Flood Solutions Consult Commercial

Argyll Environmental

Land at Gileston Farm, Talybont on Usk, Brecon, LD3 7JE

Report Prepared for:	Blake Morgan LLP	**Client Reference:**	31044188
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Current use:	Agricultural/Commercial and Residential	**Proposed use:**	Agricultural/Commercial and Residential
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Overall Flood Risk

MODERATE TO HIGH

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Insurance

In most cases buildings and contents insurance should be available at standard terms. We recommend contacting an insurance provider to obtain a quote for this.

Recommendations

Flood Action Plan and Flood Evacuation Plan

Review drainage, and consider installing Sustainable Drainage Systems and carrying out a detailed groundwater assessment

Please also see the standard advice checklist in the back of the report for a full list of actions and enquiries to be undertaken.

If you require further information or any assistance contact us on **0330 036 6115**

argyllenvironmental.com

Executive Summary

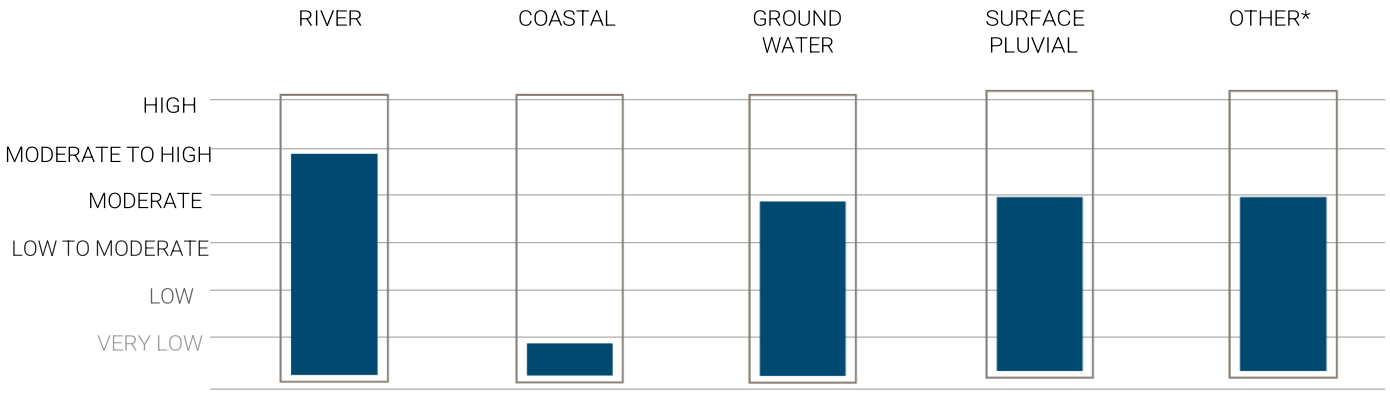
Report overview

Understanding this report

The aim of the Flood Solutions Consult Commercial report is to understand current flood risk at a Site. This is a more in-depth desktop report, which includes an analysis of flood risk data by an Environmental Consultant. Please refer to the methodology section at the end of the report for more details.

Consultant's Summary

Within the scope of this assessment, a significant flood risk has been identiifed. Your attention is drawn to the recommendations.



* Other factors influencing flood risk include flood storage areas, historical floods, and proximity to water features.

Recommendations

Flood Action Plan and Flood Evacuation Plan
Consider the development of both in order to prepare for a flood event. A Flood Action Plan can include shutting off building services and moving valuables to a safe place. A flood evacuation plan is designed to ensure safe access and egress from the Site. This is particularly applicable to any areas used for glamping within the at-risk area of the Site.

Sustainable Drainage Systems
As a source of flooding is from overland run-off, we recommend that you review current drainage provisions at the Site. Drainage schemes such as Sustainable Drainage Systems (SuDS) could be implemented to improve drainage provisions and direct flooding to less sensitive areas away from any in-use arable land.

Detailed groundwater assessment
If the buildings have a basement, you should consider carrying out a more detailed groundwater assessment. An experienced hydrogeologist should carry out this assessment.

Please also see the standard advice checklist in the back of the report for a full list of actions and enquiries to be undertaken.

Flood Analysis

Flood Risk Commentary

Flood Defences

Are there existing flood defences within 500m of the Site?	YES

The closest defences are adjacent north-east of the Site, in the form of high ground along the River Usk. These are not recorded as having a standard of protection. Therefore, this is not considered sufficient to protect against a 1 in 100-year event.

River — MODERATE TO HIGH

Flood risk

The Site is located within a Flood Zone 3, owing to its proximity to the River Usk, located adjacent north east. Environment Agency RoFRS data featured in the original report indicates that the area within the Flood Zone 3 is at a high defended risk of flooding. This includes agricultural buildings and a residential building (Gilestone) in the south-west.

More detailed undefended JBA data indicates that during a 1 in 100-year event, flood depths may reach and exceed 1m in the south-east and north-east of the Site, with shallower depths anticipated across a large section of the Site. This more detailed data suggests that the flood risk does not extend to the current built area of the Site. An internet search revealed that the Site is used for glamping; therefore, the flood risk could have an impact on any proposed glamping lodges. In addition, a review of the topography of the Site indicates that there is an elevation increase of approximately 2m from the river to the built area of the Site.

While the built area of the Site does not appear to be at risk of river flooding, large areas of arable land could flood to significant depths. As a result, crop yield could be lost during a flood event, with potential financial implications.

While there is not a significant risk of flooding at the built area of the Site, we have adjusted the risk rating to moderate to high due to the significant risk to arable land.

Please see the river flooding map for the location of the at-risk areas.

Coastal — VERY LOW

Flood risk

No significant risk has been identified.

Flood Analysis

Groundwater — MODERATE

Flood risk

Owing to the elevation of the Site above the water table and the permeability of the underlying geology, the Site could be at risk of groundwater flooding during times of increased rainfall or rising river levels. Due to the nature of the risk and topography of the Site, if groundwater was to emerge, it is unlikely to extend beyond the area of river risk. If the building has a basement, groundwater flooding could cause more of a problem and you may wish to take further action.

Surface Pluvial — MODERATE

Flood risk

The initial screening report identified a high risk of surface water flooding at the Site.

A review of JBA depth data indicates that depths may reach and exceed 1m in a small area in the south-east. But this appears to be restricted to the banks of a watercourse. Outside of the on-Site drainage channels, surface water flooding may reach up to 0.7m in the south-east and up to 0.5m in the centre of the Site during a 1 in 75-year flood event. Similar expected flood extents were identified in a 1 in 200-year flood event, with depths reaching up to 0.9m in the south-east and up to 0.5m in the centre of the Site. However, the buildings do not appear to be at risk of surface water flooding in either flood event scenario.

While significant depths have been identified on Site, these are largely restricted to the banks of watercourses and areas surrounding these. As a result, we have reduced the risk to moderate.

Please see the surface water flooding map for the location of the at-risk areas.

Other — MODERATE

Flood Risk

Have any recorded flood events occurred at the Site or within 100m?	YES

The Site flooded in 1979, at which time the channel capacity was exceeded. Defences were not present at this time. No flood events have been recorded since this event occurred.

In addition, drainage channels are located on Site. These do not pose an immediate risk however they could pose a risk to the areas surrounding these watercourses during extreme storm events or in the event of a blockage.

Standard Advice Checklist

Actions

As flood events can be unexpected, we recommend you consider the below actions and enquiries regardless of the flood risk identified within this report, to prepare for flooding and minimise any potential impacts. This section also highlights any issues that may be relevant to your transaction that fall outside the flood risk analysis above.

Flood Warnings

Sign up to free Flood Warnings or Alerts. These cover river, coastal and groundwater risk. You can check whether you lie within a Flood Warning Area and sign up for the service here: https://www.gov.uk/sign-up-for-flood-warnings

Flood Action Plan and Flood Evacuation Plan

Consider the development of both in order to prepare for a flood event. A Flood Action Plan can include shutting off building services and moving valuables to a safe place. A flood evacuation plan is designed to ensure safe access and egress from the Site.

Business Continuity Plan

Incoporate flood risk into a business continuity plan to minimise disruption in the event of a flood and allow efficient recovery.

Drainage Maintenance

Drainage within the boundary of the Site is the responsibility of the Site owner. It is prudent to review current drainage provisions at the Site on a regular basis, to ensure drains are free from blockages (a build up of leaves and debris, etc.)

You should consider setting up a regular contract and ensure drains are cleared at least every 6 months, as well as before and after high intensity rainfall events. Ensure that this contract service also includes emergency call outs.

On-Site Watercourses

The on-Site watercourses present a potential risk of flooding during extreme storm events. We recommend you regularly check the watercourses for blockages, unusual changes to water flow, and collapsed or badly damaged banks.

Riparian ownership

Living near a watercourse comes with certain responsbilities. A riparian owner describes anyone who owns a Site where there is a watercourse within or adjacent to the boundaries of their Site. Under common law, a riparian owner has rights and responsibilities relating to the stretch of watercourse that falls within or beside the boundaries of their land (including keeping the watercourse free of any obstructions that could hinder normal water flow). If the riparian owner fails to carry out their responsibilities, this could result in civil action. For more information, please visit https://www.gov.uk/guidance/owning-a-watercourse

Enquiries

We recommend making the following enquiries prior to purchase of the property.

Vendor Enquiries

We recommend sending enquiries to the vendor regarding the extent and impact of any historical flood events at the Site.

Insurance

Make enquiries regarding the availability and cost of insurance and ensure it covers against all major sources of flood risk.

Future Considerations

This assessment is not designed to meet any planning requirements. If you choose to extend/redevelop in the future, you should consider the below.

Flood Risk Assessment

The National Planning Policy Framework (NPPF) sets out government policy on development and flood risk in England. It aims to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas of highest risk. Equivalent legislation exists in Wales (Tan 15) and Scotland (Scottish Planning Policy).

Under the NPPF, any site that lies within a Flood Zone 2 or 3 and/or is over 1 hectare in size is required to submit a full Flood Risk Assessment with the planning application. It must demonstrate how to manage flood risk so the development will remain safe throughout its lifetime; and will need to be submitted to the Local Authority for approval.

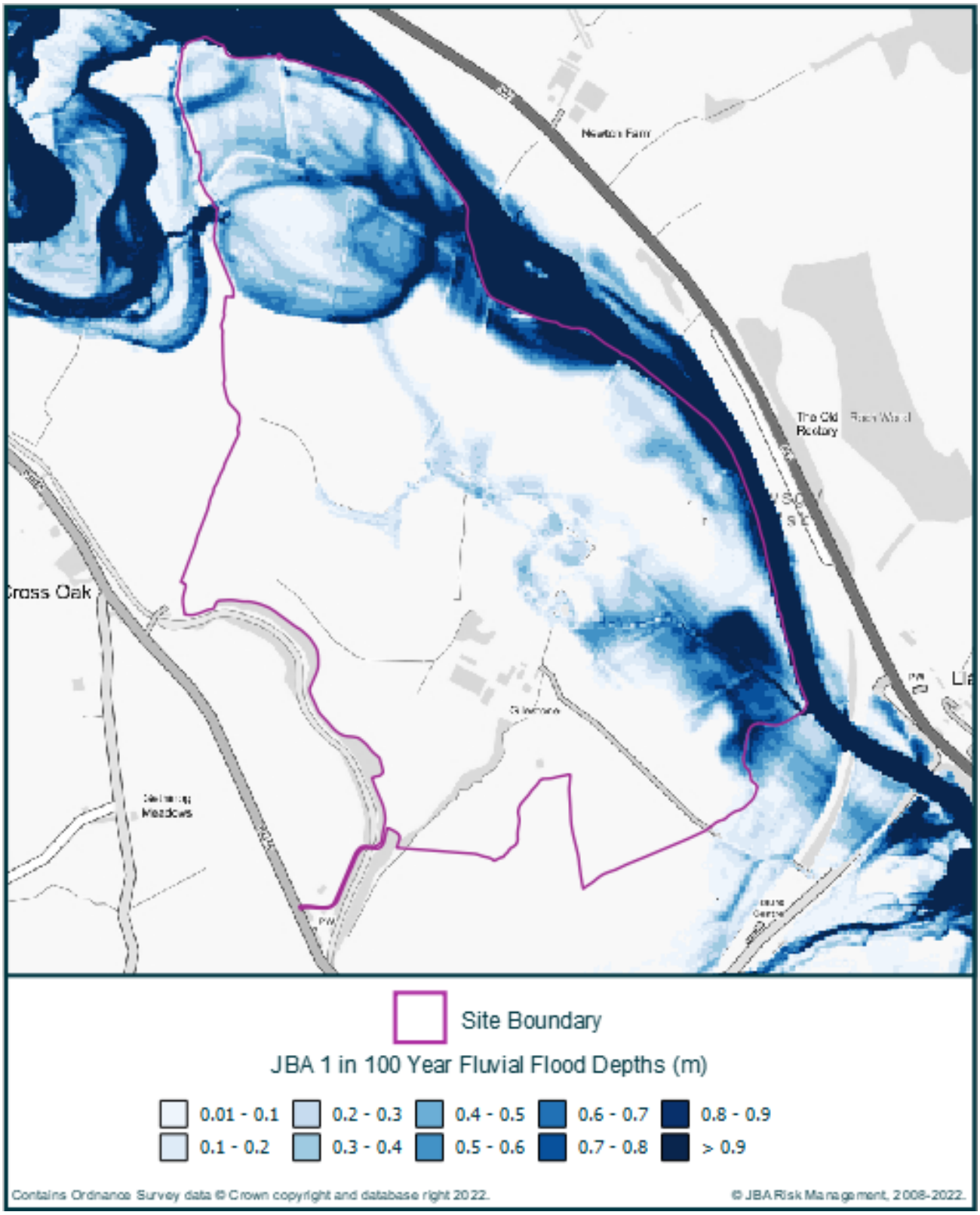
Sustainable Drainage Systems

Sustainable Drainage Systems are a range of techniques for managing water runoff at a site. The planning authority may require you to consider Sustainable Drainage systems (SuDS) as part of the development's drainage strategy. Consult the Local Authority on scope, but requirements range from submission of a drainage hierarchy to submission of a Detailed Drainage Strategy.

Properties within 50m of a main river

In England, any Site within 50m of a main river where development is proposed are required to consult with the Environment Agency prior to submission of any planning application.

Flood Maps


Site Boundary
JBA 1 in 100 Year Fluvial Flood Depths (m)
0.01 - 0.1
0.1 - 0.2
0.2 - 0.3
0.3 - 0.4
0.4 - 0.5
0.5 - 0.6
0.6 - 0.7
0.7 - 0.8
0.8 - 0.9
> 0.9
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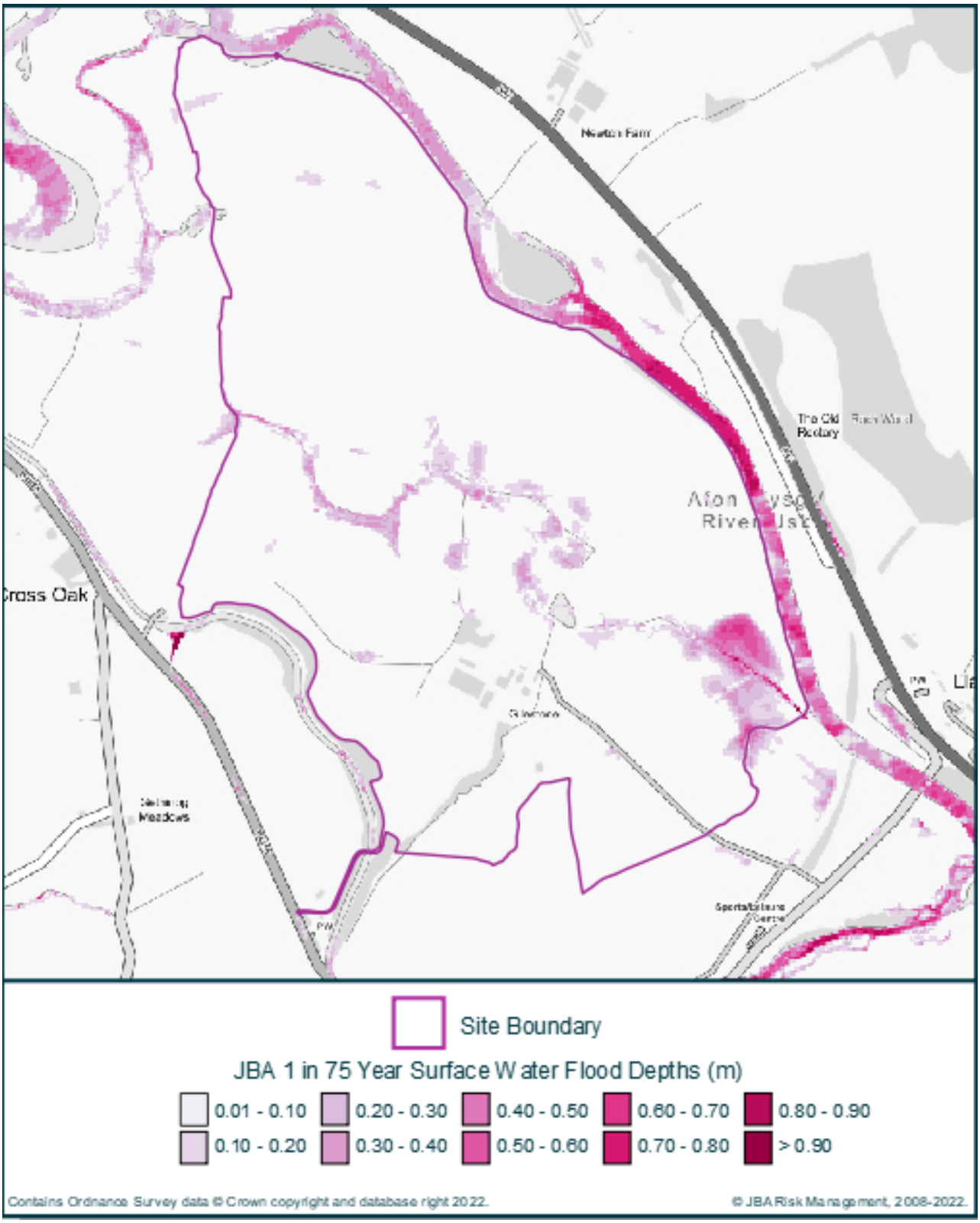
Flood Maps


Site Boundary
JBA 1 in 75 Year Surface Water Flood Depths (m)
0.01 - 0.10
0.10 - 0.20
0.20 - 0.30
0.30 - 0.40
0.40 - 0.50
0.50 - 0.60
0.60 - 0.70
0.70 - 0.80
0.80 - 0.90
> 0.90
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Know and Manage your Flood Risk

Understanding Flood Risk

It is important to understand that flooding can happen anywhere, even if you don't live near to a watercourse or the sea. This is because in periods of very heavy rainfall, water can collect in many places where there may be a dip in the ground or a barrier blocking the water's path. Severe rainfall events can also lead to water rising from under the ground as the ground becomes saturated and water is unable to drain away naturally.

The impacts of flooding are not just financial as flooding can also devastate lives, causing both severe disruption at the time as well as continued disturbance through the drying out period in the months that follow. Therefore, it is important to consider any potential flood risk when purchasing a Site.

Insurance may be expensive or difficult to obtain if your Site is at risk, so it is vital to understand the risk of flooding of your Site or before purchasing a Site.

Flood Protection Measures

Flooding can usually be managed by the installation of flood protection measures, either on or within the building or across the Site. Flood protection measures can be divided into two categories; flood resistance and flood resilience. Where a risk has been identified and protection measures are considered appropriate, a surveyor will be best placed to advise on the configuration.

The flood source, likely depths and building design and age will inform the best choice of permanent resistance, temporary resistance, or resilience. Other factors will play a part in the decision-making process, such as cost, visual impact, ease of deployment and product performance. The best answer will most likely involve a combination of products.

Options	Summary
Resistance	Flood resistance measures are physical barriers designed to keep water out of the building and can either be mountable or passive. They include flood doors or guards, non-return valves on plumbing and airbrick covers. If buying products, make sure they are kitemarked.
Resilience	Flood resilience measures are incorporated into building design to minimise damage. Once flood water subsides a resilient design avoids a major drying out spell or gutting. Examples include raising electrical sockets and the use of resilient plaster.

Glossary of Terms

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.

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.

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.

Surface Water Flooding
Surface water 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
A common way of expressing how likely a flood event is to occur is 'return period'. For example, a 1:100 year event has a 1% likelihood of occurring in any given year, whereas a 1:200 year event has a 0.5% likelihood of occurring in any given year. The 1:200 event would be expected to result in a greater extent of flooding than the 1:100 event, as it would be more severe, but the likelihood of it occurring is lower.

1 in 75 year return period: 1 in 75 year flood event (1.3% Annual Probability of flooding).

1 in 100 year return period: 1 in 100 year flood event (1% Annual probability of flooding).

1 in 200 year return period: 1 in 200 year flood event (0.5% Annual probability of flooding).

Flood Zones
Created for land-use planning, Flood Zones map the likelihood of flooding assuming no defences are present, fail or are over-topped.

Flood Zone 1 An area of low probability of flooding – a flood return period of 1 in 1,000 or more.

Flood Zone 2 An area of medium probability of flooding – 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 3 An area of high probability of flooding – a flood return period of less than 1 in 100 for river and less than 1 in 200 for coastal.

RoFRS (Risk of Flooding from River and Sea)
A dataset provided by the Environment Agency, which takes into account defences to assess the risk of flooding in an area.

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.

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 situation and reduces the risk of suffering available losses. For example, it may cover such items as emergency accommodation and computer back up off Site.

Flood Resistance Measures
These measures are designed to prevent flood water from entering the building and external areas at the 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 Site.

Flood Risk Assessment
A full Flood Risk Assessment (FRA) Report is a bespoke report required under NPPF 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 Risk Methodology

About this Report

The Flood Solutions Consult Commercial report is a more in-depth desktop flood risk report, designed to enable property professionals to understand the risk of flooding at the Site.

The report outlines the overall risk of flooding, provides a clear summary of flood risk issues and the expected impact to the Site. Specific steps to mitigate the impact of a flood event are included based upon the data reported (where available), as well as an indication of how flood risk affects the availability of insurance for the Site. The report has been produced and quality-checked by a qualified consultant using the data contained in this report.

Flood Risk Analysis and Risk Ratings

Argyll provides individual flood risk rating based on the likely depths of flooding for the four main sources of flooding (river, coastal, groundwater and surface water), shown in the flood risk gauges. A fifth gauge provided analysis of 'other factors'. The purpose of this gauge is to account for risk that is not tied to modelled data e.g. historical floods or proximity to watercourses. Our overall risk rating is based on the worst case reported in the gauges.

This analysis takes into account any existing flood defences that are intended to protect the Site and assumes that these work as designed. In Scotland, we not do not have access to data from the Scottish Environmental Protection Agency (SEPA). As a result, we are unable to take into account defences. Consequently, in Scotland our assessment is always based on the undefended risk. The analysis also takes into account the other information contained in those data sections of the report which are 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.

How is the overall flood risk calculated?

Impact	We consider the expected depths of flooding at your building/operational areas. Low depths, for example, 10cm, are unlikely to put people at risk but water damage to buildings and contents may be significant without any flood protection. High water depths, for example 1m, may severely threaten the safety of people and may cause extensive damage to buildings. It may be dangerous to keep deep floods out of a building because of the large weight of water pressing against the wall.
Likelihood	Flood risk is based on probability and different approaches to flood protection may be needed depending upon how likely flooding is expected. A common way of expressing how likely a flood event is to occur is 'return period'. For example, a 1:100 year event has a 1% likelihood of occurring in any given year, whereas a 1:200 year event has a 0.5% likelihood of occurring in any given year. The 1:200 event would be expected to result in a greater extent of flooding than the 1:100 event, as it would be more severe, but the likelihood of it occurring is lower.

This report considers both the impact and likelihood of a flood event to occur, which is reflected in the risk ratings.

Flood Risk Methodology

Flood Risk Analysis and Risk Ratings

For river flooding and coastal, the overall assessment is generated from Environment Agency RoFRS and Flood Zone data, along with undefended JBA Risk Management data (1:100 year for river and 1:200 year for coastal). For surface water, the overall assessment is generated from JBA Risk Management 1:200 year and 1:75 year rainfall event data. For groundwater, the overall assessment is generated from Geosmart Information's GW5 map. The table below demonstrates the methodology for the individual flood risk gauges.

Risk Rating	Meaning
Very Low; Low; Low to Moderate	Our analysis has revealed that the Site is not considered to be at significant risk of flooding. It is not considered necessary to undertake further investigation into the flood risk at the Site. However, some prudent advice may be provided.
Moderate	Our analysis has revealed that some flood risk exists. However, this is expected to be associated with an 'extreme' event and/or have minimal impacts. Practical advice will be provided. Please refer to our recommendations section.
Moderate to High; High	Our analysis has revealed a significant risk of flooding which should be addressed. Please refer to our recommendations section.

Limitations of the Report

This report has been published by Argyll Environmental "Argyll". It has been prepared on the understanding that it is to be used for an individual transaction.

Whilst every effort is made to ensure the details in the report are correct, Argyll cannot guarantee the accuracy or completeness of such information or data, nor identify all the factors that may be relevant. If you are a private individual using this report Argyll recommends that you discuss its contents in full with your professional advisor.

This report does not take into account sewer flooding risk. 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 and details of properties subject to sewer flooding are normally kept for between two and five years. These registers are not necessarily complete as not all episodes of past flooding may be recorded.

The response to the 'Insurance' question on the overview page does not take into account previous claims arising from any type of flooding, nor for non-flood related risks such as subsidence. Based on the data assessed within this report, an indication of whether the Site is likely to be insurable for flood risk is provided. Our opinion does not take into account any historic episodes of flooding or previous insurance claims arising from flooding at the Site.

Flood Risk Methodology

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Copyright Statement

Data Providers

Contact Details

Please see below the contact details of all those referred to within this report.

Landmark Information Group	Imperium Imperial Way Reading RG2 0TD	T: 0844 844 9966 E: helpdesk@landmark.co.uk
Environment Agency National Customer Contact Centre (NCCC)	PO Box 544 Templeborough Rotherham S60 1BY	General: 03708 506 506 Floodline: 0845 988 1188 E: enquiries@environment-agency.gov.uk
Geosmart Information	PO Box 544 Templeborough Rotherham S60 1BY	T: 01743 276 150 E: info@geosmartinfo.co.uk
JBA Risk Management - Head Office	JBA Risk Management Ltd No. 1 Broughton Park Old Lane Broughton Skipton North Yorkshire BD23 3AQ	T: 01756 799 919 E: info@jbarisk.com

Consumer Protection

Important Consumer Protection Information

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Tel: 03300 366 115

Email: orders@argyllenviro.com

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TPOs Contact Details:

The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire
SP1 2BP

Tel: 01722 333306
Fax: 01722 322296
Website: www.tpos.co.uk
Email admin@tpos.co.uk

Argyll Environmental Complaints Procedure

If you want to make a complaint to Argyll Environmental, we will:

- Acknowledge it within 5 working days of receipt
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time
- Provide a final response, in writing, at the latest within 40 working days of receipt
- Liaise, at your request, with anyone acting formally on your behalf

Complaints should be sent to:

Legal Director
Landmark Information Group Limited, trading as Argyll Environmental
1st Floor
98 - 99 Queens Road
Brighton
BN1 3XF

Tel: 03300 366 115
Email: orders@argyllenviro.com

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs):
Tel: 01722 333306,
Email: admin@tpos.co.uk

We will co-operate fully with the Ombudsman during an investigation and comply with his final decision.