FLOOD SOLUTIONS
Residence

Report prepared on:
Nassau Road, London, SW13

Report Reference:
FloodSolutionsResidence_SpecimenVs3

National Grid Reference:
521880,176469

Report prepared for:
Specimen Client

Client Reference:
Specimen Report

Report date:
8th April 2011

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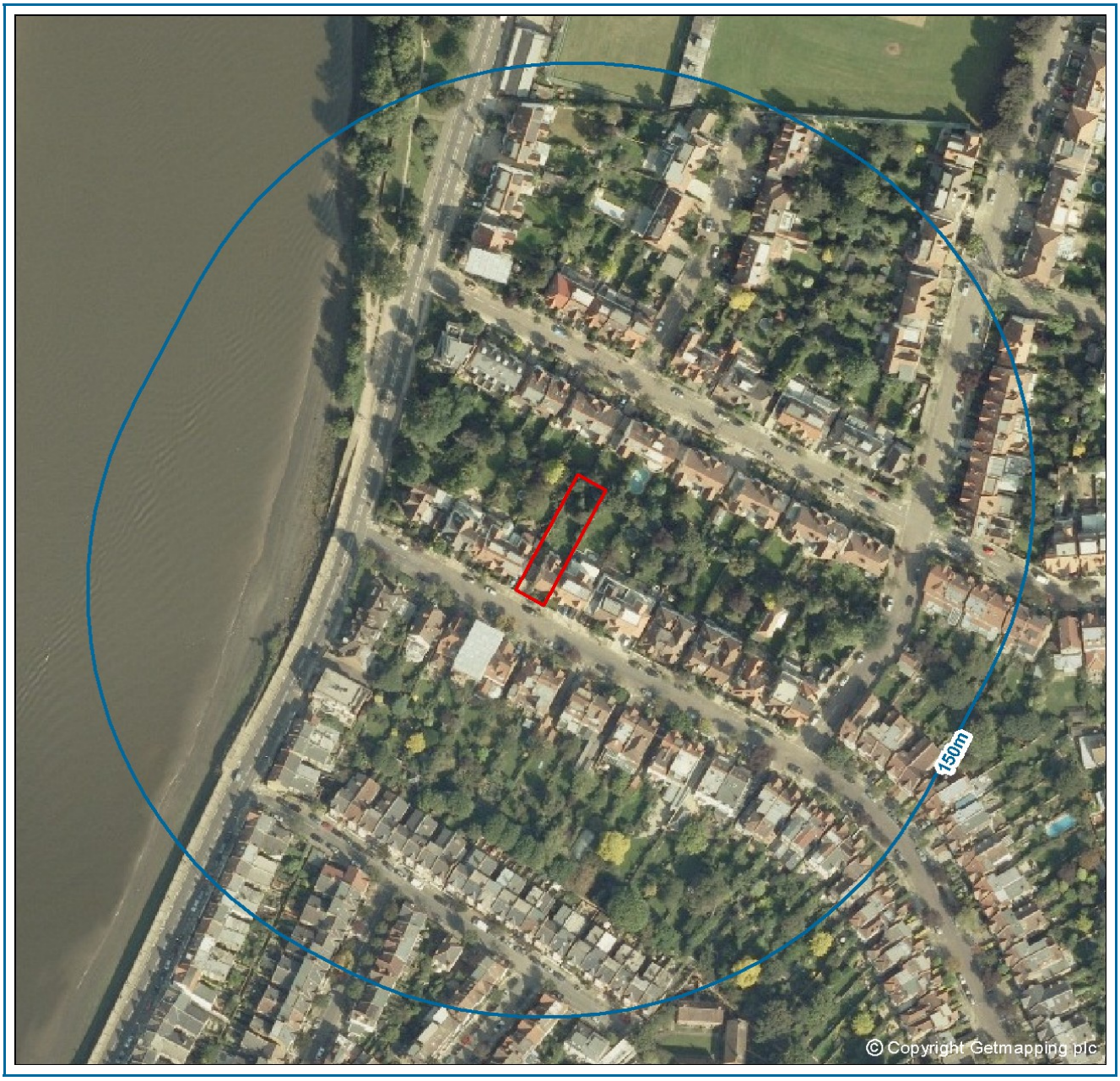
Site Context



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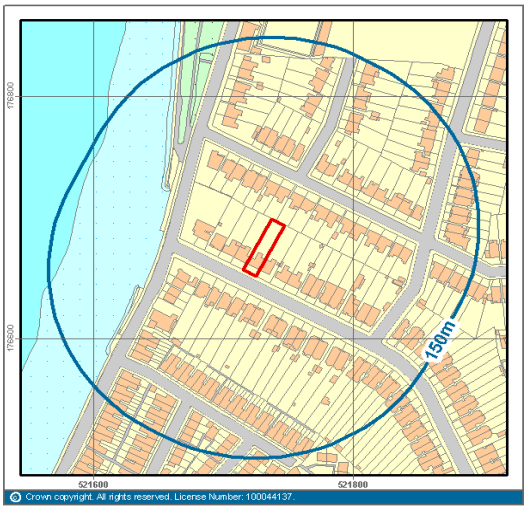
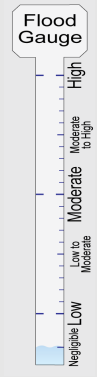


Flood Risk Screening

Report Prepared On	Site Area (m^2)	Report Author
Nassau Road, London, SW13	542.12	Ben Furlong BSc (Hons), MSc, AIEMA Tel: 0845 458 5250

1. Is the Site likely to be insurable at standard terms?	Yes
2. What is the overall risk of flooding, assuming defences fail or are absent or over-topped?	High
3. Are there existing flood defences that might benefit the Site?	Yes
4. What is the risk of flooding when these defences are operational?	Moderate

Flood Analysis

River	Coastal	Groundwater	Surface (Pluvial)	Other Factors[1]
				

Consultants Commentary

- The Site lies within an Environment Agency defined flood plain, however it is afforded protection by the Thames Barrier and raised man-made defences along the River Thames. Accordingly the risk without defences is high, but the risk from river/tidal flooding with defences is low and insurance should currently be available.
- This area is susceptible to groundwater flooding, sites in London may be at an increased risk of groundwater flooding due to the highly unpredictable nature of local geology owing to the heavy influence of anthropogenic activities. Although risks are likely to be greatest if cellars and basements are present.
- Other factors affecting the risk of flooding at the Site include the presence of BGS determined geological indicators of flooding underlying the Site. These relate to superficial geological deposits which have been characterised in terms of their likely vulnerability to flooding and reflect areas which may have flooded in the recent geological past. In addition, the Site is less than 2m above the nearest surface water feature (the River Thames located 67.2m west).
- Surface water flooding is not a significant consideration at this property.

[1]Other factors influencing flood risk include historic flood events, geological indicators of flooding, proximate surface water features and elevation above sea level.

Recommendations

1. As the Site is at an increased risk of flooding, you may wish to consider requesting a more detailed assessment (in the form of a Flood Solutions Consult Report). This would review additional site specific data (not available from UK-wide databases) and enquiries of statutory bodies (Environment Agency, Local Authority etc.). Such an assessment would identify more accurately the risk of flooding and review the standard of existing defences. It could provide a specification and budget cost estimate for a full Flood Risk Assessment to meet the requirement of PPS25 (should this be required) and/or suggestions for flood resistance/resilience measures. Please contact us so we can discuss your requirements and provide a quotation.
2. It would be prudent to ask the vendor to confirm whether or not it is aware of any previous flooding at the Site.
3. You may wish to obtain insurance terms prior to completion of this transaction.

Risk Management Options

Flooding can usually be managed by the installation of flood protection measures either on/within the building(s) or across the Site. Flood protection measures can be divided into two categories; flood resistance and flood resilience.

Both flood resistance and flood resilience solutions can be integrated with design proposals for new build properties or retro-fitted to existing properties. Specific flood protection packages can often include both resistance and resilience measures. What is suitable will depend on a number of factors including flood source, likely flood depths, property design and age.

Research conducted by CLG Sustainable Buildings Division and the Environment Agency revealed that installing flood resistance measures may be inappropriate where likely flooding will be deep. Certain types of building construction are unable to resist the pressure load placed on the exterior skin of the building by retained flood waters. Generally a flood depth between 0.6m and 1.0m above ground level is used as a benchmark to decide whether to consider flood resilience measures rather than rely on flood resistance measures. This is dependent on the age and construction of the property.

Guideline Costs for Resistance Measures

Building Feature	**Baffles (+ VAT)**
Standard (900mm) single door	£725 - £875
Standard (1800mm) double entrance door	£850 - £1,000
Large roller shutter door (up to 2,745mm span)	£1,600 - £1,750
Standard garage door	£1,400 - £1,575
Standard Window (up to 1,240mm span)	£350 - £500
Large Window (1,240mm to 2,150mm span)	£550 - £700
Single air brick	£70 - £220
Double air brick	£80 - £230
Tanking (of basement, walls or floors)	£25 - £50 per metre²
System Component	**Plumbing (+ VAT)**
Simple non-return valve	£50
Sophisticated non-return valve	£660 - £800

The costs above are for indicative budget purposes only. They are based on installing components of a standard design and colour. If the Site requires bespoke products, these are likely to cost more (for example, if the Site is in a conservation area, different colours may be required).

If you require a property specific assessment of which measures are suitable, and a more accurate cost appraisal, Argyll will need to complete a FLOODSOLUTIONS Consult Report. This report normally costs from £500 to £1,000 (plus VAT) and provides more detailed information on the likelihood and, in particular, the depth of all potential types of flooding. Argyll can also arrange for one of a panel of specialist contractors to provide a tailored estimate for flood protection measures.

Additional Considerations

This report is primarily a flood risk screening report. In addition to the issues included within the scope of the Flood Risk Screening Methodology, you may wish to consider the following issues:

Riparian Ownership, Development Control and Sewer Flooding.	Statutory bodies may have rights of access to the Site, which is located in proximity to water features (e.g. rivers, canals or drainage channels). Alternatively a Site owner or occupier may have obligations for river channel repair or maintenance. Sites which lie on or near to a watercourse may be subject to additional planning controls. In times of extreme rainfall events, sewers can overflow and cause local flooding. Ofwat's 'DG5 - At Risk Registers' record properties that have flooded from sewers and are at risk of flooding again, with separate registers for internal and external flooding. The At Risk Registers are maintained by each of the ten water and sewerage companies in England and Wales. These registers may not be complete. Some episodes of past flooding are not recorded and sometimes the response is based on all properties connected to a local sewer network (normally up to ten houses). This due to the way in which the data is collected. Argyll can provide additional information on riparian ownership, development control and sewer flooding. The cost of this additional information is £50 plus VAT.

Tabular Summary

Current Flood Risk	Source	On-site	1-250m
Flooding From Rivers or Sea	EA	YES	YES
Flooding From Rivers or Sea (in an Extreme Event)	EA	YES	YES
Areas Benefiting from Flood Defences	EA	YES	YES
Flood Water Storage Areas	EA	-	-
Flood Defences	EA	-	YES
NAFRA Data	EA	YES	YES
Groundwater Flooding Susceptibility	BGS	YES	YES
Surface Water Flooding (1:1,75 year rainfall event)	JBA	YES	YES
Surface Water Flooding (1:200 year rainfall event)	JBA	YES	YES
Surface Water Flooding (1:1,000 year rainfall event)	JBA	YES	YES
Dam or Reservoir Failure	JBA	-	-

Historical Flooding	Source	On-site	1-250m
Historical Flood Events	EA	-	-
Geological Indicators of Flooding	BGS	YES	YES

Other Information	Source	On-Site
Height of Site Above Sea Level	OS	5.6m
Distance of Site Boundary to Nearest Water Feature	OS	67.2m

Tabular Summary

If data is present, this is expressed as a 'YES' response. If no data is present then a dash is inserted.

Data Section

Where distances are reported these are expressed in metres from the boundary of the site or from a 25m radius buffer if a point search is used. A reading of 50m would therefore indicate a feature located 50m from the site boundary. A reading of 0m indicates that the features crosses the site. All directions are expressed in compass bearings as follows: N – North, NE – North East, E – East, SE – South East, S – South, SW – South West, W – West, NW – North West. The abbreviation N/A indicates 'Not Applicable'.

Environment Agency Data

1) NAFRA - The data in the NaFRA Property Flood Likelihood Database is sourced from the Environment Agency's National Property Dataset (NPD2). The information provided includes the flood likelihood category low, moderate, or significant according to the NaFRA flood risk analysis. Some areas may be classified as having no result. This occurs where there is no output data from the analysis used to produce NaFRA, but the area falls within the extreme flood outline (with a 0.1% or 1 in 1000 chance of flooding in any year).

2) Historic Flood Outlines - The EA has collated extensive records (including outlines) of flooding from rivers, the sea or groundwater which have occurred in England and Wales since c. 1950. This information comes from various sources including maps, aerial photographs and private records. It is not necessarily comprehensive.

British Geological Survey Data

1) BGS Groundwater Flood Data - The BGS Susceptibility to Groundwater flooding hazard dataset identifies where geological conditions could enable groundwater flooding to occur and where groundwater may come close to the ground surface. The susceptibility data is suitable for use for regional or national planning purposes where the groundwater flooding information will be used along with a range of other relevant information to inform land-use planning decisions.

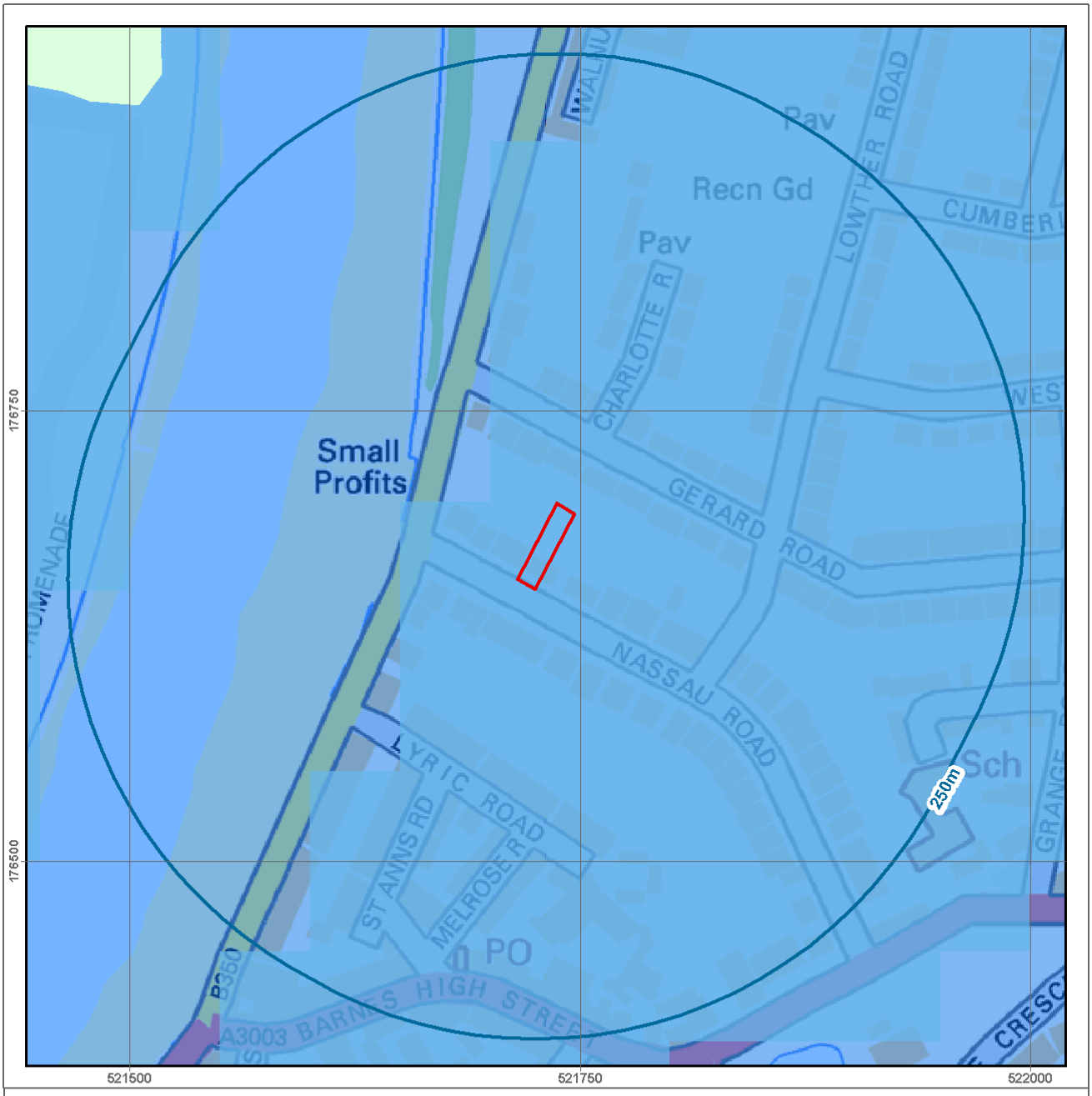
2) Geological Indicators of Flooding – The BGS Geological Indicators of Flooding (GIF) data set is a digital map based on the BGS Digital Geological Map of Great Britain at the 1:50,000 scale (DiGMapGB-50). It was produced by characterising Superficial (Drift) Deposits on DiGMapGB-50 in terms of their likely vulnerability to flooding, either from coastal or inland water flow and reflects areas which may have flooded in the recent geological past. This normally relates to flooding which happened many thousands of years ago.

JBA Consulting Data

1) Surface Water Flooding - Information regarding the risk of natural surface water or pluvial flooding. The risk is classified by JBA into four categories, negligible, low (more than 0.1m), medium (more than 0.3m) and high (more than 1m) which reflect varying depths of potential surface water flooding during a range of rainfall events including 1:75 year, 1:200 year and 1:1,000 year events.

2) Dam or Reservoir Failure – JBA has modelled approximately 1700 dams and reservoirs across the UK which are considered to pose the greatest risks to people and property. These models are able to predict the areas likely to flood on all sides of a feature, should an element of it fail e.g. a wall, dam or earth bund.

Current Flood Risk



Legend of Flood Risk and Groundwater Susceptibility

- Client Site
- Area at risk of flooding from one or more sources
- Area susceptible to groundwater flooding

metres
0 50 100 200

* - Not all features in legend may be present in above map

Nominal scale at A4 paper size - 1:3,500

Current Flood Risk

Map ID	Details	Distance	Response and Direction
	River or Sea Flooding		
	Flooding From River or Sea		
	Are there any indicative flood plains within 250m?		YES
	Type: Tidal Models Source: Environment Agency, Head Office, Boundary Accuracy: As Supplied.		N/A
	Flooding From River or Sea (in an Extreme Event)		
	Are there any indicative flood plains (extreme events) within 250m?		YES
	Type: Fluvial / Tidal Models Source: Environment Agency, Head Office, Boundary Accuracy: As Supplied.		N/A
	The Site (or part of it) is at a high risk of flooding from rivers and the sea, as defined by the Environment Agency's Flood Map. The risk of annual flooding is greater than 1% (from rivers) or greater than 0.5% (from the sea). Properties in Flood Zone 3 may have difficulty in obtaining flood insurance (most insurers will only cover risks of less than 1.33% annual probability). All development proposals would need to be accompanied by a Flood Risk Assessment, in accordance with PPS 25. Developments such as emergency services stations, basement dwellings and caravans, mobile homes and park homes for permanent residential use, etc. are not compatible with this level of risk. Significant planning constraints would apply to such developments as residential, care homes, hotels, short-let caravan parks, camping, etc. Parts of the Site may be within the 'functional floodplain' (>5% annual risk of flooding) within which severe planning constraints apply. It is recommended that a Flood Solutions Consult Report is undertaken to further define the flood risk issues and potential development constraints.		
	Flood Defences		
	Areas Benefiting from Flood Defences		
	Does the Site or any areas within 250m benefit from flood defences?		YES
	The Site is within an Area Benefiting from a Flood Defence, as defined by the Environment Agency. There is therefore a residual risk that the Site may flood if the protection standard of the defences is exceeded, or if the defences should fail. It is recommended that further investigations are undertaken into the standard of these defences. Please contact us for further information.		
	Flood Water Storage Areas		
	Are there any flood water storage areas within 250m?		NO
	The Site is over 250m from a Flood Storage Area (FSA) as defined by the Environment Agency. These areas store flood water during significant flood events. It is unlikely that any FSA presents any associated flood risk to the Site.		
	Flood Defences		
	Are there any flood defences within 250m?		YES
	The Site is less than 2m above the base level at a flood defence. There may therefore be a residual risk of flooding should the protection standard of the defences be exceeded (and the defences overtopped) or should the defence line fail. A Flood Solutions Consult Report could be undertaken in order to further define these risks.		

Details	Distance	Rating

NaFRA Property Flood Likelihood Database

What is the flood likelihood category for the Site?	-	Low

The Site (or part of it) has been defined as being at Low Flood Risk within the Environment Agency's National Flood Risk Assessment. This classification relates to the locality as a whole, rather than the Site itself and relates only to the risk of coastal or river flooding. This classification should not cause difficulties in obtaining flood insurance for the Site.

Groundwater Flooding Susceptibility

What is the susceptibility to groundwater flooding at the Site?	-	High

Information from the British Geological Society (BGS) indicates that the locality has a high susceptibility to groundwater flooding. However, the BGS advise that this data should not be used to assess the precise risk to any particular Site. A further detailed hydrogeological study could be undertaken to further quantify this risk, to include a review of any previous records of flooding, rainfall records, property type and land drainage information.

Surface Water (or Pluvial) Flooding

What is the risk of surface water flooding at the Site following a 1 in 75 year rainfall event?	-	Low
What is the risk of surface water flooding at the Site following a 1 in 200 year rainfall event?	-	Low
What is the risk of surface water flooding at the Site following a 1 in 1,000 year rainfall event?	-	Low

Historical Flooding

Map ID	Details	Distance	Response and Direction

Historic Flood Events

	Have any historic flood events occurred at the Site or within 250m?	NO
	The Environment Agency's records have no indication of past flooding within 500m of the Site. As these records are not comprehensive, it may still be prudent to ask the Site owner whether they are aware of any previous flooding at the Site or in the surrounding area.	

Geological Indicators of Flooding

	Are there any geological deposits within 250m which indicate the Site or surrounding area may have been flooded in the past?	YES
	Data from the British Geological Society (BGS) indicates that the type of deposits in the locality of the Site are of the type normally associated with floodplains. However, this data should only be considered as complementary to the Environment Agency's Flood Map. This BGS data does not indicate the likelihood of flooding, since such deposits may be due to flood events which occurred thousands of years ago. Refer to the other assessments in this report for an overall assessment of flood risk.	N/A

Other Information

Map ID	Details	Distance	Response and Direction
	Height Above Sea Level		
	What is the maximum, minimum and average height of the Site above sea level?		
	Maximum Height: 6.0m, Minimum Height: 5.1m, Average Height: 5.6m		
	The Site is at a moderate height above sea level. However, this is not in itself indicative of the degree of flood risk and reference should be made to other assessments within this report.		
	Distance to Water Features		
	Are there any surface water features within 250m?		YES
	Feature Group: Tidal Water, Feature Description: Foreshore, Feature Source: -	67.2m	W
	The Site is less than 2m above a water feature (as shown on the Ordnance Survey maps). This does not represent a flood risk in itself, but other assessments of risk within this report should be consulted.		
	Dam or Reservoir Failure		
	Is there a risk of the Site being affected by the failure of a nearby dam or reservoir?	-	NO
	Neither the Site nor areas near to it will be likely to flood if a dam or reservoir in the surrounding area failed.		

Flood Risk Screening Methodology

This FloodSolutions Residence report is a desktop flood risk screening report, designed to enable property professionals to assess the risk of flooding at residential sites. It examines two areas; how flood risk affects the availability of insurance for a site and the overall risk of flooding at a site (taking into account any flood defences present). The report considers current Government guidance including Planning Policy Statement 25 (PPS25) 'Development and Flood Risk', and the agreement between insurance companies and central Government.

Insurance Availability

Argyll provides an indication of whether the Site is likely to be insurable for flood risk at standard terms. The answer to Question 1 is based on consideration of NaFRA data supplied by the Environment Agency and surface water (flash) flooding data supplied by JBA Consulting. This data is used by insurance companies to determine the suitability of a Site for insurance, although they may access additional information which could affect their assessment.

Under the Association of British Insurers' Revised Statement of Principles on the Provision of Flooding Insurance (July 2008), the general policy of member companies is that flood insurance for domestic properties and small businesses should continue to be available for as many customers as possible until 1st July 2013, by which time a longer term solution should be implemented. The premiums charged and other terms will reflect the risk of flooding but insurance will be available:

1) for properties where the flood risk is not significant (generally defined as no worse than 1.33% or 1–in-75 years annual probability of flooding); and

2) to existing domestic property and small business customers at significant risk, providing the Environment Agency has announced plans to reduce that risk within five years, such as improving flood defences. (The commitment to offer cover will extend to the new owner of any applicable property subject to satisfactory information about the new owner).

However, for significant risk areas where no improvements in flood defences are planned, and in all cases other than domestic properties and small businesses, insurers cannot guarantee to provide cover, but will examine the risks on a case-by-case basis. The implementation of the revised Statement of Principles depends on action from the Government and is continually reviewed by insurers. In addition, the revised Statement of Principles does not apply to properties built after 1st January 2009. Different guidance applies to these (see Climate Change – Guidance on Insurance Issues for New Developments from www.abi.org.uk).

The responses to the question 'Is the Site likely to be insurable at standard terms?' assume the Site is an existing domestic property and makes no allowance for previous claims arising from any type of flooding, nor for non-flood related risks such as subsidence.

Response	Meaning
Yes	The Site is likely to be considered acceptable by insurance companies at standard terms and flood insurance should not be difficult to obtain. No further action required.
No	The Site is not likely to be considered acceptable by insurance companies at standard terms, on the basis of current information. Further work may be required in order to obtain acceptable insurance terms for the flood risk. This could include a more detailed risk assessment or the use of accredited products, flood resilient materials and temporary defences to defend the property.

Flood Risk Rating

Argyll provides an overall flood risk rating based on an assessment of the data provided within this report. It does so by asking two questions:

2. What is the overall risk of flooding, assuming flood defence fail or are absent or overtopped?
3. Are there existing flood defences which might benefit the Site?

The answer to Question 2 provides a worst case scenario assuming there are either no defences in the area, that any defences in the area could fail, primarily as a result of river or coastal flooding, or are overtopped by excessive flood volumes.

The answer to Question 3 is based on the presence of any flood defences registered by the Environment Agency within 250m of the Site. It should be noted that a residual risk of flooding may be present if such defences fail. Flood defences do not generally protect the Site against groundwater and surface water (pluvial) flooding.

If defences are present within 250m, a further question is asked:

4. What is the risk of flooding when these defences are operational?

This assesses the risk from flooding, assuming these defences are fully operational and neither fail nor are overtopped.

Questions 2 and 4 are answered by one of six standard responses:

Response	Meaning
Negligible	The overall flood risk rating for the Site is assessed to be 'Negligible'. Existing datasets do not indicate any risk at the Site itself, or any feature within the locality of the Site, which would be expected to pose a threat of flooding. It is not considered that any further investigations are necessary in regard to flood risk.
Low	The overall flood risk rating for the Site is assessed to be 'Low'. Although large sites (over 1 ha) would require a Drainage Impact Assessment to accompany any planning application, it is not considered necessary to undertake any other further investigations into the flood risk to the Site.
Low to Moderate	The overall flood risk rating for the Site is assessed to be 'Low to Moderate'. The presence of such features as flood defences, flood storage areas and watercourses within the locality of the Site suggests that there may be a risk of flooding to the Site itself. Further investigations could be undertaken to further assess the risk such features pose.
Moderate	The overall flood risk rating for the Site is assessed to be 'Moderate'. Information from existing datasets suggests that there are certain features which may present a risk to the Site and its occupants. Further assessment would normally be suggested as a prudent measure to clarify the risk of flooding at the Site.
Moderate to High	The overall flood risk rating for the Site is assessed to be 'Moderate to High'. Information from existing datasets suggests that there are certain features which may present a significant risk to the Site and its occupants. Further assessment is usually recommended in order to clarify the risk of flooding at the Site.
High	The overall flood risk rating for the Site is assessed to be 'High', with a consequent risk to life and property. This means that existing datasets reveal significant flood risk issues which need to be addressed. Further assessment is usually recommended in order to clarify the risk of flooding at the Site.

Flood Analysis

The flood risk gauges provide a more detailed analysis of the risk from each of the four main types of flooding – river, coastal, groundwater and surface water. In addition, a fifth gauge provides an analysis of other factors (i.e. historic flood events, geological deposits which are indicative of past flooding, proximity to surface water features and elevation above sea level) that may affect the overall flood risk. For surface water flooding, the risk rating generated from the 1;200 year rainfall event scenario is brought forward to the overall risk assessment, with the 1;75 year and 1;1,000 year rainfall events data provided for informative purposes. For further information on each of these types of flooding, please refer to the Argyll FloodSolutions User Guide.

This analysis takes into account any existing flood defences that are intended to protect the Site and assumes that these work as designed. The analysis also takes into account the other information contained in those data sections of the report which is relevant to that particular type of flooding. The assessment of the risk as shown in the flood gauge should therefore take priority over the information in the individual data sections of the report.

Limitations of the Report

The FloodSolutions Residence report has been designed to satisfy basic flood-related environmental due-diligence enquiries for residential properties. It is a desktop review of information provided by the client and from selected private and public databases. It does not include a site investigation, nor are specific information requests made of the regulatory authorities for any relevant information. Therefore, Argyll cannot guarantee that all issues of concern will be identified by this report, or that the data and information supplied to it by third parties is accurate and complete.

This report includes an assessment of pluvial flooding which examines the risk of the general drainage network overflowing during periods of extreme rainfall. This report does not make a detailed site-specific assessment of the suitability of the existing drainage on the Site. If this is required, then a site survey should be considered. The assessment of pluvial flooding does not take into account particular local or temporary factors that may cause surface water flooding such as the blockage or failure of structures on or within watercourses, drains, foul sewers, water mains, canals and other water infrastructure; and any history of drains flooding at the Site or in the locality. Pluvial (surface water) flooding can occur before surface water reaches the general drainage network, for example on hills and inclines.

Environment Agency data does not include flood risk from very small catchments as models of such small scale catchments are not considered to be reliable for UK-wide flood risk assessments. The potential impact of climate change on flood risk to the Site would require further study.

When answering any questions within this report, current applicable legislation is taken into account.

The data used in this report may have inherent limitations and qualifications. Further details are set out in the FloodSolutions User Guide which is available free of charge from our website www.argyllenvironmental.com , or by calling one of our technical team on 0845 458 5250.

This report is provided under The Argyll Environmental Terms and Conditions for Flood Solutions Reports, a copy of which is available on our website, www.argyllenvironmental.com , or by calling one of our technical team on 0845 458 5250.

Glossary

Business Continuity Plan

A business continuity plan is a strategic plan of action for a business to implement in an emergency (i.e. flood event). This plan ensures a business can continue to operate during emergency situations and reduces the risk of suffering avoidable losses. For example, it may cover such items as emergency accommodation and computer back up off site.

Flood Evacuation Plan

A flood evacuation plan sets out clear steps to ensure the safe evacuation of staff during a flood. It will form part of the Business Continuity Plan.

Coastal Flooding

Coastal flooding is the inundation of land areas along the coast caused by sea water rising above normal tidal conditions. Coastal flooding can arise from a combination of high tides, wind induced tidal surge, storm surge created by low pressure and wave action.

Flood Resistance Measures

These measures are designed to prevent flood water from entering the buildings on Site.

Flood Resilience Measures

These measures are intended to make buildings more resilient to flood damage so that they recover more quickly from flooding. They are not designed to prevent flood water entering the property.

Flood Risk Assessment

A full Flood Risk Assessment (FRA) Report is a bespoke report required under PPS 25: 'Development and Flood Risk' for any development site within Environment Agency Flood Zones 2 or 3 and/or any development site larger than 1 hectare. These reports are generally prepared following liaison with the Local Planning Authority and the application of the sequential test.

Flood Zone 1

An area of low probability of flooding as defined by the Environment Agency – a flood return period of 1 in 1,000 or more.

Flood Zone 2

An area of medium probability of flooding as defined by the Environment Agency – a flood return period between 1 in 100 to 1 in 1,000 for river flooding and 1 in 200 to 1 in 1,000 for coastal flooding.

Flood Zone 3a

An area of high probability of flooding as defined by the Environment Agency – a flood return period between 1 in 20 to 1 in 100 for river flooding and 1 in 200 for coastal flooding.

Flood Zone 3b

This area is a functional floodplain as defined by the Environment Agency. It is an area which is designed to flood – a flood return period of 1 in 20 or less.

Groundwater Flooding

Groundwater flooding occurs when ground water levels increase sufficiently for the water table to intersect the ground surface. Groundwater flooding can occur in a variety of geological settings including valleys and in areas underlain by chalk, and in river valleys with thick deposits of alluvium and river gravels.

Pluvial (Surface Water) Flooding

Pluvial flooding results from rainfall running over ground before entering a watercourse or sewer. It is usually associated with high intensity rainfall events (typically greater than 30mm per hour) but can also occur with lower intensity rainfall or melting snow where the ground is already saturated, frozen, developed (for example in an urban setting) or otherwise has low permeability.

Return Period

Return periods are a measure of how likely flooding is to occur. They are commonly expressed as a ratio (for example 1 in 75 or 1:75). This means that this level of flooding is expected once in every 75 years.

River Flooding

River flooding mainly happens when the river catchment (that is the area of land that feeds water into the river and the streams that flow into the main river) receives greater than usual amounts of water (for example through rainfall or melting of snow). The amount of runoff depends on the soil type, catchment steepness, drainage characteristics, agriculture and urbanisation as well as the saturation of the catchment. The extra water causes the level of the water in the river to rise above its banks or retaining structures.

Useful Contacts

Name and Address	Telephone/Fax/Email	
Argyll Environmental Limited Tower Point 44 North Road Brighton BN1 1YR www.argyllenvironmental.com	General enquiries 0845 458 5250 Fax 0845 458 5260 info@argyllenviro.com	
(For advice on Flood Protection Measures) Flood Protection Association 10 Cavalry Ride Norwich NR3 1UA www.floodprotectionassoc.co.uk	General enquiries 01603 633 440 Fax 01603 763256	
(For Advice on Flood Insurance) British Insurance Brokers' Association 8th Floor John Stow House 8 Bevis Marks London EC3A 7JB	Consumer helpline 0870 950 1790	
Environment Agency National Customer Contact Centre (NCCC) PO Box 544 Templeborough Rotherham S60 1BY www.environment-agency.gov.uk	General enquiries 08708 506 506 Floodline 0845 988 1188 enquiries@environment-agency.gov.uk	
JBA Consulting - Head Office South Barn Broughton Hall Skipton North Yorkshire BD23 3AE	General enquiries 01756 799 919 Fax 01756 799 449 info@jbaconsulting.co.uk	
British Geological Survey Enquiry Service British Geological Survey Kingsley Dunham Centre Keyworth Nottingham NG12 5GG www.bgs.ac.uk	General enquiries 0115 936 3143 Fax 0115 936 3276	