

APPENDIX C

Environment Agency modelled flood levels

Flood Map for Planning centred on Richmond College created 15/05/2014 - NET41816AS-2



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Detailed FRA centred on Richmond College created 15/05/2014 - NET41816AS-2



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Detailed FRA centred on Richmond College created 15/05/2014 - NET41816AS-2



Hertfordshire & North London

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Environment Agency ref: NET41816AS-2

The following information has been extracted from the River Crane Mapping Study (Halcrow 2008)

Caution:

The modelled flood levels and extents are appropriate for catchment wide strategic flood risk mapping. However, for more detailed flood risk assessment it is recommended that each of the underlying flood mapping, hydraulic modelling and hydrological assumptions are re-evaluated to determine the appropriateness in a more detailed analysis.

All flood levels are given in metres Above Ordnance Datum (mAOD) All flows are given in cubic metres per second (cumecs)

MODELLED FLOOD LEVEL

					Return	n Period		
Node Label	Easting	Northing	5 yr	20 yr	50 yr	100 yr	100yr + 20%	1000yr
C536	515203	173360	9.462	9.573	9.61	9.645	9.698	9.915
C535	515294	173393	9.383	9.497	9.536	9.573	9.628	9.854
C533	515293	173409	9.153	9.236	9.263	9.289	9.329	9.461
C532u	515341	173452	9.091	9.173	9.2	9.227	9.267	9.433
C531	515346	173453	8.982	9.061	9.086	9.112	9.151	9.317
C530	515432	173485	8.912	8.99	9.015	9.041	9.08	9.231
C530d	515432	173485	8.912	8.99	9.015	9.039	9.073	9.195
C529u	515460	173500	8.878	8.955	8.98	9.004	9.038	9.161
C529d	515460	173500	8.479	8.548	8.571	8.592	8.623	8.778
C528	515504	173513	8.425	8.494	8.516	8.537	8.568	8.729
C527	515506	173513	8.431	8.5	8.523	8.544	8.575	8.736
C526	515584	173537	8.27	8.339	8.362	8.383	8.413	8.601
C525	515698	173562	8.046	8.115	8.138	8.159	8.191	8.349
DN164	515016	173397	9.899	10.021	10.063	10.103	10.162	10.464
DN163	515016	173401	9.903	10.027	10.069	10.108	10.167	10.463
DN162	515040	173498	9.828	9.951	9.994	10.034	10.094	10.392
DN161	515056	173574	9.762	9.888	9.934	9.972	10.033	10.34
DN160	515067	173641	9.722	9.849	9.897	9.935	9.997	10.314
DN159	515088	173744	9.684	9.808	9.859	9.894	9.957	10.28
DN158	515110	173834	9.655	9.776	9.828	9.861	9.924	10.264
DN157	515126	173885	9.646	9.766	9.818	9.852	9.915	10.265
DN157d	515126	173885	9.646	9.766	9.818	9.851	9.914	10.264
DN156	515132	173929	9.632	9.749	9.801	9.832	9.895	10.256
DN155	515106	174044	9.611	9.726	9.779	9.809	9.871	10.246
DN154d	515104	174048	9.607	9.72	9.773	9.802	9.864	10.241

MODELLED FLOWS

					Return	n Period		
Node Label	Easting	Northing	5 yr	20 yr	50 yr	100 yr	100yr + 20%	1000yr
C536	515203	173360	24.112	26.036	26.678	27.274	28.149	32.517
C535	515294	173393	24.113	26.035	26.677	27.274	28.149	32.503
C533	515293	173409	24.113	26.036	26.677	27.274	28.149	32.504
C532u	515341	173452	24.113	26.035	26.677	27.274	28.149	31.412
C531	515346	173453	24.113	26.035	26.677	27.274	28.149	31.411
C530	515432	173485	24.112	26.035	26.677	27.274	28.149	31.394
C530d	515432	173485	24.112	26.035	26.677	27.274	28.149	31.394
C529u	515460	173500	24.112	26.035	26.677	27.274	28.149	31.39
C529d	515460	173500	24.112	26.035	26.677	27.274	28.149	31.39
C528	515504	173513	24.112	26.035	26.677	27.274	28.149	31.384
C527	515506	173513	24.112	26.035	26.677	27.274	28.149	31.384
C526	515584	173537	24.112	26.035	26.678	27.274	28.149	31.391
C525	515698	173562	24.112	26.035	26.677	27.273	28.149	32.46
DN164	515016	173397	2.735	3.562	3.852	4.123	4.555	6.6
DN163	515016	173401	2.735	3.562	3.852	4.123	4.555	6.6
DN162	515040	173498	2.734	3.563	3.852	4.124	4.556	6.7
DN161	515056	173574	2.734	3.563	3.853	4.125	4.558	6.7
DN160	515067	173641	2.734	3.563	3.854	4.126	4.558	6.80
DN159	515088	173744	2.735	3.565	3.855	4.127	4.561	6.8
DN158	515110	173834	2.737	3.566	3.857	4.128	4.564	6.3
DN157	515126	173885	2.738	3.567	3.858	4.13	4.565	6.2
DN157d	515126	173885	2.738	3.567	3.858	4.13	4.565	6.2
DN156	515132	173929	2.739	3.567	3.859	4.13	4.566	6.2
DN155	515106	174044	2.743	3.569	3.861	4.133	4.571	6.20
DN154d	515104	174048	2.894	3.649	3.993	4.211	4.745	9.90



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Environment Agency ref: NET41816AS-2

The following information on defences has been extracted from the Asset Information Management System (AIMS)

Defences

Map ID	Asset Reference	Asset Type	Asset Protection	Asset Comment	Asset Description	Asset Location	Design Standard of protection (years)	Grid Reference
126260	0623636DH0114L02	defence	Fluvial	Combination of poured concrete and timber bank protection	Bank protection.	D/S from Chertsey Road	200	TQ1512973916
126461	0623636DH0114R03	defence	Fluvial	Concrete bank protection with section of timber lining	Bank protection.	D/S from Chertsey Road	200	TQ1513273888
126257	0623636DH0113L02	defence	Fluvial	Cast insitu concrete channel lining	Lined Channel	Kneller Road, Twickenham	200	TQ1509974064
126259	0623636DH0113R03	defence	Fluvial	Cast insitu concrete channel lining.	Lined Channel	Kneller Road, Twickenham.	200	TQ1511174048
143354	0623636CR0104L02	defence	Fluvial	Cast insitu concrete lined channel with 1.5m high walls and lined channel bed.	Lined channel.	Twickenham	10	TQ1601573725
144651	0623636CR0104R02	defence	Fluvial	Cast insitu concrete lined channel with 1.5m high walls and lined channel bed.	Lined channel.	Twickenham	20	TQ1602473713

Structures

Map ID	Asset Reference	Asset Type	Asset Protection	Asset Comment	Asset Description	Asset Location	Grid Reference
192275	0623636CR0104R01002	weir	Fluvial	Precast concrete fixed crest weir	Weir.	North of Norcutt Road	TQ1534073451
192274	0623636CR0104R01001	weir	Fluvial	Fixed crest concrete sloping weir. 7-03-2011 AP Changed to FDS, TC 3	Weir.	North of Talbot Road	TQ1546273498

Defences & Structures - centred on Richmond College created 15/05/2014 - NET41816AS-2 -GHERTSE GARD ന МÞ Environment Agency 2 NC HEATHFIELD Playing FB **Environment Agency** 2 Bishops Square Business Park Field St Albans Road West Hatfield Hertfordshire AL10 9EX HEATHFIELD 0 37.5 75 150 Metres Leaend Main Rivers Defences Structures Mast Asset ID Asset ID Twickenham 192274 126257 Stoop 126259 192275 ORD WAY Rugby College 126260 9m Ground 126461 CKENHAN \boldsymbol{D} 143354 144651 Tiach Playing FB Field Allot Weir FB Gdns Depot The following information on defences has been extracted from the Asset Weir Information Management System (AIMS) Produced by: Partnerships & Strategic Overview, This map is based upon Ordnance Survey Material with the permission of Ordnance Survey on behalf of the controller of Her Majesty's Stationery Office Crown Copyright.

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Hertfordshire & North London

Historic Flood Data



We do not hold records of historic flood events from rivers and/or the sea affecting the area local to this property. However, please be aware that this does not necessarily mean that flooding has not occurred here in the past.

Please note that our records are not comprehensive. We would therefore advise that you make further enquiries locally with specific reference to flooding at this location. You should consider contacting the relevant Local Planning Authority and/or water/sewerage undertaker for the area.

We map flooding to land, not individual properties. Our historic flood event record outlines are an indication of the geographical extent of an observed flood event. Our historic flood event outlines do not give any indication of flood levels for individual properties. They also do not imply that any property within the outline has flooded internally.

Please be aware that flooding can come from different sources. Examples of these are:

- 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,
- groundwater rising up from underground aquifers

Surface Water

Managing the risk and responding to surface water flooding is a role for Lead Local Flood Authorities. The Environment Agency was funded by the government to produce new national surface water maps, which went live on our website from December 2013. See <u>http://maps.environment-agency.gov.uk</u> and select "Risk of Flooding from Surface Water". We have produced these maps for the whole country and have worked with Lead Local Flood Authorities to incorporate their local surface water flood risk information where this is available.

Apollo Court, 2 Bishop Square Business Park, St Albans Road West, Hatfield, Hertfordshire, AL10 9EX Customer services line: 03708 506 506 Email: NETenquiries@environment-agency.gov.uk Website: www.environment-agency.gov.uk

Additional Information



Use of Environment Agency Information for Flood Risk / Flood Consequence Assessments

Important If you have requested this information to help inform a development proposal, then we recommend that you undertake a formal preapplication enquiry using the form available from our website:- <u>http://www.environment-agency.gov.uk/research/planning/33580.aspx</u>

Depending on the enquiry, we may also provide advice on other issues related to our responsibilities including flooding, waste, land contamination, water quality, biodiversity, navigation, pollution, water resources, foul drainage or Environmental Impact Assessment.

In **England**, you should refer to the Environment Agency's Flood Risk Standing Advice and the technical guidance to the National Planning Policy Framework for information about what flood risk assessment is needed for new development in the different Flood Zones. These documents can be accessed via:

http://www.environment-agency.gov.uk/research/planning/82587.aspx https://www.gov.uk/government/publications/national-planning-policy-framework-technical-guidance

You should also consult the Strategic Flood Risk Assessment produced by your local planning authority.

You should note that:

- 1. Information supplied by the Environment Agency may be used to assist in producing a Flood Risk / Consequence Assessment (FRA / FCA) where one is required, but does not constitute such an assessment on its own.
- 2. This information covers flood risk from main rivers and the sea, and you will need to consider other potential sources of flooding, such as groundwater or overland runoff. The information produced by the local planning authority referred to above may assist here.
- 3. Where a planning application requires a FRA / FCA and this is not submitted or deficient, the Environment Agency may well raise an objection.
- 4. For more significant proposals in higher flood risk areas, we would be pleased to discuss details with you ahead of making any planning application, and you should also discuss the matter with your local planning authority.

Apollo Court, 2 Bishop Square Business Park, St Albans Road West, Hatfield, Hertfordshire, AL10 9EX Customer services line: 03708 506 506 Email: NETenquiries@environment-agency.gov.uk Website: www.environment-agency.gov.uk

APPENDIXD

Thames Water Sewer Flooding Enquiry

Sewer Flooding History Enquiry



Thames Water Property Searches

Vastern Road

Search address supplied

Richmond-Upon-Thames College Egerton Road Twickenham TW2 7SJ

Your reference	62335
Our reference	SFH/SFH Standard/2014_2764887
Received date	15 May 2014
Search date	18 May 2014

Thames Water Utilities Ltd

Property Searches PO Box 3189 Slough SL1 4WW

DX 151280 Slough 13

T 0118 925 1504

E searches@thameswater.co.uk I www.thameswaterpropertysearches.co.uk

Registered in England and Wales No. 2366661, Registered office Clearwater Court, Vastern Road Reading RG1 8DB

Sewer Flooding History Enquiry



Search address supplied: Richmond-Upon-Thames College,Egerton Road,Twickenham,TW2 7SJ

This search is recommended to check for any sewer flooding in a specific address or area

- TWUL, trading as Property Searches, are responsible in respect of the following:-
- (i) any negligent or incorrect entry in the records searched;
- (ii) any negligent or incorrect interpretation of the records searched;
- (iii) and any negligent or incorrect recording of that interpretation in the search report
- (iv) compensation payments

Thames Water Utilities Ltd

Property Searches PO Box 3189 Slough SL1 4WW

DX 151280 Slough 13

T 0118 925 1504

E searches@thameswater.co.uk www.thameswaterpropertysearches.co.uk

Registered in England and Wales No. 2366661, Registered office Clearwater Court, Vastern Road Reading RG1 8DB

Sewer Flooding History Enquiry



History of Sewer Flooding

Is the requested address or area at risk of flooding due to overloaded public sewers?

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- 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 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 those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from 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 Company'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 on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company 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 Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water on Tel: 0845 9200 800 or website www.thameswater.co.uk

Thames Water Utilities Ltd

Property Searches PO Box 3189 Slough SL1 4WW

DX 151280 Slough 13

T 0118 925 1504

E searches@thameswater.co.uk I www.thameswaterpropertysearches.co.uk

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