

	Flood Zone 3a	Flood Zone 2	Flood Zone 1
Planning Acceptability	Table 4-1, taken from the Flood Risk Vulnerability and Flood Zone Compatibility in the PPG, highlights that 'Highly Vulnerable' development should not be permitted.	Development acceptable	Development Acceptable
Site-specific FRA	<p>Required for all development including major, minor, change of use and householder applications which would alter the footprint or add levels – flood risk from all sources must be assessed. This must include the impact of climate change over the lifetime of the development using the Environment Agency's climate change allowances: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances</p> <p>It is particularly important to assess the risk of flooding from a tidal breach and rapid inundation zones (Figure 8 to Figure 12).</p> <p>Further consultation with the Environment Agency and Thames Water is essential to obtain up to date flood risk information.</p> <p>Developments proposed adjacent to the River Thames should follow the Estuary Edges¹ design principles, aimed at providing an ecological design guide for softening the riverside 'edges' to encourage natural wildlife into urban estuaries.</p>	<p>Required for all development including major, minor, change of use and householder applications which would alter the footprint or add levels – flood risk from all sources must be assessed. This must include the impact of climate change over the lifetime of the development using the Environment Agency's climate change allowances: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances</p> <p>It is particularly important to assess the risk of flooding from a tidal breach and rapid inundation zones (Figure 8 to Figure 12).</p> <p>Further consultation with the Environment Agency and Thames Water is essential to obtain up to date flood risk information.</p>	<p>Only required if:</p> <ul style="list-style-type: none"> • The site is more than 1 hectare • The site is less than 1 hectare but includes a change of use to a more vulnerable class and could be affected by sources of flooding other than rivers and the sea • The site is located within a surface water management zone • The proposal features self-contained basements. <p>Flood risk from all sources must be assessed. This must include the impact of climate change over the lifetime of the development using the Environment Agency's climate change allowances: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances</p> <p>Further consultation with the Environment Agency and Thames Water is essential to obtain up to date flood risk information.</p>

¹ Thames Estuary Partnership (2023) Estuary Edges Design Principles. Available from: <https://www.estuaryedges.co.uk/design-principles/>

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Drainage Strategy & SuDS	Required for all major developments		
	Drainage Strategies must include the required information to demonstrate that surface water runoff will be managed in accordance with Policy 35J of the City Plan and Policy SI 13 of the London Plan. They must evidence and assess key design information for surface water management in accordance with the CIRIA SuDS Manual and the SuDS Non-statutory technical standards.		
	Drainage strategies should implement SuDS to manage surface water runoff in line with the drainage hierarchy. Consideration of SuDS in Westminster should particularly be given to rainwater harvesting and recycling, pervious surfaces and green/blue roofs. The four pillars of SuDS should also be considered in any SuDS scheme: water quantity, water quality, biodiversity and amenity.		
	Developers should aim for a greenfield runoff rate wherever possible; where this is not possible, developers should demonstrate how all opportunities to minimise site runoff have been taken to get it as close to greenfield standard as possible. The drainage strategy must include reference to maintenance and management of the SuDS features to ensure that the system remains fully operational at all times.		
	Developments should seek to reduce the amount of impermeable areas where possible. Developers should also aim to incorporate pervious surfaces in hardstanding areas to provide flood mitigation in both new and existing developments. In areas where infiltration is not feasible, pervious surfaces should be underlain with underground storage systems.		
Mitigation measures	A Drainage Strategy checklist is provided in Appendix C; this must be completed and submitted with a major development planning application. The GLA London Sustainable Drainage Proforma is also required to accompany drainage strategies submitted with planning applications.		
	The Westminster surface water modelling (Figure A-14 to Figure A-16) should be utilised for the assessment of surface water to the proposed development.		
Basements	Appropriate mitigation measures should be identified dependent on the predicted flood depths. This may include property flood resilience measures which are dependent on the vulnerability of the site. Design drawings should indicate the floor levels to confirm they are a suitable height above predicted flood depths.		
	Basement dwellings are categorised as ‘Highly vulnerable’ and should therefore not be permitted. Other basement developments are restricted to ‘Less Vulnerable’ or ‘Water compatible’ uses only. All basements must have internal stair access to a higher flood above the design flood level to be utilised in an emergency. Evidence must be provided to support this assessment.	‘Highly vulnerable’ dwellings may be permitted for development. All basements must have internal stair access to a higher flood above the design flood level to be utilised in an emergency. Evidence must be provided to support this assessment.	All self-contained basements or basements where there is evidence of flooding from surface water, groundwater or sewer flooding, must provide a site-specific FRA and a structural methodology statement and appropriate self-certification from a suitably qualified engineer. All basements at risk of flooding from surface water must have access situated 300mm above the design flood level to be utilised in an emergency. Evidence must be provided to support this assessment.

	Flood Zone 3a	Flood Zone 2	Flood Zone 1
Basements	<p>Self-contained basement dwellings should be located outside of areas of surface water flood risk. If building a basement extension in any area prone to surface water flooding steps should be taken to avoid increasing (and reducing) surface water flood risk for the site. A number of sustainable drainage measures can be used to reduce the surface water run-off from a site. Retrofitting of Sustainable Drainage Systems will be encouraged where appropriate.</p> <p>Basements may be more susceptible to sewer flooding; as a minimum, all drainage connections from basements to sewers should be fitted with a one-way valve to prevent drains flooding the basement if they surcharge. Basement development may impact groundwater flooding where the basement floor level extends into or close to existing groundwater. A site-specific FRA should assess where:</p> <ul style="list-style-type: none"> • Basements extend through the gravels below the perched water table into the underlying London Clay or which have their lower levels close to the level of Upper Aquifer (within 300mm of it); • Basements are in the vicinity of the historic routes of the Westbourne and Tyburn Rivers and their tributaries (Figure 1); and, • New basements proposed to existing houses with basements or lower ground floors, where the existing perched water level is close to the lowest occupied area of existing buildings. <p>As part of basement design, a geotechnical assessment should be carried out to ensure that that there are no groundwater related issues and that the basement is not displacing groundwater around it. Although it is noted that it is often a combination of the above types of flooding that leads to increased flood risk, the engineering design should take account of the specific combinations of geo-hydrological conditions on the site.</p> <p>In all basement development, applicants are encouraged to incorporate flood resistance and resilience measures as part of the design. This includes measures to prevent water ingress and to reduce flood damage should flooding occur. These may include placement of electrical circuits to minimise potential for damage, flood resistance doors, automatic closing air vents or demountable flood barriers/gates.</p>		
Contingency Planning	<p>'Essential Infrastructure' must remain safe and operational in a flood event, which should be reflected in contingency planning for the development</p> <p>Contingency planning for a development should include a Flood Warning and Emergency Plan to manage flood risk before, during, and after a flood. In accordance with the NPPF and PPG, contingency planning must include the following for the lifetime of the development:</p> <ul style="list-style-type: none"> • Details of all the flood risk sources present at the site development site. • Flood warning procedures for people accessing the development. • Potential mitigation measures following an assessment of the risks. • Information regarding safe access and egress points across the site, ensuring that they remain so during flooding. • Suitable evacuation plans that feature adequate routes and refuge areas, accounting for the potential length of evacuation time. • Emergency plans for 'dry islands (sites encircled by flooding) should still address this risk and provide appropriate management measures. 		