Design Head (m) 1.200 Diameter (mm) 134
Design Flow (l/s) 11.3 Invert Level (m) 15.800
Hydro-Brake® Type Md6 SW Only

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.4	1.200	11.3	3.000	17.7	7.000	27.1
0.200	9.1	1.400	12.1	3.500	19.2	7.500	28.1
0.300	9.9	1.600	13.0	4.000	20.5	8.000	29.0
0.400	9.6	1.800	13.7	4.500	21.7	8.500	29.9
0.500	9.2	2.000	14.5	5.000	22.9	9.000	30.7
0.600	9.1	2.200	15.2	5.500	24.0	9.500	31.6
0.800	9.5	2.400	15.9	6.000	25.1		
1.000	10.4	2.600	16.5	6.500	26.1		

Summary of Results for 100 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m^3)	Status
15 min Summer	14.096	0.696	22.7	319.9	O K
30 min Summer	14.269	0.869	26.5	425.3	O K
60 min Summer	14.396	0.996	43.9	509.1	O K
120 min Summer	14.457	1.057	52.2	550.9	O K
180 min Summer	14.470	1.070	53.8	560.3	O K
240 min Summer	14.467	1.067	53.5	558.5	O K
360 min Summer	14.448	1.048	51.1	545.2	O K
480 min Summer	14.426	1.026	48.1	529.2	O K
600 min Summer	14.403	1.003	44.9	513.4	O K
720 min Summer	14.381	0.981	41.7	498.7	O K
960 min Summer	14.342	0.942	36.1	472.7	O K
1440 min Summer	14.273	0.873	26.9	427.9	O K
2160 min Summer	14.133	0.733	22.7	341.4	O K
2880 min Summer	13.965	0.565	22.7	246.9	O K
4320 min Summer	13.704	0.304	22.6	119.2	O K
5760 min Summer	13.627	0.227	19.8	86.2	O K
7200 min Summer	13.591	0.191	17.1	71.3	O K
8640 min Summer	13.568	0.168	14.9	62.1	O K
10080 min Summer	13.552	0.152	13.3	55.7	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Summer	89.024	32
30 min Summer	59.849	45
60 min Summer	38.413	66
120 min Summer	23.812	104
180 min Summer	17.737	136
240 min Summer	14.290	170
360 min Summer	10.505	238
480 min Summer	8.441	308
600 min Summer	7.118	376
720 min Summer	6.190	444
960 min Summer	4.959	584
1440 min Summer	3.622	866
2160 min Summer	2.640	1284
2880 min Summer	2.107	1652
4320 min Summer	1.530	2260
5760 min Summer	1.218	2952
7200 min Summer	1.019	3680
8640 min Summer	0.882	4408
10080 min Summer	0.781	5136

Summary of Results for 100 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Winter	14.166	0.766	22.7	361.1	O K
30 min Winter	14.345	0.945	36.5	474.9	O K
60 min Winter	14.479	1.079	54.9	566.7	O K
120 min Winter	14.547	1.147	61.2	615.6	O K
180 min Winter	14.557	1.157	61.9	623.3	O K
240 min Winter	14.547	1.147	61.2	616.0	O K
360 min Winter	14.512	1.112	58.3	590.1	O K
480 min Winter	14.475	1.075	54.4	563.6	O K
600 min Winter	14.441	1.041	50.1	539.9	O K
720 min Winter	14.411	1.011	46.1	519.3	O K
960 min Winter	14.361	0.961	38.8	485.3	O K
1440 min Winter	14.276	0.876	27.3	429.6	O K
2160 min Winter	14.054	0.654	22.7	295.6	O K
2880 min Winter	13.752	0.352	22.7	140.9	O K
4320 min Winter	13.610	0.210	18.6	78.9	O K
5760 min Winter	13.569	0.169	15.0	62.2	O K
7200 min Winter	13.545	0.145	12.6	53.0	O K
8640 min Winter	13.530	0.130	10.9	46.9	O K
10080 min Winter	13.518	0.118	9.6	42.7	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Winter	89.024	32
30 min Winter	59.849	44
60 min Winter	38.413	66
120 min Winter	23.812	106
180 min Winter	17.737	142
240 min Winter	14.290	180
360 min Winter	10.505	252
480 min Winter	8.441	324
600 min Winter	7.118	394
720 min Winter	6.190	464
960 min Winter	4.959	608
1440 min Winter	3.622	916
2160 min Winter	2.640	1364
2880 min Winter	2.107	1624
4320 min Winter	1.530	2248
5760 min Winter	1.218	2944
7200 min Winter	1.019	3672
8640 min Winter	0.882	4408
10080 min Winter	0.781	5144

Summary of Results for 100 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m^3)	Status
15 min Summer	16.150	0.350	9.9	283.4	O K
30 min Summer	16.255	0.455	9.9	379.9	O K
60 min Summer	16.361	0.561	9.9	481.8	O K
120 min Summer	16.458	0.658	9.9	580.5	O K
180 min Summer	16.505	0.705	9.9	629.9	O K
240 min Summer	16.530	0.730	9.9	657.1	O K
360 min Summer	16.555	0.755	9.9	683.9	O K
480 min Summer	16.563	0.763	9.9	692.4	O K
600 min Summer	16.561	0.761	9.9	690.7	O K
720 min Summer	16.558	0.758	9.9	686.8	O K
960 min Summer	16.547	0.747	9.9	674.8	O K
1440 min Summer	16.517	0.717	9.9	642.7	O K
2160 min Summer	16.463	0.663	9.9	586.4	O K
2880 min Summer	16.408	0.608	9.9	529.0	O K
4320 min Summer	16.296	0.496	9.9	418.8	O K
5760 min Summer	16.194	0.394	9.9	322.5	O K
7200 min Summer	16.114	0.314	9.9	251.1	O K
8640 min Summer	16.058	0.258	9.8	203.3	O K
10080 min Summer	16.022	0.222	9.5	172.4	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Summer	89.024	33
30 min Summer	59.849	48
60 min Summer	38.413	76
120 min Summer	23.812	134
180 min Summer	17.737	192
240 min Summer	14.290	250
360 min Summer	10.505	366
480 min Summer	8.441	482
600 min Summer	7.118	564
720 min Summer	6.190	618
960 min Summer	4.959	742
1440 min Summer	3.622	1006
2160 min Summer	2.640	1416
2880 min Summer	2.107	1824
4320 min Summer	1.530	2600
5760 min Summer	1.218	3296
7200 min Summer	1.019	3968
8640 min Summer	0.882	4600
10080 min Summer	0.781	5264

Summary of Results for 100 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Winter	16.189	0.389	9.9	318.6	O K
30 min Winter	16.305	0.505	9.9	427.5	O K
60 min Winter	16.421	0.621	9.9	542.7	O K
120 min Winter	16.529	0.729	9.9	655.3	O K
180 min Winter	16.582	0.782	9.9	712.9	O K
240 min Winter	16.611	0.811	9.9	745.8	O K
360 min Winter	16.642	0.842	9.9	780.6	O K
480 min Winter	16.655	0.855	9.9	795.0	O K
600 min Winter	16.657	0.857	9.9	797.2	O K
720 min Winter	16.652	0.852	9.9	792.1	O K
960 min Winter	16.635	0.835	9.9	772.8	O K
1440 min Winter	16.596	0.796	9.9	729.3	O K
2160 min Winter	16.521	0.721	9.9	646.9	O K
2880 min Winter	16.437	0.637	9.9	559.5	O K
4320 min Winter	16.263	0.463	9.9	386.9	O K
5760 min Winter	16.114	0.314	9.9	251.6	O K
7200 min Winter	16.029	0.229	9.6	179.0	O K
8640 min Winter	15.989	0.189	8.8	145.9	O K
10080 min Winter	15.967	0.167	7.9	127.4	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Winter	89.024	33
30 min Winter	59.849	47
60 min Winter	38.413	76
120 min Winter	23.812	132
180 min Winter	17.737	188
240 min Winter	14.290	246
360 min Winter	10.505	360
480 min Winter	8.441	472
600 min Winter	7.118	582
720 min Winter	6.190	686
960 min Winter	4.959	784
1440 min Winter	3.622	1086
2160 min Winter	2.640	1544
2880 min Winter	2.107	1976
4320 min Winter	1.530	2764
5760 min Winter	1.218	3400
7200 min Winter	1.019	3968
8640 min Winter	0.882	4592
10080 min Winter	0.781	5256

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time / Area Diagram

Total Area (ha) 1.772

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.354	4-8	0.354	8-12	0.354	12-16	0.355	16-20	0.355

Model Details

Storage is Online Cover Level (m) 17.000

Tank or Pond Structure

Invert Level (m) 15.800

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	725.0	1.200	1300.0

Hydro-Brake® Outflow Control

Design Head (m) 1.200 Diameter (mm) 134
Design Flow (l/s) 11.3 Invert Level (m) 15.800
Hydro-Brake® Type Md6 SW Only

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.4	1.200	11.3	3.000	17.7	7.000	27.1
0.200	9.1	1.400	12.1	3.500	19.2	7.500	28.1
0.300	9.9	1.600	13.0	4.000	20.5	8.000	29.0
0.400	9.6	1.800	13.7	4.500	21.7	8.500	29.9
0.500	9.2	2.000	14.5	5.000	22.9	9.000	30.7
0.600	9.1	2.200	15.2	5.500	24.0	9.500	31.6
0.800	9.5	2.400	15.9	6.000	25.1		
1.000	10.4	2.600	16.5	6.500	26.1		

APPENDIX I
INDICATIVE SURFACE WATER DRAINAGE STRATEGY