

Flood Risk Assessment Checklist

Site Details

Development Site (name and address)	
Summary of proposed works	
Location (Grid reference)	
Type of development	
Site Area (ha)	
Number of Units (if applicable)	

FRA Requirements	Reference (To be completed by applicant)	Submitted (Tick as appropriate)
Site Details and Surveys		
Information detailing the proposed development including location, type of development, flood risk vulnerability classification, number of units (if applicable) and site area (ha).		
Expected lifetime of the proposed development and how it has been estimated		
Existing surface water drainage arrangements		
Flood Risk and Climate Change		
Details on the flood zone		
An assessment of flooding from all sources and all flow routes (fluvial and tidal, surface water, sewers, groundwater and canals, water features and water mains), including historic information if applicable		
Details on the probability of flooding occurring from all sources		
Information on the predicted depth and level for the design flood level for all relevant sources of flood risk		
Details on the impact of climate change on flood risk		
Development Proposal Details		
Site changes that will occur as a result of the proposed development, including changes affecting existing surface water flow routes, hard-standing areas, landscaping and the nature of site usage		

FRA Requirements	Reference (To be completed by applicant)	Submitted (Tick as appropriate)
Details of the overall number of occupants and / or people accessing the building or site, compared with the current use		
Evidence demonstrating that basements have been designed with internal access and egress to a higher floor above the design flood level (for development proposals that include basements)		
Design plans showing floor levels relative to predicted flood depths		
Flood Risk Management		
Existing and proposed Greenfield / Brownfield runoff rates, volumes and routes generated on site		
SuDS measures and management techniques proposed to protect the site from flooding		
Evidence demonstrating that the proposed flood mitigation measures will not increase flood risk outside of the development site		
Evidence demonstrating that the proposed methods will reduce flood risk at the site		
Full information on the flood warning / contingency plan designed for the proposed site, including egress and access, evacuation plans, and mitigation measures		
Full information on the proposed mitigation measure such as PFR, to address predicted flood depths		

Drainage Strategy Checklist – Outline Application

An outline surface water drainage strategy is required to support the planning application. The drainage strategy must cover the following points and be accompanied by the GLA / Westminster Sustainable Drainage Proforma (available from <https://www.london.gov.uk/programmes-and-strategies/environment-and-climate-change/climate-change/surface-water/london-sustainable-drainage-proforma?ac-53021=53020>)

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Drainage Strategy Requirements	Reference (To be completed by applicant)	Submitted (Tick as appropriate)
Site Details and Surveys		
An OS-GPS Topographical Survey of the site		
General information on the existing site layout, including existing drainage systems (as appropriate)		
Outline assessment of existing geology and hydrogeology (including contamination)		
Information on local drainage systems, including sewer networks, watercourses and waterbodies		
Plans		
Location plan		
Proposed site plan		
Proposed landscaping including permeable and impermeable area (ha)		
Outline drainage layout including conceptual SuDS, showing how they link into the existing drainage network		

Drainage Strategy Requirements	Reference (To be completed by applicant)	Submitted (Tick as appropriate)
Calculations and Assessments		
Details of the proposed discharge location and SuDS features, demonstrating that the drainage hierarchy has been applied and that the proposals reflect policy and guidance		
Technical information on the following: <ul style="list-style-type: none"> • Percentage of impermeable area • Greenfield discharge rate / existing discharge rate (if brownfield) • Proposed discharge rate • Volume of attenuation required and the proposed solutions including indicative dimensions 		
<p>Outline drainage calculations demonstrating the principles of surface water drainage management at the site. Calculations should include peak discharge rates for greenfield conditions and the proposed site, assessing the 1 in 1 year, 1 in 30 year, 1 in 100 year and 1 in 100 year plus climate change storm events.</p> <p><i>This must demonstrate that run-off rates are restricted in line with policy requirements: wherever practicable, developers should aim for a greenfield runoff rate from their development; 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.</i></p>		

Drainage Strategy Checklist – Full, Reserved Matters and Discharge of Conditions Applications

A detailed surface water drainage strategy is required to support the planning application. The drainage strategy must cover the following points and be accompanied by the GLA / Westminster Sustainable Drainage Proforma (available from <https://www.london.gov.uk/programmes-and-strategies/environment-and-climate-change/climate-change/surface-water/london-sustainable-drainage-proforma?ac-53021=53020>)

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Site Area (ha)	
Number of Units (if applicable)	

Drainage Strategy Requirements	Reference (To be completed by applicant)	Submitted (Tick as appropriate)
Site Details and Surveys		
An OS-GPS Topographical Survey of the site		
General information on the existing site layout, including existing drainage systems (as appropriate)		
Ground Investigation details, providing details on geology, hydrogeology, infiltration rate(s), local groundwater level(s) and potential for site contamination		
Information on local drainage systems, including sewer networks, watercourses and waterbodies		

Plans		
Location plan		
A detailed masterplan of the site		
Proposed SuDS features including dimensions and storage capacity		
Proposed landscaping including permeable and impermeable area (ha)		
Detailed drainage layout demonstrating the location and dimension of every element of the proposed drainage system. This includes labelled details of the sizes (diameter, length dimensions), gradients and locations of the systems pipes and SuDS measures. Details are required to demonstrate how the proposed system ties into the existing drainage network		
Long and cross sections for the proposed drainage system including attenuation and conveyance features		
A plan for the management of construction to include; phasing and maintaining the system (including access arrangements, operational characteristics) and the details of any offsite works required, together with any necessary consents period and any impacts, such as diversions and erosion control		
A Health and Safety Plan for the proposed development (if appropriate)		
Suitable construction details and details of connections (including flow control devices) to discharge points		
Landscape planting scheme (if proposing a vegetated drainage system)		

Calculations and Assessments		
Details of the proposed discharge location and SuDS features, demonstrating that the drainage hierarchy has been applied and that the proposals reflect policy and guidance		
<p>Technical information on the following:</p> <ul style="list-style-type: none"> • Percentage of impermeable area • Greenfield discharge rate / existing discharge rate (if brownfield) • Proposed discharge rate • Volume of attenuation required and the proposed solutions including indicative dimensions 		
<p>Detailed drainage calculations demonstrating the principles of surface water drainage management at the site. Calculations should include peak discharge rates for greenfield conditions and the proposed site, assessing the 1 in 1 year, 1 in 30 year, 1 in 100 year and 1 in 100 year plus climate change storm events.</p> <p><i>This must demonstrate that run-off rates are restricted in line with policy requirements: wherever practicable, developers should aim for a greenfield runoff rate from their development; 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.</i></p>		
Where applicable and required, full calculations for 1 in 100 year and 1 in 100 plus climate change, 6 hour storm events demonstrating that the run-off volume from the proposed development can be constrained to the greenfield run-off volume (or as close as reasonably practicable)		
Design assessments with supporting calculations demonstrating that the proposed drainage strategy can contain a 1 in 30 year storm event without any flooding occurring		
Design assessments with supporting calculations demonstrating that the proposed drainage strategy ensures that no building (including basements) or utility structure is flooded during a 1 in 100 year and 1 in 100 plus climate change storm event		
Design assessments demonstrating flooding in excess of 1 in 100 year plus climate change storm events are managed via exceedance flow path routes to minimise the food risk posed to people and properties on and of the application site		
Assessment of SuDS infiltration techniques through site specific infiltration testing (BRE 365)		
Assessment of water quality using the simple index approach from the CIRIA SuDS Manual		

Additional Information		
Full details of responsibility for controlling the overall surface water management of the site		
SuDS and drainage strategy maintenance plan for each drainage component following construction for the lifetime of the development (including maintenance action, maintenance frequency, access arrangements and owner responsible)		
Points of discharge information for the surface water run-off from the site, details of the connections to watercourses and/or sewers where appropriate		
Information on discharge rate restriction methods (if appropriate)		
Confirmation of discharge consent (if appropriate)		