6 Cassilis Road, Twickenham, TW1 1RU

Flood Risk Assessment

22.01.2025

FLOOD RISK ASSESSMENT

Please find below a summary of the desk study of the above site to determine the approach for flood risk and drainage strategy for the proposed development.

Flooding Information

As set out in the National Planning Policy Framework (NPPF), inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere. For these purposes:

“Areas at risk of flooding” means land within Flood Zones 2 and 3; or land within Flood Zone 1 which has critical drainage problems, and which has been notified to the local planning authority by the Environment Agency.

“Flood risk” means risk from all sources of flooding - including from rivers and the sea, directly from rainfall on the ground surface and rising groundwater, overwhelmed sewers, and drainage systems, and from reservoirs, canals and lakes and other artificial sources.
Flooding information for Planning from the Environment Agency (EA) has indicated the site is located within Flood Zone 1. As the site is within Flood Zone 1, no further data was required from the Environment Agency.
It should be noted that the site is adjacent to Flood Zone 3, but that this Zone is defended by the Environment Agency flood defences. Therefore, there should be no risk to the adjacent area in a typical extreme storm provided the defences remain intact. It can also be assumed that the probability of any risk from breach or overtopping is minimal.

Sequential Test

Local Planning Authorities (LPA) are encouraged to take a risk-based approach to proposals for development in or affecting flood risk areas through the application of the Sequential Test and the objectives of this test are to

steer new development away from high-risk areas towards those at lower risk of flooding.

However, in some areas where developable land is in short supply, there can be an overriding need to build in areas that are at risk of flooding. In such circumstances, the application of the Sequential Test is used to ensure that the lower risk sites are developed before the higher risk ones.

NPPF (PPG25) states that the Sequential Test should be applied at all stages of the planning process and the starting point is generally the Environment Agency's flood zone maps.

These maps and the associated information are intended for guidance and cannot provide details for individual properties. They do not consider other considerations such as existing flood defences, alternative flooding mechanisms and detailed site-based surveys. They do, however, provide high level information on the type and likelihood of flood risk in any area of the country.

The site is within Flood Zone 1 and so would not require a sequential test assessment.

Exception Test

The Exception Test is an additional test to be applied by decision-makers following application of the Sequential Test. The Exception Test has two elements as shown below, both of which must be satisfied for development in a flood risk area to be considered acceptable.

The Exception Test is only appropriate for use when there are large areas in Flood Zones 2 and 3, where the Sequential Test alone cannot deliver acceptable sites, but where some continuing development is needed for wider sustainable development reasons, considering the need to avoid social or economic blight and the need for essential civil infrastructure to remain operational during floods.

For the Exception Test to be passed:

It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a SFRA; and,

A site-specific FRA must demonstrate that the development will be safe for its lifetime, without increasing flood risk elsewhere and, where possible, reducing flood risk overall.
The site does not require an exception test in accordance with NPPF.
Historic Flood Data
The Environment Agency and Richmond Council have no information indicating that the site was flooded historically from fluvial sources.

Groundwater

Groundwater flooding is caused by the emergence of water originating from sub-surface permeable strata. A ground water flood event results from a rise in ground water level, sufficient for the water table to intersect the ground surface and inundate low lying land. Groundwater floods may emerge from either a single point or diffuse locations.

The underlying strata throughout the area and investigations into the SFRA geology data suggest that there is a risk of groundwater emergence which is likely to relate to the geology of the area. However, groundwater flooding risks are often highly localised, and dependent upon geological interfaces between permeable and impermeable subsoils. Therefore, sustainable construction techniques for surfacing will minimise any potential groundwater risk.

The Richmond SFRA (interactive mapping) has information indicating that the site is at an are with between 50% and 75% chance of elevated groundwater levels. It also indicates that the site is within an area with potential for groundwater to occur at surface.

Given the nature of the development, it is anticipated that groundwater risk is low, but the potential for an elevated or perched groundwater table should be considered within the drainage strategy for the site.

Flooding from Sewers

Flooding from sewers can occur because of different reasons; if sewers are blocked during the heavy rainfalls, or if a sewer cannot provide adequate capacity, then flooding can cause a large amount of damage.

The Richmond SFRA indicates the site is within an area with between 0 and 10 historic flood records. It is not known if the site was affected.

Flooding from Reservoirs

Reservoir flooding is extremely unlikely to happen. There has been no loss of life in the UK from reservoir flooding since 1925. All large reservoirs must be inspected and supervised by reservoir panel engineers. As the enforcement authority for the Reservoirs Act 1975 in England, the Environment Agency ensures that reservoirs are inspected regularly, and essential safety work is carried out.

However, in the unlikely event that a reservoir dam failed, a large volume of water would escape at once and flooding could happen with little or no warning. If the site is within a risk area, plans should be made for safe evacuation and escape. Residents may need to evacuate immediately, know the safest route to safety, and be ready to follow the advice of emergency services.

The EA data indicates that the site is at no risk from reservoir flooding.

Surface Water Flooding

Overland flow / surface water flooding typically arise because of intense rainfall, often of short duration, that is unable to soak into the ground or enter drainage systems. It can run quickly off land and result in localised flooding.

The Environment Agency has produced illustrative mapping (Flood Map for Surface Water) relating to flooding risks from surface water. They are classified as Flood Hazard Maps for the purpose of the Flood Risk Regulations 2009. These maps are the next generation on from the previous “Area Susceptible to Surface Water Flooding” maps, which are contained within the SFRA.

The EA maps show high resolution image and indicative flow paths for pluvial events. The maps are based on coarse level data and indicate ridges, valleys, and flat spots where water would collect. Typically, the flow paths follow valleys, rivers, and watercourses.

The surface water maps, and the associated information are intended for guidance only and cannot provide details for individual properties. They do, however, provide high level information and indicate areas in which surface water flooding issues should be investigated further. The risk categories are classified as follows:

Very low probability of flooding – This zone is assessed as having less than a 1 in 1000 annual probability of surface water flooding.

Low probability of flooding – This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of surface water flooding.

Medium probability of flooding - This zone comprises land assessed as having between a 1 in 30 and 1 in 100 annual probability of surface water flooding.

High probability of flooding – This zone is assessed as having greater than a 1 in 30 annual probability of surface water flooding.
A review of the EA mapping indicates there is minimal risk of surface water flooding to the site.
The above identifies that the site is appropriate and sustainable in terms of flood risk in accordance with the NPPF. If you have any further questions, please do not hesitate to contact me.

CUBO Design Ltd

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