

17-37 & 18-36 Bowater Road, 1-3 Faraday Way

Summary Information	
Site Reference	P3-C7
Address	17-37 & 18-36 Bowater Road, 1-3 Faraday Way SE18 5TF
Area (ha)	2.25
Current Use	Vacant industrial buildings, partly occupied industrial / office building.
Current Vulnerability	Less Vulnerable
Proposed Use	Mixed use development incorporating commercial and light industrial uses with residential uses
Proposed Vulnerability	More Vulnerable

Current Risk Summary					
Fluvial / Tidal			Groundwater		
FZ2	0.00	% of site	Limited potential for flooding to occur	100	% of site
FZ3a	100	% of site	Potential for flooding of properties below ground level	0.00	% of site
FZ3b	0.00	% of site	Potential for flooding to occur at surface	0.00	% of site
Surface Water			Sewer Flooding		
High	2.16	% of site	Number of incidents within the predominant postcode	40+	
Medium	3.62	% of site	Is the site located within the Thamesmead area?	No	
Low	7.25	% of site			
Flood Defences			Flood Warning Area		
The site is at risk of flooding from rivers taking into account the presence and condition of flood defences according to the EA's RoFRS layer.			The EA Flood Warning Service is available at this site.		

See webmap supporting assessment: [Greenwich - Level 1 and 2 SFRA](#)



1.1 Tidal

Description of Flood Mechanism
The site is at risk of tidal breach flooding from the River Thames which is located approximately 60m north of the site at its closet point. - During the 2005 Thames Upriver modelled event, tidal flood risk is concentrated along the northeastern and western boundaries of the site. - During the 2100 Thames Upriver modelled event, the site is fully inundated. - During all Thames Downriver modelled events the site is fully inundated.
Mitigation / FRA Requirements
- A FRA must be submitted as part of a planning application. - Include appropriate flood resistance or resilience measures to address predicted flood depths. - See SFRA Level 2 Report mitigation requirement numbers 4.3 and 4.4, Policies E2 and E3 of the existing Greenwich Local Plan, and Policy EN6 of the draft Local Plan for further development stipulations. - Site users should be signed up to the EA's Flood Alert and Flood Warning Service. - Sea Level Allowances, provided by the EA, should be considered to inform flood resilient construction and design measures. - The development should allow for safe, dry access to high ground as the extent of inundation covers the entire site in most scenarios.
Climate Change Considerations
The site remains fully inundated within both Downriver modelled scenarios and therefore there is no change in the extent due to climate change. In an Upriver tidal breach scenario, the extent increases due to climate change, resulting in the site becoming fully inundated. The Downriver modelled scenario was used for the analysis below as this represents the worst-case scenario. During the Thames Breach Downriver 1 in 200 year events, the maximum depth increases from 3.10m to 3.75m, the maximum velocity increases from 4.47m/s to 5.00m/s, the maximum flood level increases from 5.53mAOD to 6.30mAOD and the maximum hazard increases from 5.01 to 8.09. During the Thames Breach Downriver 1 in 1000 year events, the maximum depth increases from 3.32m to 3.99m, the maximum velocity increases from 4.93m/s to 4.96m/s, the maximum flood level increases from 5.79mAOD to 6.57mAOD and the maximum hazard increases from 5.65 to 9.03.

Risk Assessment (Tidal – Thames Breach Downriver 2018)					
Parameter	2005_0200	2005_1000	2115_0200	2115_1000	Units
Max. Depth	3.10	3.32	3.75	3.99	m
Max. Velocity	4.47	4.93	5.00	4.96	m/s



Max Flood Level	5.53	5.79	6.30	6.57	m AOD
Max Ground Level	4.89	4.89	4.89	4.89	m AOD
Min Ground Level	2.40	2.40	2.40	2.40	m AOD
Max Flood Hazard	5.01	5.65	8.09	9.03	N/A

1.2 Surface Water

Description of Flood Mechanism	
The surface water flood risk extent is concentrated in three main areas, one in the southern area of the site, one in the southwestern area of the site and another above Bowater Road. These three areas all have high risk areas present.	
Mitigation – Flood Risk Requirements	Mitigation – Surface Water Drainage
Development should be directed away from the three localised areas at high risk of surface water flooding.	See SFRA Level 2 Report mitigation requirement 5.0 for further development stipulations.
Development should comply with SFRA - Level 2 Report Section 4 mitigation requirement numbers 4.3 and 4.9.	Developments should apply the Sustainable Drainage Hierarchy set out in Policy SI 13 of the London Plan as well as Policy E2 of the existing Greenwich Local Plan and Policy EN6 of the draft Local Plan. Ground investigations are required to confirm whether infiltration SuDS are suitable.
Climate Change Considerations	
During the high risk events, the extent increases around the pre-existing areas of high surface water flood risk in both the western and southern sections of the site. There is an addition of high risk extent along the northern boundary of the site. The maximum depth increases from <0.2m to 0.3m, the maximum velocity increases from 0.0m/s to 0.25m/s and the maximum hazard increases from 0.5 to 0.75.	
During the medium risk events, the extent increases around the pre-existing areas of medium risk in the western and southern sections of the site and along the northern boundary. The maximum depth, velocity, and hazard remain unchanged.	
During the low risk events, the extent expands across the central areas of the site, along Bowater Road, and in some of the northern and western areas of the site. The maximum velocity increases from 0.25m/s to 0.5m/s. The maximum depth and hazard remain unchanged.	



Risk Assessment				
Parameter	High	Medium	Low	Units
Max. Depth	<0.2	0.3	0.6	m
Max. Velocity	0.0	0.25	0.25	m/s
Max. Hazard	0.5	0.75	1.25	N/A

Risk Assessment – with Climate Change				
Parameter	High	Medium	Low	Units
Max. Depth	0.3	0.3	0.6	m
Max. Velocity	0.25	0.25	0.5	m/s
Max. Hazard	0.75	0.75	1.25	N/A

1.3 Sewer

Risk Assessment	Mitigation Requirements
The site falls within a postcode area where there are 40+ reported flood incidents from sewer flooding. The site is assumed to be served by separate surface water and combined sewer networks, given their proximity to the site.	The applicant must consult with TWUL to confirm if the development site has historically flooded. TWUL must agree to any proposed sewer connections. If historic flooding has occurred, the applicant must demonstrate how this risk will be managed throughout the development's lifetime.

1.4 Groundwater

Risk Assessment	Mitigation Requirements
The site has limited potential for groundwater flooding to occur. The majority of the site is underlain by the Sussex White Chalk Formation bedrock geology, however there is no information on the superficial deposits.	For new developments that involve groundworks, especially if basements are planned, the applicant should carry out a screening study (as a minimum) to establish if there are any subterranean flood risk issues that may require further investigation. If there is a potential level of impact, mitigation actions must be proposed. This must be prepared by a chartered professional or specialist.



1.5 Artificial

Risk Assessment	Mitigation Requirements
This site is at risk of flooding from the Banbury, High Maynard, King George V, Lockwood, Queen Elizabeth II, Walthamstow No.4, Walthamstow No.5, and William Girling reservoirs. The reservoir extent map predicts that if any of these reservoirs breach on a wet day, the site will be at risk of flooding.	Propose appropriate and proportionate risk management measures. A suitable emergency response plan should be put in place, including an emergency warning system in the event of a reservoir flooding incident. Local Authority Emergency Planning Officers must be consulted to create a reservoir failure emergency and evacuation plan.

1.6 Planning Considerations – Safety of Development

A. Can the development be future proofed for climate change considerations?	
- Surface water flood risk extent is expected to increase in all risk events due to climate change. The maximum depth and hazard increase in a high risk event, and the maximum velocity increases in the high and low risk events. - The site remains fully inundated within the tidal breach Downriver modelled scenarios and therefore there is no change in the extent due to climate change. Under the Upriver tidal breach scenario, the flood extent increases and the site becomes fully inundated. The maximum depth, velocity and flood hazard increase in a climate change scenario. - See SFRA - Level 2 Report Section 4 mitigation requirement number 4.4 for the required flood resistant / resilient building stipulations.	
B. Can the development be designed safe throughout its lifetime without increasing flood risk elsewhere?	
- The development must use surface water drainage techniques to manage surface water runoff onsite through above ground SuDS and / or below ground attenuation. - Green drainage infrastructure should be prioritised to provide wider ecological / biodiversity benefits as per London Plan Policy SI 13. - See SFRA Level 2 Report mitigation requirement numbers 4.3, 4.7, 4.8 and 4.9 and Policies E2, E3 of the Greenwich Local Plan and Policy EN6 of the draft Local Plan for further development stipulations.	
C. What is the cumulative impact of the development land use change and will flood risk increase?	
The development land use is changing from 'Less Vulnerable' to 'More Vulnerable'.	



The site is currently fully impermeable. This offers an opportunity to improve flood attenuation through new development.
D. How can the development reduce risk overall?
- The development should be directed towards the east of the site where there is less risk of surface water flooding, and away from the three areas of localised surface water risk located in the southwestern, southern and northwestern areas of the site. - By complying with Policy E2 of the Greenwich Local Plan and Policy EN6 of the draft Local Plan through demonstrating that the development will avoid or minimise all sources of flood risk to people and property taking climate change into account, and incorporating SuDS measures in order to manage surface water runoff as close to its source as possible and to meet the required SuDS performance standards. - By complying with SFRA - Level 2 Report Section 4 mitigation requirement 4.4.
E. Which safe access and egress routes are recommended?
- Safe access and egress routes should be directed towards Bowater Road where there is less risk of surface water flooding. - Given the risk of tidal flooding in a breach scenario to the available access and egress routes, the applicant should provide a Flood Risk Emergency Plan in line with Adept guidance.
F. Will development require a flood risk permit / watercourse consent?
No, the site is not within 16m of a Tidal River, 8m of a Main River or 5m of an Ordinary Watercourse.
G. Can the site pass the Exception Test?
The site is located within Flood Zone 3a and the proposed vulnerability classification is 'More Vulnerable', therefore the Exception Test is required.

