# Charlton Riverside - ASDA and Ramac Way

| Summary Information | |
|---|---|
| Site Reference | P3-C2 |
| Address | Ramac Way, New Charlton, London SE7 7AX |
| Area (ha) | 4.47 |
| Current Use | Retail (ASDA Superstore) with petrol filling station and surface level parking, light industrial / warehouse units. |
| Current Vulnerability | More Vulnerable |
| Proposed Use | Mixed uses including residential, commercial / retail and small-scale industrial workshop / studio uses. |
| Proposed Vulnerability | More Vulnerable |

| Current summary | | | | | |
|---|---|---|---|---|---|
| Fluvial / Tidal | | | Groundwater | | |
| FZ2 | 0.00 | % of site | Limited potential for flooding to occur | 0.15 | % of site |
| FZ3a | 100 | % of site | Potential for flooding of properties below ground level | 99.85 | % of site |
| FZ3b | 0.00 | % of site | Potential for flooding to occur at surface | 0.00 | % of site |
| Surface Water | | | Sewer Flooding | | |
| High | 26.30 | % of site | Number of incidents within the predominant postcode | 20 – 30 | |
| Medium | 41.31 | % of site | Is the site located within the Thamesmead area? | No | |
| Low | 94.07 | % 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 River Thames is located approximately 500m to the north of the site. The site would be inundated in the event of a tidal breach under all modelled scenarios in both the Thames Breach Upriver and Downriver models. |
| **Mitigation / FRA Requirements** |
| • A FRA must be submitted as part of a planning application.<br>• Include appropriate flood resistance or resilience measures to address predicted flood depths.<br>• 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.<br>• Site users should be signed up to the EA's Flood Alert and Flood Warning Service.<br>• Sea Level Allowances, provided by the EA, should be considered to inform flood resilient construction and design measures.<br>• The development should allow for safe, dry access to high ground as the extent of inundation covers the entire site. |
| **Climate Change Considerations** |
| The site remains inundated within both the Thames Breach Upriver and Downriver modelled scenarios and therefore there is no change in extent due to climate change. The Downriver modelled scenario was used for analysis as the worst-case scenario.<br><br>During the Thames Breach Downriver 1 in 200 year events, climate change is expected to increase the maximum depth from 1.21m to 1.87m, the maximum velocity from 1.92m/s to 2.48m/s, the maximum flood level from 3.91mAOD to 4.64mAOD and the maximum hazard from 2.65 to 4.89.<br><br>During the Thames Breach Downriver 1 in 1000 year events, climate change is expected to increase the maximum depth from 1.55m to 2.08m, the maximum velocity from 2.27m/s to 2.51m/s, the maximum flood level from 4.30mAOD to 4.85mAOD and the maximum hazard from 3.76 to 5.60. |

| Risk Assessment (Tidal – Thames Breach Downriver 2018) | | | | | |
|---|---|---|---|---|---|
| Parameter | 2005_0200 | 2005_1000 | 2115_0200 | 2115_1000 | Units |
| Max. Depth | 1.21 | 1.55 | 1.87 | 2.08 | m |
| Max. Velocity | 1.92 | 2.27 | 2.48 | 2.51 | m/s |
| Max Flood Level | 3.91 | 4.30 | 4.64 | 4.85 | m AOD |
| Max Ground Level | 4.16 | 4.16 | 4.16 | 4.16 | m AOD |
| Min Ground Level | 2.63 | 2.63 | 2.63 | 2.63 | m AOD |
| Max Flood Hazard | 2.65 | 3.76 | 4.89 | 5.60 | N/A |

## 1.2 Surface Water

| Description of Flood Mechanism | |
|---|---|
| Surface water flood risk is concentrated in the southeastern area of the site, with areas of high risk located in the southeastern corner and some of the northern areas of the site. The low flood risk scenario covers the majority of the site. | |
| Mitigation – Flood Risk Requirements | Mitigation – Surface Water Drainage |
| Development should be directed away from the southeastern and some of the northern areas of the site. Development should be directed towards the western and central areas of the site.<br><br>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.<br><br>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.<br><br>Ground investigations are required to confirm whether infiltration SuDS are suitable. |
| Climate Change Considerations | |
| During high risk events, the extent of surface water flooding increases within the southeastern area of the site, with additional expansion around existing areas of high risk including the northern areas of the site, and some additional areas in the southwestern area of the site. The maximum velocity increases from 0.25m/s to 0.5m/s, while the maximum depth and hazard remain unchanged.<br><br>During medium risk events, the extent extends further within the southwestern section of the site and into the northeast, with the maximum hazard increasing from 0.75 to 1.25, while the maximum velocity and depth remain unchanged.<br><br>During low risk events, the extent increases slightly across the northern part of the site and in the southwestern area. The maximum velocity increases from 0.5m/s to 1.0m/s, while the maximum depth and hazard remain unchanged. | |

| Risk Assessment | | | | |
|---|---|---|---|---|
| Parameter | High | Medium | Low | Units |
| Max. Depth | 0.3 | 0.3 | 0.6 | m |
| Max. Velocity | 0.25 | 0.5 | 0.5 | m/s |
| Max. Hazard | 0.75 | 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 | 0.5 | 0.5 | 1.0 | m/s |
| Max. Hazard | 0.75 | 1.25 | 1.25 | N/A |

## 1.3 Sewer

| Risk Assessment | Mitigation Requirements |
|---|---|
| The site falls within a postcode area where there are 20 - 30 reported flood incidents from sewer flooding.<br><br>The site is assumed to be served by separate 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.<br><br>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 predominantly has potential for flooding of properties below ground level.<br><br>The site is underlain by the Sussex White Chalk Formation and the superficial deposits are comprised of 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.<br><br>If there is a potential level of impact, mitigation actions must be proposed.<br><br>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, and William Girling reservoirs.<br><br>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.<br><br>A suitable emergency response plan should be put in place, including an emergency warning system in the event of a reservoir flooding incident.<br><br>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? |
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| • Surface water flood risk extent is expected to increase in all risk events due to climate change. The maximum velocity increases in the high and low risk events and the maximum hazard increases in the medium risk event.<br>• The site remains fully inundated within all tidal breach Upriver and Downriver modelled scenarios and therefore there is no change in the extent due to climate change. The maximum depth, velocity and flood hazard increase in a climate change scenario.<br>• 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.<br>• Green drainage infrastructure should be prioritised to provide wider ecological / biodiversity benefits as per London Plan Policy SI 13.<br>• 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 not changing from ‘More Vulnerable’.<br>• The site is predominantly impermeable, with permeable areas located along the northern boundary of the site and additional small areas within the north of the site. |

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| • 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 western and central areas of the site, where there is lower risk of surface water flooding.<br>• 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.<br>• 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 should be directed towards Greenwich Shopping Park to the northeastern corner of the site, onto Bugsby's Way.<br>• 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. |