

Flood Risk Assessment

for

**Proposed Residential Development
Holybourne Road
Leigh Park
Havant
Hampshire**

Client:

PMC Construction and Development
Services Ltd
106 Queens Road
Portsmouth
PO2 7NE

ISSUE		A	B
Issued By	A Rushby		
Date	April 2016		
Purpose	Information		
Approved By	AWR		

Project No: **PMC 239**

CONTENTS

- 1.0 Introduction
- 2.0 Data Sources
- 3.0 Requirements for a Flood Risk Assessment
- 4.0 Site Details
- 5.0 Site Flood Risk Assessment
- 6.0 Conclusion

Appendix: 1

- Site Location Plan
- Architect's Site Plan
- Topographical Survey

Appendix: 2

- Environment Agency Flood Maps

Appendix: 3

- Extract from Havant borough Council Draft
Local Plan (Allocations) : Flood Risk Assessment

Appendix: 4

- Southern Water Sewer Records

Introduction

- 1.1 Rushby Brewster Associates have been commissioned by PMC Construction Ltd to undertake a Flood Risk Assessment for this site in accordance with the requirements contained in 'Code for Sustainable Homes'.
- 1.2 The report addresses the relevant general issues of the National Planning Policy Framework 2012.

2.0 Data Sources

2.1 Environment Agency Flood Map.

An EA Flood map for the site was obtained from the EA web site and is included in Appendix 2.

2.2 Strategic Flood Risk Assessment.

PUSH / Atkins Strategic Flood Risk Assessment was accessed via their website to review detailed mapping information where appropriate.

2.3 Havant Borough Council Local Draft Plans (Allocations) Flood Risk Assessment (Nov 12).

This document identifies the site as allocated for development, and being located within Flood Zone 1.

3.0 Requirements for a Flood Risk Assessment

The National Planning Policy Framework 2012 and Technical Guidance documents published by the Department for Communities and Local Government set out policies for flood risk management and detail the criteria for the content of a FRA report. The requirements of this document and of the EA are detailed below.

3.1 National Planning Policy Framework 2012

Table 1 in Technical Guidance to the National Planning Policy Framework defines Flood Zones as follows:-

Zone 1 Low Probability

Definition

This zone comprises land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%).

(Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)

Appropriate uses

All uses of land are appropriate in this zone.

Flood risk assessment requirements

For development proposals on sites comprising one hectare or above the vulnerability to flooding from other sources as well as from river and sea flooding, and the potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off, should be incorporated in a flood risk assessment. This need only be brief unless the factors above or other local considerations require particular attention.

Zone 2 Medium Probability**Definition**

This zone comprises land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% - 0.1%) in any year. (Land shown in light blue on the Flood Map).

Appropriate uses

Essential infrastructure and the water-compatible, less vulnerable and more vulnerable uses, as set out in table 2, are appropriate in this zone. The highly vulnerable uses are only appropriate in this zone if the Exception Test is passed.

Flood risk assessment requirements

All development proposals in this zone should be accompanied by a flood risk assessment.

Zone 3a High Probability**Definition**

This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.

(Land shown in dark blue on the Flood Map)

Appropriate uses

The water-compatible and less vulnerable uses of land (table 2) are appropriate in this zone. The highly vulnerable uses should not be permitted in this zone. The more vulnerable uses and essential infrastructure should only be permitted in this zone if the Exception Test is passed. Essential infrastructure permitted in this zone should be designed and constructed to remain operational and safe for users in times of flood.

Flood risk assessment requirements

All development proposals in this zone should be accompanied by a flood risk assessment.

Zone 3b The Functional Floodplain

Definition

This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. But land which would flood with an annual probability of 1 in 20 (5%) or greater in any year, or is designed to flood in an extreme (0.1%) flood, should provide a starting point for consideration and discussions to identify the functional floodplain.

(Not separately distinguished from Zone 3a on the Flood Map)

Appropriate uses

Only the water-compatible uses and the essential infrastructure listed in table 2 that has to be there should be permitted in this zone. It should be designed and constructed to: remain operational and safe for users in times of flood; result in no net loss of floodplain storage; not impede water flows; and not increase flood risk elsewhere. Essential infrastructure in this zone should pass the Exception Test.

Flood risk assessment requirements

All development proposals in this zone should be accompanied by a flood risk assessment.

- 3.2 Table 2 in Technical Guidance to the National Planning Policy Framework defines the Flood Risk Vulnerability groups as follows.**

Essential infrastructure

- Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk.
- Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood.
- Wind turbines.

Highly vulnerable

- Police stations, ambulance stations and fire stations and command centres and telecommunications installations required to be operational during flooding.
- Emergency dispersal points.

- Basement dwellings.
- Caravans, mobile homes and park homes intended for permanent residential uses.
- Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as "essential infrastructure").

More vulnerable

- Hospitals.
- Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.
- Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels.
- Non-residential uses for health services, nurseries and educational establishments.
- Landfill and sites used for waste management facilities for hazardous waste.
- Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan. 7

Less vulnerable

- Police, ambulance and fire stations which are not required to be operational during flooding.
- Buildings used for shops, financial, professional and other services, restaurants and cafes, hot food takeaways, offices, general industry, storage and distribution, non-residential institutions not included in "more vulnerable", and assembly and leisure.
- Land and buildings used for agriculture and forestry.
- Waste treatment (except landfill and hazardous waste facilities).
- Minerals working and processing (except for sand and gravel working).
- Water treatment works which do not need to remain operational during times of flood.
- Sewage treatment works (if adequate measures to control pollution and manage sewage during flooding events are in place).

Water-compatible development

- Flood control infrastructure.
- Water transmission infrastructure and pumping stations.
- Sewage transmission infrastructure and pumping stations.
- Sand and gravel working.
- Docks, marinas and wharves.
- Navigation facilities.
- Ministry of Defence defence installations.

- Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.
- Water-based recreation (excluding sleeping accommodation).
- Lifeguard and coastguard stations.
- Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.
- Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

3.3 Table 3: Flood risk vulnerability and flood zone 'compatibility'

Table 3: Flood risk vulnerability and flood zone 'compatibility'

Flood risk vulnerability classification (see table 2)		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood zone (see table 1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	×	Exception Test required	✓
	Zone 3b functional floodplain	Exception Test required	✓	×	×	×

Key: ✓ Development is appropriate.
 × Development should not be permitted.

3.4 Environment Agency Guidelines

In addition to the National Planning Policy Framework the EA has produced Standing Advice and Guidance on development and FRAs which aim to outline the requirements for a FRA according to the nature of the development and the site location in relation to the Flood Zones. The following extract from the EA guidance sets out these FRA requirements.

When you need an assessment

You need to do a flood risk assessment for most developments within one of the flood zones.

This includes developments:

- in flood zone 2 or 3 including minor development and change of use

- more than 1 hectare (ha) in flood zone 1
- less than 1 ha in flood zone 1, including a change of use in development type to a more vulnerable class (e.g. from commercial to residential), where they could be affected by sources of flooding other than rivers and the sea (eg, surface water drains, reservoirs)
- in an area within flood zone 1 which has critical drainage problems as notified by the Environment Agency

When you don't need an assessment

You don't need to do a flood risk assessment for a development that's less than 1 ha in flood zone 1 unless it could be affected by sources of flooding other than rivers and the sea, e.g. surface water drains.

When to follow standing advice

You should follow the Environment Agency's standing advice if you're carrying out a flood risk assessment of a development classed as:

- a minor extension (household extensions or non-domestic extensions less than 250 square metres) in flood zone 2 or 3
- 'more vulnerable' in flood zone 2 (except for landfill or waste facility sites, caravan or camping sites)
- 'less vulnerable' in flood zone 2 (except for agriculture and forestry, waste treatment, mineral processing, and water and sewage treatment)
- 'water compatible' in flood zone 2

You also need to follow standing advice for developments involving a change of use into one of these vulnerable categories or into the water compatible category.

4.0 Site Details

4.1 Site Location and Description

The site is located to the east of Holybourne Road in a predominantly residential area of Havant, neighbouring Trosant Junior School.

The site is irregular in plan and covers an area of approximately 0.29ha. of open flat grassland. The northern boundary of the site is denoted by the fences and hedges of neighbouring residential properties. The eastern edge of the site is defined by the wall to a neighbouring residential property and a line of vegetation. The southern site boundary is marked by a number of tall conifers and fence line. The western site limit meets a pedestrian footpath, fence line to the sports ground of the neighbouring school lying further to the west and a low post and rail fence separating the site from Holybourne Road.

4.2 Existing Site Topography and Drainage

Refer to the Hampshire Land Surveys Ltd drawing in the Appendix.

Site topography is relatively flat with a gradual fall from the north toward the south west at the frontage with Holybourne Road.

There is currently no known foul or surface water drainage on the site. A 225mm diameter public foul sewer is located within Holybourne Road adjacent to No 15 and a 225mm diameter storm water sewer at the end of Holybourne Road adjacent to the site entrance. These are shown on the Southern Water Sewer Plan in the Appendix.

Enquiries with the Environment Agency has confirmed that to the southern boundary of the site there is a 1400mm diameter culvert which is designated by the EA as a 'main river' and which has a depth of approximately 4.5m to invert from ground level at this location.

4.3 Ground Conditions

Reference to the British Geological Survey (BGS) Map (Sheet 315, Southampton, Scale 1:50,000) indicates the site to directly overlie superficial geology of River Terrace Deposits (sand, silt and clay) and the London Clay Formation (clay, silt and sand).

4.4 Environment Agency Data

The Environment Agency Ground Water Vulnerability map indicates that the site is underlain by superficial Secondary Aquifer.

The site lies within water source protection zone (SPZ), recorded as 1C-Inner Catchment within a confined aquifer.

5.0 Site Flood Risk Assessment

Review of the Environment Agency flood maps and the PUSH / Atkins Strategic Flood Risk Assessment has been completed and summarised below.

5.1 Environment Agency Flood Zone

The site lies within Flood Zone 1 (see Appendix 2 for EA Flood Map). This zone comprises land assessed as having a low (less than 1 in 1,000) annual probability of river or sea flooding.

5.2 Tidal Flood Risk

The Environment Agency Flood Map and the PUSH/Atkins SFRA data indicate that the site does not lie within an area at risk from tidal flooding.

5.3 Fluvial Flood Risk

The Environment Agency Flood Map and the PUSH/Atkins SFRA data indicate that the site lies within Flood Zone 1 and has low probability of fluvial flooding.

5.4 Surface Water Flooding

The Environment Agency and PUSH/Atkins SFRA data indicates that the site lies within a zone of low risk of surface water flooding.

The Environment Agency designated 'main river' to the south of the site linking Hermitage Stream and the River Lavant is culverted underground and is therefore unlikely to be a risk.

5.5 Ground Water Flood Risk

The PUSH/Atkins SFRA data indicates that the site lies within an area of low bedrock permeability. There are however no records shown of historic ground water flooding in the vicinity of the site.

5.6 Flooding From Sewers

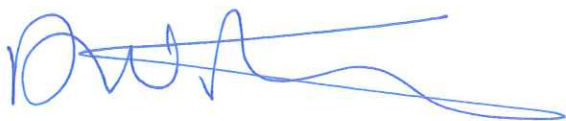
The PUSH/Atkins SFRA data indicates that there are no recorded sewer flooding incidents within the near vicinity of the site.

5.7 Flooding from Reservoirs, Canals and other Artificial Sources

The EA and PUSH/Atkins SFRA data indicates that there are no reported incidents of reservoir, canal or other artificial sources flooding affecting the site in its vicinity.

6.0 Conclusion

This FRA has assessed flood risk at the development site and has demonstrated that it lies within Flood Zone 1 with a low risk of flooding from other sources as outlined above. The development surface water drainage proposals will incorporate SUDs measures to mitigate any increase in run-off from the site.



Allen Rushby IEng, AMIStructE
For and on behalf of Rushby Brewster

APPENDIX 1

Site Location Plan

Architect's Site Plan

Topographical Survey

Google Maps



Imagery ©2016 DigitalGlobe, Getmapping plc, Infoterra Ltd & Bluesky, Map data ©2016 Google

20 m

Google Maps

GENERAL NOTES:
 1. This drawing is to be read in conjunction with all relevant architects, structural engineers, mechanical & electrical engineers and specialists drawings / specifications.
 2. Any discrepancies in dimensions or details between the various drawings should be reported immediately.
 3. All dimensions are in millimetres and all levels are in metres.
 4. Do not scale from this drawing, if in doubt ASK

Rev.	Description	Date	Dim	Ch'd
A	Parking amended.	06.16	RL	DK

SCHEDULE OF ACCOMMODATION

5	no. 3B/6P Houses @ 108m²
2	no. 2B/4P Flats @ 71.8m²
4	no. 1B/2P Flats @ 52.5-57.8m²
11	no. Units Total

PARKING

10	no. Allocated parking spaces
12	no. Unallocated parking spaces
22	no. Total spaces



© Crown Copyright 2016. All rights reserved. Promap licence number 100022432

SITE LOCATION PLAN SCALE 1:1250



CONCEPT HOUSE, 35 KINGSTON CRESCENT, NORTH END, PORTSMOUTH, HAMPSHIRE, PO2 8AA
 T: 023 9267 3618 F: 023 9267 9819 www.kscolltd.co.uk info@kscolltd.co.uk

PROJECT
HOLYBOURNE ROAD

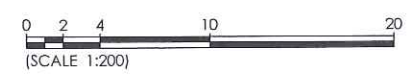
DRAWING TITLE
SITE PLAN

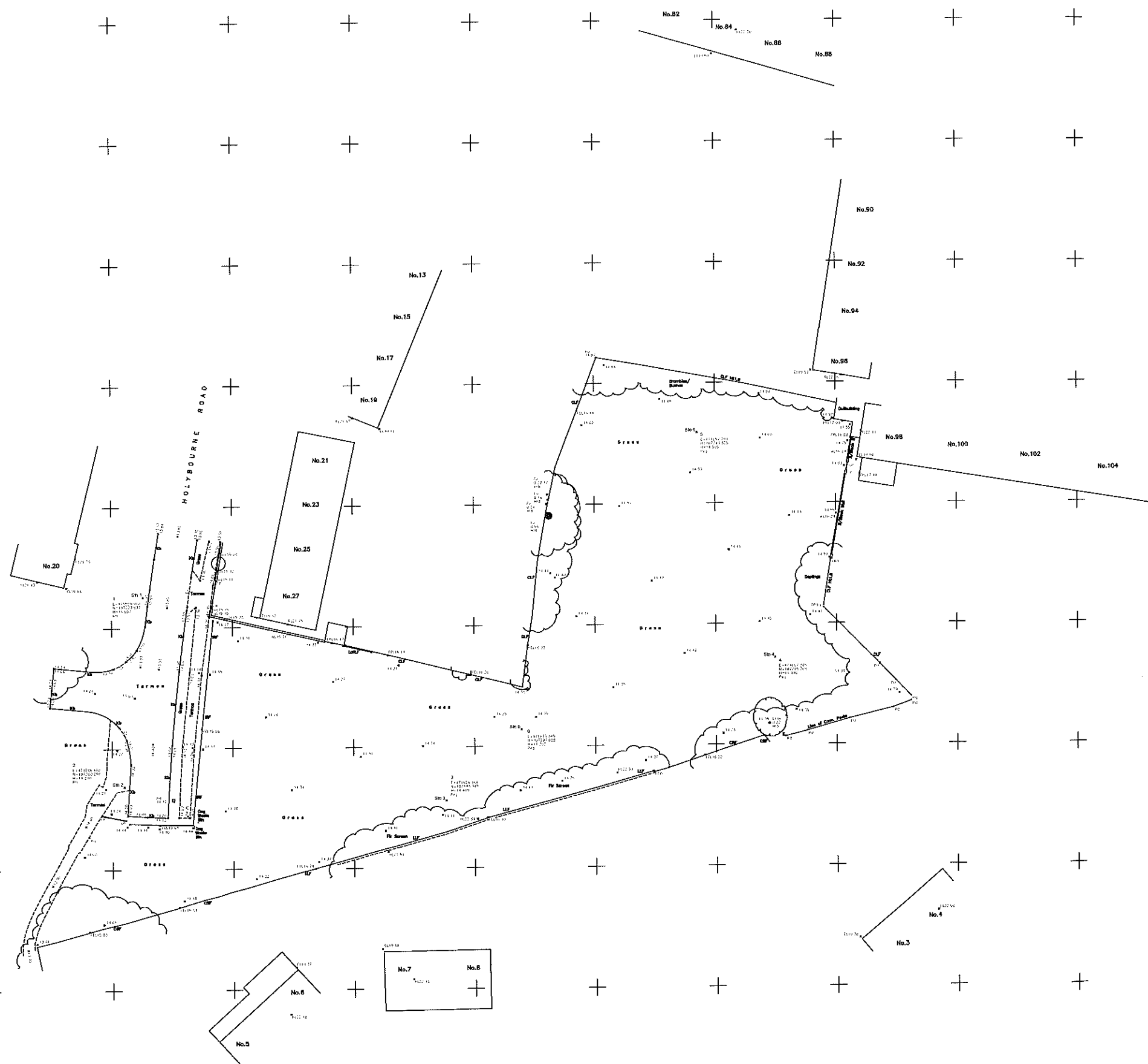
Date	Drawn by	Scale	Drawing No.	Rev.
JAN. 15	PJ/RL	1:200	A1	1103-PD101
				A

architecture planning design project management



Site Plan 1:200





NOTES

DO NOT SCALE FROM DRAWING
ALL DIMENSIONS TO BE CHECKED ON SITE

NOTES:

ALL MEASUREMENTS ARE TAKEN TO EXISTING
SURFACE FINISHES UNLESS STATED OTHERWISE

ALL HEIGHTS ARE IN M

ALL ARROWS POINT UP

ALL LEVELS IN METRES AND RELATE TO
GPS CONTROL (00)

Legend			
AL	Alaska	LA	Louisiana
AR	Arkansas	LI	Liechtenstein
CA	California	LU	Luxembourg
CO	Colorado	LV	Latvia
CT	Connecticut	LY	Libya
DE	Delaware	MA	Malaysia
FL	Florida	MC	Monaco
GA	Georgia	MD	Moldova
HI	Hawaii	ME	Montenegro
IL	Illinois	MI	Michigan
IN	Indiana	ML	Maldives
IO	Indian Ocean	MM	Myanmar
IS	Iceland	MP	Morocco
IT	Italy	MS	Malta
JE	Jersey	MT	Montenegro
JP	Japan	NA	Norway
KE	Kenya	NE	Netherlands
KH	Korea	NI	Nicaragua
KR	Korea	NL	Netherlands
KG	Kyrgyzstan	NO	Norway
LA	Laos	NU	Niue
LB	Lebanon	OM	Oman
LC	Liechtenstein	PA	Panama
LI	Liechtenstein	PE	Peru
LU	Luxembourg	PG	Papua New Guinea
LV	Latvia	PH	Philippines
LY	Libya	PK	Pakistan
MA	Malaysia	PL	Poland
MC	Monaco	PM	Puerto Rico
MD	Moldova	PT	Portugal
ME	Montenegro	QA	Qatar
MI	Michigan	RO	Romania
ML	Maldives	RS	Russia
MM	Myanmar	RU	Russia
MP	Morocco	SA	Saudi Arabia
MS	Malta	SC	Seychelles
MT	Malta	SD	Sudan
NA	Norway	SG	Singapore
NE	Netherlands	SI	Slovenia
NI	Nicaragua	SK	Slovakia
NL	Netherlands	SL	Sierra Leone
NO	Norway	SN	Senegal
NU	Niue	SR	Suriname
OM	Oman	SV	Sweden
PA	Panama	SW	Switzerland
PE	Peru	SY	Syria
PG	Papua New Guinea	TH	Thailand
PH	Philippines	TM	Turkmenistan
PK	Pakistan	TR	Turkey
PL	Poland	TV	Tuvalu
PM	Puerto Rico	UA	Ukraine
PT	Portugal	UG	Uganda
QA	Qatar	US	United States
RO	Romania	UY	Uruguay
RS	Russia	UZ	Uzbekistan
RU	Russia	VA	Vatican
SA	Saudi Arabia	VC	St. Vincent
SC	Seychelles	VE	Venezuela
SD	Sudan	VG	Virgin Islands
SG	Singapore	VI	Virgin Islands
SI	Slovenia	VM	Vanuatu
SK	Slovakia	WL	Wallis
SL	Sierra Leone		
SN	Senegal		
SR	Suriname		
SV	Sweden		
SW	Switzerland		
SY	Syria		
TH	Thailand		
TM	Turkmenistan		
TR	Turkey		
TV	Tuvalu		
UA	Ukraine		
UG	Uganda		
US	United States		
UY	Uruguay		
UZ	Uzbekistan		
VA	Vatican		
VC	St. Vincent		
VE	Venezuela		
VG	Virgin Islands		
VI	Virgin Islands		
VM	Vanuatu		
WL	Wallis		

[illegible]

DATE	REVISIONS
------	-----------

HAMPSHIRE LAND SURVEYS LTD
Land, Building and Engineering Surveys

MEL MOXSE
BUTLEY HILLS
BUTLEY
SOKKHAMPTON
HAMPSPRE 3030 200

Tel. 31498 790012
Mobile 07721 423333
E-Mail hampsp@bt.com
www.H55hd.com/d

CLIENT Portsmouth City Council
Housing & Property Services
Civic Offices
Guildhall Square
Portsmouth PO1 2AX

PROJECT No. HLS 1777

TITLE
Holybourne Road
Havant, PO9 2BN
Site Survey Existing

SCALE	1:200
DATE	February 2015

DRO No. 1777_15_02_01

APPENDIX 2

Environment Agency Flood Maps



Enter a postcode or place name:

Other topics for this area...

Flood Map for Planning (Rivers and Sea)

Go

Flood Map for Planning (Rivers and Sea)

☐

Map legend

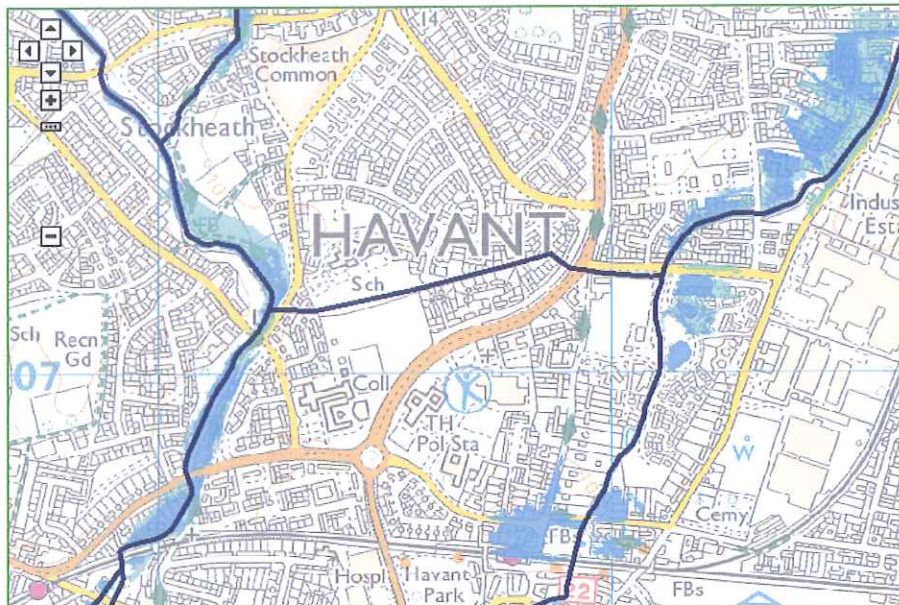
X: 471,664;Y: 107,143 at scale 1:10,000

[Other maps](#)[Data search](#)[Text only version](#)

Click on the map to see what Flood Zone (National Planning Policy Guidance definitions) the proposed development is in.

☒ Flood Map for Planning (Rivers and Sea) [i](#)

- ☒ Flood Zone 3
- ☒ Flood Zone 2
- ☒ Flood defences (Not all may be shown*)
- ☒ Areas benefiting from flood defences (Not all may be shown*)
- ☒ Main River Line [i](#)
- ☒ Main River Line
- ☒ Other national environmental organisations [i](#)
- ☒ Natural Resources Wales Area of responsibility
- ☒ Scottish Environment Protection Agency Area of responsibility



Customers in Wales - From 1 April 2013 Natural Resources Wales (NRW) has taken over the responsibilities of the Environment Agency in Wales.
© Environment Agency copyright and database rights 2016. © Ordnance Survey Crown copyright. All rights reserved. Environment Agency, 100026380
Contains Royal Mail data © Royal Mail copyright and database right 2016
This service is designed to inform members of the public, in line with our terms and conditions. For business or commercial use, please contact us.

More about flooding:

Understanding the Flood Map for Planning (Rivers and Sea)

A more detailed explanation to help you understand the flood map shown above.

Current flood warnings

We provide flood warnings online 24 hours a day. Find out the current flood warning status in your local area.

* **Legend Information:** Flood defences and the areas benefiting from them are gradually being added through updates. Please contact your local environment agency office for further details.

creating a better place

Follow us: [YouTube](#) [Twitter](#) [Flickr](#) [Facebook](#)Author: Environment Agency | wiybysupport@environment-agency.gov.uk
Last updated: 18th March 2016[Privacy policy](#) | [Terms and conditions](#) | [Contact us](#)
© Environment Agency 2016



Enter a postcode or place name:

Other topics for this area...

Go

Risk of Flooding from Rivers and Sea

View other Interactive Maps

Risk of Flooding from Rivers and Sea

River flooding happens when a river cannot cope with the amount of water draining into it from the surrounding land. Sea flooding happens when there are high tides and stormy conditions.

The shading on the map shows the risk of flooding from rivers and the sea in this particular area.

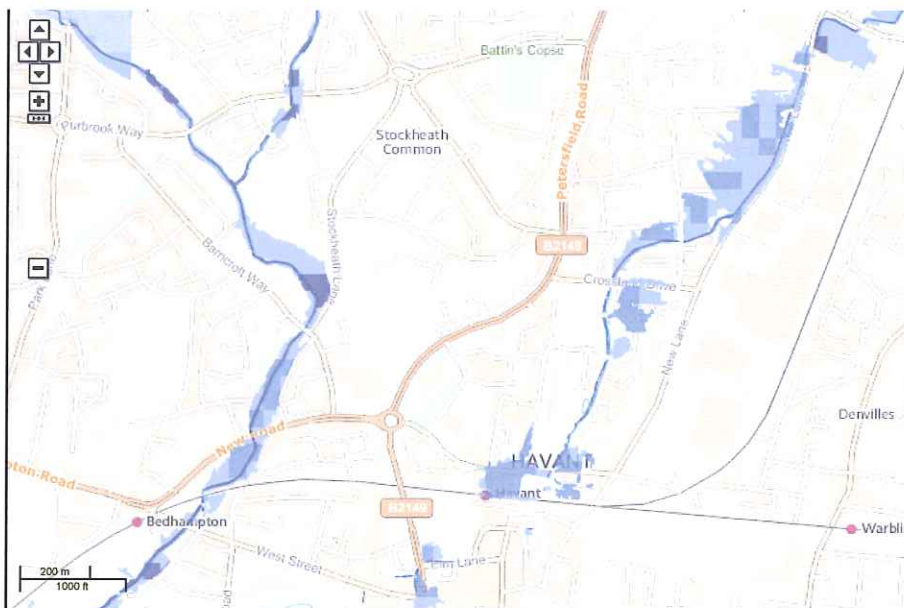
Click on the map for a more detailed explanation.

Map of X: 471,664; Y: 107,142 at scale 1:10,000

Data search

Map legend

- ☒ Risk of Flooding from Rivers and Sea
 - High
 - Medium
 - Low
 - Very Low
- ☒ Other national environmental organisations
 - Natural Resources Wales Area of responsibility
 - Scottish Environment Protection Agency Area of responsibility



Customers in Wales - From 1 April 2013 Natural Resources Wales (NRW) will take over the responsibilities of the Environment Agency in Wales.
 © Environment Agency copyright and database rights 2016. © Ordnance Survey Crown copyright. All rights reserved. Environment Agency, 100026380.
 Contains Royal Mail data © Royal Mail copyright and database right 2016.
 This service is designed to inform members of the public, in line with our terms and conditions. For business or commercial use, please contact us.

creating a better place

Follow us: [YouTube](#) [Twitter](#) [Flickr](#) [Facebook](#)

Author: The Environment Agency | enquiries@environment-agency.gov.uk
 Last updated: 18 April 2016

[Privacy policy](#) | [Terms and conditions](#) | [Contact us](#) | [Cymraeg](#)
 © Environment Agency 2016



Enter a postcode or place name:

Other topics for this area...



Risk of Flooding from Surface Water

[View other Interactive Maps](#)

Risk of Flooding from Surface Water

Surface water flooding happens when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead.

The shading on the map shows the risk of flooding from surface water in this particular area.

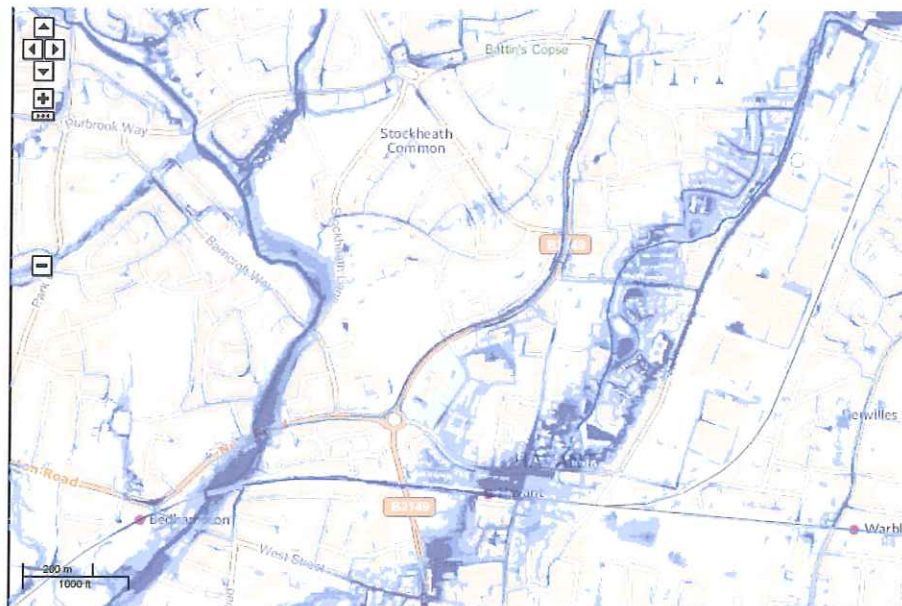
Click on the map for a more detailed explanation.

Map of X: 471,664; Y: 107,142 at scale 1:10,000

[Data search](#)

Map legend

- ☒ Risk of Flooding from Surface Water
 - High
 - Medium
 - Low
 - Very Low
- ☒ Other national environmental organisations
 - Natural Resources Wales Area of responsibility
 - Scottish Environment Protection Agency Area of responsibility



Customers in Wales - From 1 April 2013 Natural Resources Wales (NRW) will take over the responsibilities of the Environment Agency in Wales.
© Environment Agency copyright and database rights 2016. © Ordnance Survey Crown copyright. All rights reserved. Environment Agency, 100026380.
Contains Royal Mail data © Royal Mail copyright and database right 2016.
This service is designed to inform members of the public, in line with our terms and conditions. For business or commercial use, please contact us.

creating a better place

Follow us: [YouTube](#) [Twitter](#) [Flickr](#) [Facebook](#)

Author: The Environment Agency | enquiries@environment-agency.gov.uk
Last updated: 18 April 2016

[Privacy policy](#) | [Terms and conditions](#) | [Contact us](#) | [Cymraeg](#)
© Environment Agency 2016



Enter a postcode or place name:

Other topics for this area...



Risk of Flooding from Reservoirs

[View other Interactive Maps](#)

Risk of Flooding from Reservoirs

Reservoir flooding is extremely unlikely to happen.

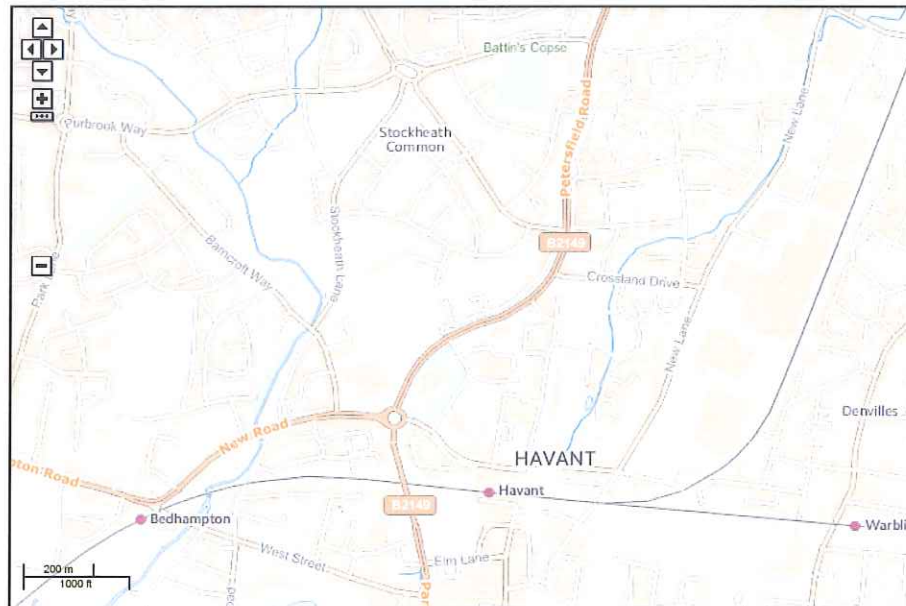
The shading on the map shows the area that could be flooded if a large reservoir were to fail and release the water it holds. A large reservoir is one that holds over 25,000 cubic metres of water, equivalent to approximately 10 Olympic sized swimming pools. Since this is a worst case scenario, it's unlikely that any actual flood would be this large.

Click on the shading to see details of reservoirs that could cause flooding in this area.

Map legend

- ☒ Risk of Flooding from Reservoirs
- ☐ Maximum extent of flooding
- ☒ Other national environmental organisations
- ☐ Natural Resources Wales Area of responsibility
- ☐ Scottish Environment Protection Agency Area of responsibility

Map of X: 471,664; Y: 107,142 at scale 1:10,000

[Data search](#)

Customers in Wales - From 1 April 2013 Natural Resources Wales (NRW) will take over the responsibilities of the Environment Agency in Wales.
© Environment Agency copyright and database rights 2016. © Ordnance Survey Crown copyright. All rights reserved. Environment Agency, 100026380.
Contains Royal Mail data © Royal Mail copyright and database right 2016.
This service is designed to inform members of the public, in line with our [terms and conditions](#). For business or commercial use, please contact us.

creating a better placeFollow us: [YouTube](#) [Twitter](#) [Flickr](#) [Facebook](#)Author: The Environment Agency | enquiries@environment-agency.gov.uk
Last updated: 18 April 2016[Privacy policy](#) | [Terms and conditions](#) | [Contact us](#) | [Cymraeg](#)
© Environment Agency 2016

APPENDIX 3

Extract from Havant Borough Council Draft

Local Plan (Allocations) : Flood Risk Assessment

**Havant Borough Draft Local Plan
(Allocations)**

**FLOOD RISK
ASSESSMENT
NOVEMBER 2012**

Cleaner, Safer,
More Prosperous



Hayling Island

HY45 Beachlands

- The area adjacent to the site is at risk of coastal flooding, is in Flood Zone 3 and is likely to be affected by wave action
- Much of the site is within PUSH SFRA 2115 Tidal Flood Zone 2. There will be a requirement to demonstrate that the development is safe in flood risk terms over its full lifetime.

Leigh Park

L83 Riders Lane Allotments

- This site is located next to the Hermitage Stream and the western section of the site is in Flood Zones 2 and 3. Part of the site is within PUSH SFRA 2115 Fluvial Flood Zone 3
- This part of the site may only be suitable for landscaping and/or water balancing
- Development proposals should incorporate an FRA and surface water drainage scheme that demonstrates that there would be no net increase in surface water impact and that there will be no loss of flood water storage.

L89 Land adjacent to 27 Holybourne Road

- This site is located within Flood Zone 1 and foul, surface and private sewers are also present. Though the site area is not above 1 hectare, the main river culvert that runs along the southern boundary links the Lavant and Hermitage Streams, which is used to control flows. It therefore has a flood risk associated with the Lavant Stream
- There must be no development over this structure and any works within eight metres of the culvert will require the permission of the EA in the form of a Flood Defence Consent. Development proposals will also require a surface water drainage scheme incorporating SUDS.

Waterlooville

W53a/b St Michael's Convent

- This site extends to the Hermitage Stream. Part of the site is in Flood Zone 1
- Fluvial modelling may be required to fully assess flood risk
- Any development within eight metres of the main river will require a Flood Defence Consent from the Environment Agency
- Development proposals will also require a surface water drainage scheme incorporating SUDS.

Conclusion

- 34 This high level FRA demonstrates that a method based on the sequential approach has been used in the selection of development sites for the Allocations Plan. Large areas of the Borough are currently at risk of flooding or are predicted to be at risk of flooding in 2115. However, very few sites allocated for housing or employment in the draft plan are located in Flood Zones 2 and 3. This is because the primary area of search was Flood Zone 1. Those sites that are allocated in the draft plan for either housing or employment and are at risk of flooding will be subject to the sequential and exception tests as required by Government policy set out in the NPPF.
- 35 Following the production of this FRA, there are no sites which the Council considers should be excluded from the Allocations Plan. As stated above, the site selection process has filtered out sites at an early stage where it was considered that the flood risk was too great and could not be overcome. Neither the Environment Agency or Hampshire County Council

APPENDIX 4

Southern Water Sewer Records



107079

471374

SU7107SE

Title: 192756_Land adjacent Holybourn

Scale: 1:1250

Date: 07/04/2015

WARNING: BAC pipes are constructed of Bonded Asbestos Cement
WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement

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



Southern
Water

1070