

36 ST JOHN'S ROAD

- FLOOD RISK ASSESSMENT-

1. INTRODUCTION

Site Location: 36 St John's Road, Caversham, RG4 5AL

Proposed Development: The proposed development project encompasses alterations to the existing residential building located at 36 St John's Road. The undertaking involves the following key actions:

Single-Storey Rear/side Extension: At the rear of the property, a single-storey extension is planned. This construction aims to extend the living space on the ground floor, opening up new possibilities for interior layout and garden access, and fostering a more integrated indoor-outdoor living experience.

It is imperative that this extensive development initiative is aligned with all requisite guidelines and complies with the appropriate flood risk management protocols to ensure safety and sustainability. To this end, this flood risk assessment is developed to analyze and address any potential flood risks associated with the proposed development, leveraging a data-driven approach to propose mitigative strategies that are grounded in the guidance issued by the Department for Environment, Food & Rural Affairs and the Environment Agency published on 26 March 2014.

This introduction sets the stage for a detailed exploration of flood risks and mitigation strategies to ensure that the proposed developments not only enhance the functionality and aesthetic appeal of the property but also adhere to safety standards and sustainable practices outlined in the government guidelines. The subsequent sections will delve into the methodologies employed in this assessment, the existing site conditions, potential sources of flood risk, and the management and mitigation strategies that will be applied to secure the development against flood risks. By examining the flood risks from various angles including fluvial, pluvial, and groundwater perspectives, this assessment aims to present a comprehensive overview of the flood risk landscape and propose strategies to navigate it effectively.

2. METHODOLOGY

To appropriately evaluate the potential risks and delineate a strategy for flood risk management in the proposed development site, the following methodology will be implemented:

Historical Analysis: To undertake a robust flood risk assessment, an examination of the historical data concerning flood events in Reading and Caversham will be of paramount importance. This will involve analyzing past flood events including those in 1947, 2003, and 2014 to understand the extents of flooding during those periods. By studying the causes and impacts of these events, such as the specific areas submerged, road closures, and the levels of water rise at Caversham Lock during different years, we can better predict potential risk areas and identify measures to mitigate future flood risks.

Geological Study: A detailed geological study of the Caversham area will be carried out to grasp the full implications of the land structure, which has largely been formed from silt and alluvium deposits by the River Thames over thousands of years. Understanding the geological substrate will help in creating structures that are resilient to flood impacts.

Climate Change Considerations: Our assessment will incorporate the potential effects of climate change which threatens to increase the frequency and intensity of flooding in the area. The long history of flooding in the region, coupled with the predictions for climate change, necessitates forward-thinking solutions that will cater

to potential rise in flood levels over the coming years.

Flood Modelling: Through flood modelling exercises, we have identified over 700 properties in Caversham and north Reading that are currently at a risk of flooding from the River Thames. We anticipate this number to rise due to climate change. The flood modelling would be instrumental in understanding the possible scenarios of flooding in the coming years and the areas that would be most affected, aiding in the development of a comprehensive risk mitigation strategy.

Community Engagement: Considering that Caversham forms the largest community at risk from the Thames without existing or proposed flood defenses, the methodology will involve actively engaging with the community to understand their experiences and gather firsthand data on flood impacts. This will help in crafting solutions that are community-centric and cater to the real needs of the population.

Data Collection: The methodology will be grounded in extensive data collection from government records, community inputs, geological surveys, and flood modelling results. This data will be the cornerstone in building a risk assessment that is both detailed and reflective of the ground realities.

Consultation: The project will liaise with local authorities and the Environment Agency for guidance and to ensure that all the necessary data is available for a detailed analysis. This will also involve maintaining a channel of communication for necessary approvals and ensuring that the development is in line with the guidelines provided by the Department for Environment, Food & Rural Affairs and the Environment Agency.

The approach towards the risk assessment is designed to be comprehensive, taking into account the historical, geological, and climatic factors influencing the flood risks in the area. By deploying a multifaceted methodology, the objective is to ensure that the proposed development not only stands resilient to potential floods but also contributes positively to the broader community's flood defence mechanism.

Potential sources of flood risk: The site is relatively level, with minimal risk of rainwater flooding. The primary flood risk arises from the River Thames, which is located approximately 400 meters away from the site.

3. FLOOD RISK MANAGEMENT

To establish a robust flood risk management strategy that aligns with the planning and regulatory stipulations outlined in Section 17 of the Planning Practice Guidance and the advice from the Environment Agency, we are proposing the following measures for the new development:

Compliance with Regulatory Standards for Small Residential Developments:

Extension Size: Following the stipulations set in Section 17 of the Planning Practice Guidance, the proposed extension will be designed to remain under the 250sqm threshold, thereby aligning with the guidelines for small residential developments.

Floor Levels: According to the Environment Agency's advisory, the floor levels for the new extensions will not be situated lower than the current dwelling floor levels to prevent water buildup during flood events.

Floor Level and Damp Proof Course (DPC):

Finished Floor Level (FFL): It is strategically planned to site the extensions at the same level as the FFL to maintain a uniform and practical floor layout while adhering to flood risk management principles.

DPC Placement: The damp proof course (DPC) will be implemented at a minimum elevation of 150mm above the adjacent ground level, fostering a built environment resistant to moisture ingress and potential flooding scenarios.

Surface Water Management:

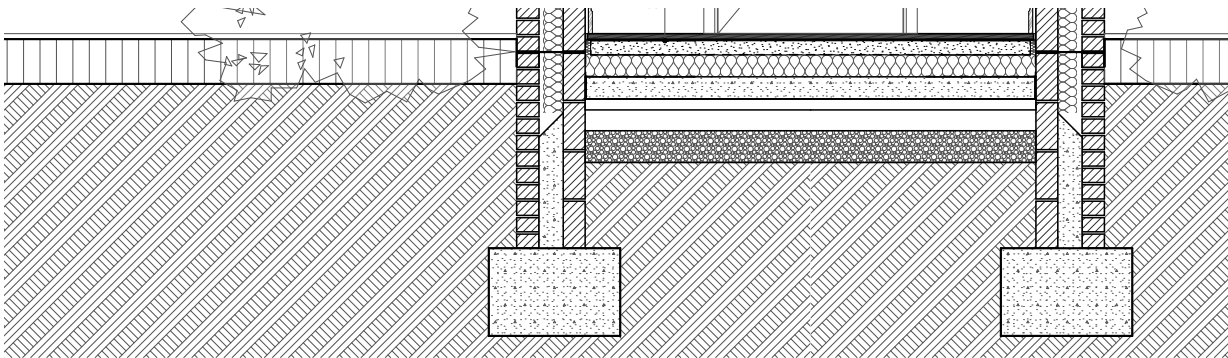
Precast Block and Beam Floors: A notable aspect of the design involves the integration of precast block and

beam floors, creating a void space of 200mm between the underside of the slab and the ground level and flood resilient material under flood plain level. This structure is formulated to minimise the potential impact of surface water flooding, offering a level of protection to the building structure.

Soakaway System: Based on the outcomes derived from site percolation test, we have decided to facilitate the management of all surface water drainage through a new soakaway system. This initiative stands central to our flood risk management strategy, equipped to effectively control the flow of surface water and reduce the likelihood of flooding events impacting the development site.

In framing this strategy, we remain steadfast in our commitment to adhere to the recommendations and regulations outlined by the pertinent authorities, thus ensuring the development embodies resilience and safety against potential flood risks. This also involves a keen focus on sustainable development, through measures such as the incorporation of a soakaway system, that caters to the effective management of surface water while maintaining ecological balance.

Our flood risk management plan underscores a strategic approach that integrates both regulatory compliance and innovative design solutions, thereby working towards fostering a development that stands resilient in the face of flood risks while offering a safe and sustainable living environment. Detailed blueprints and schematics will follow in subsequent sections to offer a deeper understanding of the proposed structural dynamics and water management systems.



04 CONCLUSIONS

The proposed development site located at 36 St John's Road is situated in a high-risk flood area, specifically flood zone 3, characterized by a 1% annual probability of river flooding, translating to a 1 in 100-year risk of occurrence. The demarcation and details of this flood zone are clearly illustrated in the map provided in Annexe 1, which serves as a reference to understand the flood risk in the geographical context of the development site.

Given the development's anticipated lifespan of 50 to 100 years, it is imperative to meticulously evaluate the flood risks pertinent to this specific site to implement mitigation strategies that stand robust over time. Here we break down the site-specific risks and potential measures to mitigate them:

High-Risk Zone Awareness: Being situated in flood zone 3 necessitates heightened awareness and the integration of foresight in the development planning to contend with the high risk of flooding. This includes planning the built environment to be resilient to such events through elevated floor levels and robust surface water management systems as outlined in previous sections.

Long-Term Planning: The expected development lifetime underscores the need for a long-term vision in planning and designing flood risk mitigation measures. It is crucial to factor in the potential changes in climatic patterns and geological shifts that might influence flood patterns in the coming decades.

Infrastructure Resilience: The infrastructure designed should embody resilience, with materials and constructions that are capable of withstanding the adverse effects of potential flood events. Incorporating elements like precast block and beam floors and a carefully designed soakaway system are vital strategies in this regard.

In light of these site-specific risks, it is our duty to ensure that the development is carried out with the utmost sensitivity to the potential flood risks and with an unwavering commitment to fostering safety and resilience. The forthcoming phases of planning and development will remain oriented towards upholding this commitment, with regular consultations with flood risk specialists to tailor solutions that are both innovative and grounded in a deep understanding of the site-specific risks elucidated here.

ANNEXE 1

ENVIRONMENT AGENCY FLOOD MAP FOR PLANNING

Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
472209/174760

Created
27 Jan 2025 15:11

Your selected location is in flood zone 3, an area with a high probability of flooding.

This means:

- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see www.gov.uk/guidance/flood-risk-assessment-standing-advice)

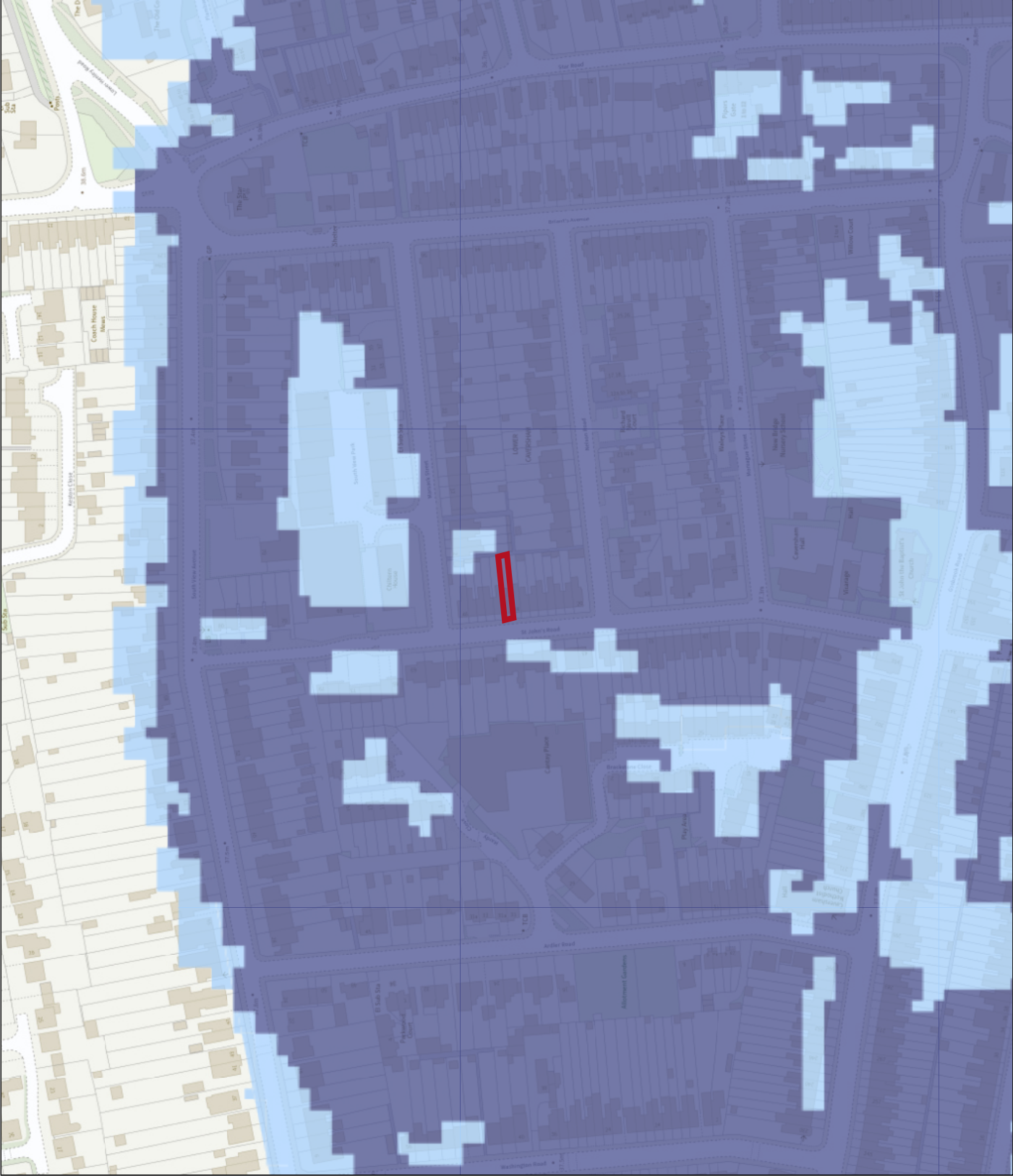
Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

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Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
472209/174760

Scale
1:2500

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Selected area

Flood zone 3

Flood zone 2

Flood zone 1

Flood defence

Main river

Water storage area

