

Land to the West of Church Manor Way

Summary Information	
Site Reference	P5-TA6
Address	Land to the west of Church Manor Way, between Plumstead and Abbey Wood
Area (ha)	1.3
Current Use	Vacant grassland. Part of site is used for an Aerial Mast.
Current Vulnerability	Essential Infrastructure
Proposed Use	Gypsy and Traveller Site.
Proposed Vulnerability	Highly Vulnerable

Current Risk Summary					
Fluvial / Tidal			Groundwater		
FZ2	2.17	% of site	Limited potential for flooding to occur	100	% of site
FZ3a	31.73	% of site	Potential for flooding of properties below ground level	0	% of site
FZ3b	0	% of site	Potential for flooding to occur at surface	0	% of site
Surface Water			Sewer Flooding		
High	0.01	% of site	Number of incidents within the predominant postcode	10 - 20	
Medium	1.82	% of site	Is the site located within the Thamesmead area?	No	
Low	4.65	% 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 1.38km northwest of the site. - During all Thames Downriver modelled events, tidal flood risk is concentrated along the eastern and southeastern boundaries of the site. - During the 1 in 200 year (2115) and 1 in 1000 year (2115) Thames Downriver modelled events, tidal flood risk also extends further into the the northeastern area of the site.
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.
Climate Change Considerations
During the Thames Breach Downriver 1 in 200 year events, climate change is expected to increase the extent of tidal flood risk further into the site from the east, particularly in the northeastern area of the site. The maximum depth increases from 1.61m to 2.21m, the maximum velocity increases from 0.65m/s to 0.96m/s, the maximum flood level increases from 1.89mAOD to 2.50mAOD and the maximum hazard increases from 1.80 to 2.11. During the Thames Breach Downriver 1 in 1000 year events, climate change is expected to increase the extent of tidal flood risk further into the site from the east, particularly in the northeastern area of the site. The maximum depth increases from 1.72m to 2.36m, the maximum velocity increases from 0.67m/s to 0.99m/s, the maximum flood level increases from 2.01mAOD to 2.64mAOD and the maximum hazard increases from 1.86 to 2.18.

Risk Assessment (Tidal – Thames Breach Downriver 2018)					
Parameter	2005_0200	2005_1000	2115_0200	2115_1000	Units
Max. Depth	1.61	1.72	2.21	2.36	m
Max. Velocity	0.65	0.67	0.96	0.99	m/s
Max Flood Level	1.89	2.01	2.50	2.64	m AOD
Max Ground Level	8.12	8.12	8.12	8.12	m AOD



Min Ground Level	0.37	0.37	0.37	0.37	m AOD
Max Flood Hazard	1.80	1.86	2.11	2.18	N/A

1.2 Surface Water

Description of Flood Mechanism	
Surface water flood risk is concentrated within isolated areas in the southern section of the site, as well as along the southwestern, southeastern and northwestern boundaries of the site. A very small area of high risk is located in the western corner of the site.	
Mitigation – Flood Risk Requirements	Mitigation – Surface Water Drainage
Development should be directed away from the southern areas of the site and southwestern, southeastern and northwestern boundaries, and towards the northeastern and central areas of the site. Development should comply with SFRA - Level 2 Report Section 4 mitigation requirement numbers 4.3 and 4.9.	See SFRA Level 2 Report mitigation requirement 5.0 for further development stipulations. 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, there is a slight increase in extent in the northwestern corner and a small area on the southeastern boundary which encroaches on the site. The maximum depth, velocity and hazard remain unchanged. During the medium risk events, the existing extents increase slightly, with a new area of medium risk forming along the northwestern boundary. The maximum depth, velocity and hazard remain unchanged. During low risk events, the extents increase slightly around the existing areas of low risk. The maximum depth and velocity remain unchanged. However, the maximum hazard increases from 0.75 to 1.25.	

Risk Assessment				
Parameter	High	Medium	Low	Units
Max. Depth	<0.2	0.2	0.3	m
Max. Velocity	0	0.25	0.25	m/s
Max. Hazard	0.5	0.5	0.75	N/A



Risk Assessment – with Climate Change				
Parameter	High	Medium	Low	Units
Max. Depth	<0.2	0.2	0.3	m
Max. Velocity	0	0.25	0.25	m/s
Max. Hazard	0.5	0.5	1.25	N/A

1.3 Sewer

Risk Assessment	Mitigation Requirements
The site falls within a postcode area where there are 10 - 20 reported flood incidents from sewer flooding. The site is assumed to be served by surface water, combined and foul 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 site is underlain by Thanet Sand Formation bedrock geology. The superficial geology is Alluvium.	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 not at risk of flooding from reservoirs.	N/A - No reservoir risk is predicted at this site.



1.6 Planning Considerations – Safety of Development

A. Can the development be future proofed for climate change considerations?
- Climate change is expected to increase the extent of tidal flood risk onsite. The maximum depth, velocity, flood level and hazard increase. - Surface water flood risk extent is expected to increase in the high, medium and low risk events due to climate change. During the low risk event, the maximum hazard increases. - 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, 4.9, 5.0 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 'Essential Infrastructure' to 'Highly Vulnerable'. - The site is largely permeable with some impermeable areas in the north of the site. - Development must mitigate any increase in impermeable area to the site with runoff storage to prevent any increase in flood risk. An increase in impermeable area coverage on site will increase surface water runoff and flood risk if not managed properly.
D. How can the development reduce risk overall?
- Development should be directed towards the northeastern and central areas of the site where there is less risk of surface water flooding. - 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 Church Manor Way 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 partially located within Flood Zone 3a, therefore 'Highly Vulnerable' development is not permitted within this Flood Zone. - The site is located within Flood Zone 2 and the proposed vulnerability classification is 'Highly Vulnerable', therefore the Exception Test is required.

