



**Strategic Flood Risk Assessment  
Detailed Site Summary Tables**

**Malthouse Industrial Estate**



**Site details**

<b>Site Code</b>	<b>SH/017/22</b>
<b>Address</b>	Malthouse Industrial Estate
<b>Area</b>	1.0ha
<b>Current land use</b>	Brownfield - Commercial
<b>Proposed land use</b>	Mixed Use
<b>Flood Risk Vulnerability</b>	More Vulnerable

**Sources of flood risk**

<b>Location of the site within the administrative area</b>	The site is located to the east of Shoreham-by-Sea, directly south of the railway line, in the south-east of the Adur District boundary. The site consists of commercial land-use and several parking areas, accessed via Brighton Road to the south of the site. .
<b>Topography</b>	<p>The Environment Agency's 1m resolution 2022 Composite LiDAR shows that the topography of the site declines slightly from the west to the east with an approximate 1% gradient across the site. The localised peak is approximately 5.3mAOD in the west of the site, declining to 4.2mAOD in the east of the site.</p> <p><i>Malthouse Industrial Estate - Topography</i></p>
<b>Existing drainage features</b>	The River Adur is situated approximately 50m south of the site, flowing in an easterly direction.
<b>Flood Map for Planning</b>	<p><b>Available data and mapping:</b> Environment Agency Flood Map for Planning for Rivers and Sea.</p> <p><i>Malthouse Industrial Estate - FMfP</i></p> <p><b>Data analysis:</b> Details of the sites location within each Flood Zone are provided within the SFRA Site Screening Appendix.</p> <p><b>Flood characteristics:</b> The majority of the site is located within Flood Zone 1 of the Flood Map for Planning for Rivers and Sea, with partial areas in the south-west and east of the site located in Flood Zone 2. A small area in the south-east is located in Flood Zone 3.</p> <ul style="list-style-type: none"><li>• Flood Zone 1 represents areas which have less than a 1 in 1000 (0.1%) chance of river or tidal flooding in a given year.</li><li>• Flood Zone 2 represents areas which have less than 1 in 100 (1%) but greater than 1 in 1000 (0.1%) chance of river flooding or less than 1 in 200 (0.5%) but greater than 1 in 1000 (0.1%) chance of tidal flooding in a given year.</li><li>• Flood Zone 3 representing an area greater than 1 in 100 (1%) chance of river flooding in a given year or greater than 1 in 200 (0.5%) chance of tidal flooding.</li></ul>



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Surface Water flooding should be considered. It is understood that additional Surface Water datasets will be published in 2025.

**Tidal**

**Available data and mapping:** Arun-Adur modelling – defended scenario.

Depth

*Malthouse Industrial Estate – Tidal – Present Day – 3.3%*

*Malthouse Industrial Estate – Tidal – Present Day – 0.5%*

*Malthouse Industrial Estate – Tidal – Present Day – 0.1%*

Hazard

*Malthouse Industrial Estate – Tidal – Present Day – 3.3%*

*Malthouse Industrial Estate – Tidal – Present Day – 0.5%*

*Malthouse Industrial Estate – Tidal – Present Day – 0.1%*

Velocity

*Malthouse Industrial Estate – Tidal – Present Day – 3.3%*

*Malthouse Industrial Estate – Tidal – Present Day – 0.5%*

*Malthouse Industrial Estate – Tidal – Present Day – 0.1%*

**Data analysis:** Details of the site’s location within the Arun-Adur modelling are provided within the Level 2 SFRA Site Screening Appendix.

**3.3% AEP (1 in 30 year) event:**

Proportion – 0%

**0.5% AEP (1 in 200 year) event:**

Proportion – 1%

Max Depth – 0.18m

Max Velocity – 0.16m/s

Max Hazard – 0.62 (caution)

Mean Depth – 0.09m

Mean Velocity – 0.04m/s

Mean Hazard – 0.56 (caution)

**0.1% AEP (1 in 1000 year) event:**

Proportion – 2%

Max Depth – 0.37m

Max Velocity – 0.22m/s

Max Hazard – 1.2 (danger to some)

Mean Depth – 0.17m

Mean Velocity – 0.04m/s

Mean Hazard – 0.8 (danger to some)

**Flood characteristics:** A small proportion of the site is shown to flood at during the 0.5% and 0.1% AEP events, with 1% and 2% coverage encroaching in the east and the south of the site during each event respectively.

The mean depth, velocity and hazard are shown to be 0.17m, 0.04m/s and 0.8 (a ‘danger to some’) during the 0.1% AEP event, respectively.

**Tidal with Climate Change**

**Available data and mapping:** Arun-Adur modelling – defended. The Environment Agency guidance recommends that the Higher Central (55%) and Upper End (107%) allowance is considered.

Depth – 70<sup>th</sup> percentile (higher central)

*Malthouse Industrial Estate – Tidal – Future – 3.3%*

*Malthouse Industrial Estate – Tidal – Future – 0.5%*

Hazard – 70<sup>th</sup> percentile (higher central)

*Malthouse Industrial Estate – Tidal – Future – 3.3%*

*Malthouse Industrial Estate – Tidal – Future – 0.5%*



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*Velocity -70<sup>th</sup> percentile (higher central)*  
 Malthouse Industrial Estate – Tidal – Future – 3.3%  
 Malthouse Industrial Estate – Tidal – Future – 0.5%  
*Depth – 95<sup>th</sup> percentile (upper end)*  
 Malthouse Industrial Estate – Tidal – Future – 3.3%  
 Malthouse Industrial Estate – Tidal – Future – 0.5%  
*Hazard - 95<sup>th</sup> percentile (upper end)*  
 Malthouse Industrial Estate – Tidal – Future – 3.3%  
 Malthouse Industrial Estate – Tidal – Future – 0.5%  
*Velocity -95<sup>th</sup> percentile (upper end)*  
 Malthouse Industrial Estate – Tidal – Future – 3.3%  
 Malthouse Industrial Estate – Tidal – Future – 0.5%

**Data analysis:** Details of the site’s location within the Arun-Adur modelling are provided within the Level 2 SFRA Site Screening Appendix

**3.3% AEP (1 in 30 year) + Higher Central Climate Change event:**

Proportion – 39%	
Max Depth – 0.89m	Mean Depth – 0.38m
Max Velocity – 0.43m/s	Mean Velocity – 0.05m/s
Max Hazard – 1.64 (danger to most)	Mean Hazard – 1.09 (danger to some)

**3.3% AEP (1 in 30 year) + Upper End Climate Change event:**

Proportion – 55%	
Max Depth – 1.19m	Mean Depth – 0.52m
Max Velocity – 0.67m/s	Mean Velocity – 0.08m/s
Max Hazard – 2.10 (danger to all)	Mean Hazard – 1.17 (danger to some)

**0.5% AEP (1 in 200 year) + Higher Central Climate Change event:**

Proportion – 49%	
Max Depth – 1.08m	Mean Depth – 0.48m
Max Velocity – 0.48m/s	Mean Velocity – 0.06m/s
Max Hazard – 1.93 (danger to all)	Mean Hazard – 1.14 (danger to some)

**0.5% AEP (1 in 200 year) + Upper End Climate Change event:**

Proportion – 69%	
Max Depth – 1.38m	Mean Depth – 0.58m
Max Velocity – 0.65m/s	Mean Velocity – 0.08m/s
Max Hazard – 2.44 (danger to all)	Mean Hazard – 1.22 (danger to some)

**Flood characteristics:** The site flood in all climate change scenarios. During the 3.3% AEP Higher Central event, 39% of the site is shown to flood from the south and into the east and western areas of the site. Maximum depths are up to 0.89m to the east of the site, with an associated hazard rating of ‘Danger to most’.

The flood extent increases during the 0.5% AEP Higher Central and Upper End climate change events, however the distribution of flooding across the



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site remains the same. flooding remains limited to the east and centre of the site. The maximum hazard rating is shown to be 'Danger to all'.

**Surface Water**

**Available data and mapping:** Environment Agency Risk of Surface Water flooding for the 3.3%, 1% and 0.1% AEP events. It should be noted that the data discussed below relates to the available surface water data prior to March 2025, as the newly released data does not include depth, hazard and velocity information. A comparison of the two surface water flooding datasets is discussed below and are detailed within the Site Screening document undertaken as part of the Level 2 SFRA.

- Malthouse Industrial Estate - Surface Water Depth - Present Day - 3.3%*
- Malthouse Industrial Estate - Surface Water Depth - Present Day - 1%*
- Malthouse Industrial Estate - Surface Water Depth - Present Day - 0.1%*
- Malthouse Industrial Estate - Surface Water Hazard - Present Day - 3.3%*
- Malthouse Industrial Estate - Surface Water Hazard - Present Day - 1%*
- Malthouse Industrial Estate - Surface Water Hazard - Present Day - 0.1%*
- Malthouse Industrial Estate - Surface Water Velocity- Present Day - 3.3%*
- Malthouse Industrial Estate- Surface Water Velocity - Present Day - 1%*
- Malthouse Industrial Estate- Surface Water Velocity - Present Day - 0.1%*
- Malthouse Industrial Estate - Surface Water - Present Day - NAFRA2*

**Data analysis:**

**1% AEP (1 in 100 year) event:**

Proportion - 2%	
Max Depth - 0.26m	Mean Depth - 0.20m
Max Velocity - 0.20m/s	Mean Velocity - 0.07m/s
Max Hazard - 1.13 (danger to some)	Mean Hazard - 0.62 (caution)

**0.1% AEP (1 in 1000 year) event:**

Proportion - 3%	
Max Depth - 0.38m	Mean Depth - 0.27m
Max Velocity - 0.21m/s	Mean Velocity - 0.09m/s
Max Hazard - 1.19 (danger to some)	Mean Hazard - 0.93 (danger to some)

**NAFRA2 - 3% AEP (1 in 30 year) event:**

Proportion - 2%

**NAFRA2 - 1% AEP (1 in 100 year) event:**

Proportion - 3%

**NAFRA2 - 0.1% AEP (1 in 1000 year) event:**

Proportion - 5%

**Description of surface water flow paths:** A small area of the site is shown to flood in the 1%AEP and 0.1%AEP surface water events, with water pooling to the east of the site. Maximum depths during the 1%AEP are 0.26m and during the 0.1%AEP are 0.38m. The NAFRA2 data shows a similar area at risk.



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**Surface Water with  
Climate Change**

**Available data and mapping:** Surface Water flooding for the 3.3%, 1% and 0.1% AEP events with climate change, using data available prior to March 2025. The Environment Agency guidance recommends that the Upper End allowance is considered for both the 3.3% and 1% AEPs for the 2070's epoch, unless the allowance for the 2050's epoch is higher, in which case this should be used. The recommended uplift on peak rainfall intensity for the 3.3% AEP is 40% and for the 1% AEP is 45%.

Depth

- Malthouse Industrial Estate – Surface Water – Future – 3.3%+20CC
- Malthouse Industrial Estate – Surface Water – Future – 3.3%+40CC
- Malthouse Industrial Estate – Surface Water – Future – 1%+25CC
- Malthouse Industrial Estate – Surface Water – Future – 1%+45CC
- Malthouse Industrial Estate – Surface Water – Future – 0.1%+25CC
- Malthouse Industrial Estate – Surface Water – Future – 0.1%+45CC

Hazard

- Malthouse Industrial Estate – Surface Water – Future – 3.3%+20CC
- Malthouse Industrial Estate – Surface Water – Future – 3.3%+40CC
- Malthouse Industrial Estate – Surface Water – Future – 1%+25CC
- Malthouse Industrial Estate – Surface Water – Future – 1%+45CC
- Malthouse Industrial Estate – Surface Water – Future – 0.1%+25CC
- Malthouse Industrial Estate – Surface Water – Future – 0.1%+45CC

Velocity

- Malthouse Industrial Estate – Surface Water – Future – 3.3%+20CC
- Malthouse Industrial Estate – Surface Water – Future – 3.3%+40CC
- Malthouse Industrial Estate – Surface Water – Future – 1%+25CC
- Malthouse Industrial Estate – Surface Water – Future – 1%+45CC
- Malthouse Industrial Estate – Surface Water – Future – 0.1%+25CC
- Malthouse Industrial Estate – Surface Water – Future – 0.1%+45CC

**Data analysis:**

**3.3% AEP (1 in 30 year) + 40% Climate Change event:**

Proportion – 1%	Mean Depth – 0.2m
Max Depth – 0.25m	Mean Velocity – 0.05m/s
Max Velocity – 0.13m/s	Mean Hazard – 0.61 (caution)
Max Hazard – 1.13 (danger to some)	

**1% AEP (1 in 100 year) + 25% Climate Change event:**

Proportion – 3%	Mean Depth – 0.27m
Max Depth – 0.38m	Mean Velocity – 0.08m/s
Max Velocity – 0.22m/s	Mean Hazard – 0.92 (danger to some)
Max Hazard – 1.19 (danger to some)	

**1% AEP (1 in 100 year) + 45% Climate Change event:**

Proportion – 3%	Mean Depth – 0.27m
Max Depth – 0.39m	Mean Velocity – 0.08m/s
Max Velocity – 0.23m/s	Mean Hazard – 0.94 (danger to some)
Max Hazard – 1.2 (danger to some)	

**0.1% AEP (1 in 1000 year) + 25% Climate Change event:**



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Proportion – 6%	Mean Depth – 0.26m
Max Depth – 0.73m	Mean Velocity – 0.14m/s
Max Velocity – 0.96m/s	Mean Hazard – 0.87 (danger to some)
Max Hazard – 1.37 (danger to most)	

**0.1% AEP (1 in 1000 year) + 45% Climate Change event:**

Proportion – 16%	Mean Depth – 0.22m
Max Depth – 0.73m	Mean Velocity – 0.57m/s
Max Velocity – 1.7m/s	Mean Hazard – 0.86 (danger to some)
Max Hazard – 1.65 (danger to most)	

**Description of surface water flow paths:** The site is shown to flood during all climate change events, with the exception of 3.3% AEP plus 20% climate change event, covering up to 16% of the site during the 0.1% AEP plus 45% climate change event. Localised areas of flooding are shown across the south and east of the site during the 1% AEP climate change events.

During the 0.1% AEP plus 45% climate change event, a flow path is present at the west of the site. The mean depth, velocity and hazard is shown to be 0.22m, 0.57m/s and 0.86 (Danger to some) during the 0.1% AEP plus 45% climate change event.

**Tidally influenced  
Surface Water Risk  
Zone**

**Available data and mapping:** JBA’s Tidally influenced Surface Water Risk Zones derived using the RoFSW data, the Present day 1% AEP extreme tidal level, LiDAR data and the Environment Agency’s climate change sea level uplift allowance for South East England.

*Malthouse Industrial Estate – Tidal Drainage Risk Zones*

**Flood characteristics:** The majority of the site is shown to be located Within SW1 within the Surface Water Risk Zone mapping. Small areas in the east of the site are shown to be located within SW2 and SW3, with remaining areas across the north of the site shown to be above the future tide level.

- SW0 - Above the future tidal level.
- SW1 - Not at risk of SW flooding and above the current tidal level but below the future tidal level.
- SW2 - Not at risk of SW flooding but below the present-day tidal level OR at risk of SW flooding from climate change only and above the current day tidal level but below future tidal level.
- SW3 - At risk of SW flooding from climate change only and below the present-day tidal level OR At risk of SW flooding without climate change and above current day tidal level but below future tidal level.
- SW4 - At risk of SW flooding without climate change and below present-day tidal level.

**Groundwater**

**Available data and mapping:** The JBA Groundwater Flood Data Map (GW5) is provided as a 5m resolution grid.



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	<p><b>Flood characteristics:</b> During a 1% AEP groundwater flood event, groundwater levels are predominantly shown to be 'low risk'. The majority of the eastern half of the site is shown to be between 0.5m and 5m below the ground surface, with the north-western corner of the site shown to be between 0.025m and 0.5m below the ground surface.</p>
<b>Tidally influenced Groundwater Risk Zone</b>	<p><b>Available data and mapping:</b> JBA's Tidally influenced Groundwater Risk Zones derived using the JBA Groundwater data, the British Geological Society 50k bedrock mapping, the Present day 1% AEP extreme tidal level, LiDAR data and the Environment Agency's climate change sea level uplift allowance for South East England.</p> <p><b>Flood characteristics:</b> The majority of the site is located within GW1 of the Groundwater Risk Zone mapping. Patches across the north and the centre of the site are shown to be above the future tidal level.</p> <ul style="list-style-type: none"><li>• GW0 - Above the future tidal level.</li><li>• GW1 - Groundwater level more than 0.5m below the surface and region is above the current tidal level but below the future tidal level.</li><li>• GW2 - Groundwater level more than 0.5m below the surface and region is below the present-day tidal level OR groundwater level between 0.025m and 0.5m below the surface and region is above the current tidal level but below the future tidal level.</li><li>• GW3 - Groundwater level between 0.025m and 0.5m below the surface and region is below the present-day tidal level OR Groundwater level within 0.025m of the surface and region is above the current tidal level but below the future tidal level.</li><li>• GW4 Groundwater level within 0.025m of the surface and region is below the present day tidal level.</li></ul>
<b>Sewers</b>	<p><b>Available data and mapping:</b> Drainage and Wastewater Management Plan (DWMP) <a href="#">Overview of the Adur and Ouse River Basin Catchment</a> and Southern Water's Sewer Incident Report Form data (SIRF) at a five digit post code level.</p> <p><b>Flood characteristics:</b> 28 reportable sewer incidents have occurred since 1990 within the five-digit postcode area of the proposed development site. These incidents have been attributed to hydraulic overload following rainfall.</p>
<b>Flood history</b>	<p>The site is not shown to be located within the Environment Agency's Recorded Flood Outlines extent.</p>
<b>Flood risk management infrastructure</b>	
<b>Existing Defences</b>	<p>The Environment Agency's AIMS dataset identifies one formal flood defence located approximately 50m south of the site, comprising of natural high ground.</p>
<b>Residual risk</b>	<p><b>Available data and mapping:</b> The Arun-Adur breach modelling.</p>



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Depth

Malthouse Industrial Estate – Breach A–3.3%  
Malthouse Industrial Estate – Breach A – 0.5%  
Malthouse Industrial Estate – Breach A – 0.1%  
Malthouse Industrial Estate – Breach B–3.3%  
Malthouse Industrial Estate – Breach B – 0.5%  
Malthouse Industrial Estate – Breach B – 0.1%  
Malthouse Industrial Estate – Breach C–3.3%  
Malthouse Industrial Estate – Breach C – 0.5%  
Malthouse Industrial Estate – Breach C – 0.1%  
Malthouse Industrial Estate – Breach D –3.3%  
Malthouse Industrial Estate – Breach D – 0.5%  
Malthouse Industrial Estate – Breach D – 0.1%  
Malthouse Industrial Estate – Breach E–3.3%  
Malthouse Industrial Estate – Breach E – 0.5%  
Malthouse Industrial Estate – Breach E – 0.1%

Hazard

Malthouse Industrial Estate – Breach A–3.3%  
Malthouse Industrial Estate – Breach A – 0.5%  
Malthouse Industrial Estate – Breach A – 0.1%  
Malthouse Industrial Estate – Breach B–3.3%  
Malthouse Industrial Estate – Breach B – 0.5%  
Malthouse Industrial Estate – Breach B – 0.1%  
Malthouse Industrial Estate – Breach C–3.3%  
Malthouse Industrial Estate – Breach C – 0.5%  
Malthouse Industrial Estate – Breach C – 0.1%  
Malthouse Industrial Estate – Breach D –3.3%  
Malthouse Industrial Estate – Breach D – 0.5%  
Malthouse Industrial Estate – Breach D – 0.1%  
Malthouse Industrial Estate – Breach E–3.3%  
Malthouse Industrial Estate – Breach E – 0.5%  
Malthouse Industrial Estate – Breach E – 0.1%

Velocity

Malthouse Industrial Estate – Breach A–3.3%  
Malthouse Industrial Estate – Breach A – 0.5%  
Malthouse Industrial Estate – Breach A – 0.1%  
Malthouse Industrial Estate – Breach B–3.3%  
Malthouse Industrial Estate – Breach B – 0.5%  
Malthouse Industrial Estate – Breach B – 0.1%  
Malthouse Industrial Estate – Breach C–3.3%  
Malthouse Industrial Estate – Breach C – 0.5%  
Malthouse Industrial Estate – Breach C – 0.1%  
Malthouse Industrial Estate – Breach D –3.3%  
Malthouse Industrial Estate – Breach D – 0.5%  
Malthouse Industrial Estate – Breach D – 0.1%  
Malthouse Industrial Estate – Breach E–3.3%  
Malthouse Industrial Estate – Breach E – 0.5%  
Malthouse Industrial Estate – Breach E – 0.1%

**Flood characteristics:**

The site is not considered to be at risk in the breach scenarios tested; flooding at the site is not exacerbated by the breach scenarios.

**Emergency planning**



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**Flood warning**

The site has been identified to be located within the Shoreham Harbour (065WAC408) Flood Alert Area and the Shoreham Harbour (065FWC3001) Flood Warning Area.

*Malthouse Industrial Estate – Flood Warning*

Future residents should be encouraged to sign up to Environment Agency flood alerts and warnings.

**Access and egress**

**Surface Water 1% AEP plus climate change**

Access and egress are shown to be affected during the surface water design event. Surface water risk on Brighton Road adjacent to the site remains low risk, however the wider access to the site is limited with areas east and west on Brighton Road classified as 'Danger to some'.

**Tidal 0.5% AEP plus climate change**

Access and egress across the site is unavailable during the 0.5% AEP plus climate change tidal events due to flood depths, both across the site and along Brighton Road to the south. Depths are greater than 300mm. The hazard rating is classified as 'Danger to most' and 'Danger to all'.

As a result of the affected access and egress and the severity of the hazard ratings throughout the design flood events it is necessary that a Flood Response Plan is developed in line with [ADEPT Guidance](#).

**Requirements for drainage control and impact mitigation**

**Broad-scale  
assessment of  
possible SuDS**

**Geology & Soils**

The geology consists of White Chalk Subgroup comprised of chalk. The superficial deposits consist of sand and gravel overlay this across the entire site.

The soils across the northern half of the site are shown to be freely draining slightly acid loamy soils, whilst the soils across the south of the site are shown to be loamy and clayey soils of coastal flats. This suggests that infiltration is likely across the majority of the catchment but be impacted for the southern half of the site.

**SuDS**

Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. Evidence should be given where multiple benefits are not provided to show that this is not possible.

Preference should be given to multi-functional sustainable drainage systems, and to solutions that allow surface water to be discharged according to the hierarchy of drainage options listed in the [PPG Flood Risk and Coastal Change paragraph 056](#).

The layout and function of drainage systems needs to be considered at the start of the design process for new development, as integration with road networks and other infrastructure can maximise the availability of developable land.

**Suitability and considerations for sustainable drainage**



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In line with Defra's [National Standards for Sustainable Drainage Systems](#), runoff from the development shall be discharged to the following final destinations, to the maximum extent practicable, in accordance with the below hierarchy:

- Priority 1: collected for non-potable use
- Priority 2: infiltrated to ground
- Priority 3: discharged to an above ground surface water body
- Priority 4: discharged to a surface water sewer, or another piped surface water drainage system
- Priority 5: discharged to a combined sewer

SuDS measures should follow West Sussex County Council's discharge hierarchy, and if it is proposed to discharge runoff to a watercourse or sewer system, the condition and capacity of the receiving watercourse or asset should be confirmed through surveys and the discharge rate agreed with the asset owner.

Surface water discharge rates should not exceed pre-development discharge rates and aim to be restricted to Greenfield  $Q_{bar}$ . If that is not possible; flow should be restricted to as close to  $Q_{bar}$  as is achievable. A relaxation factor shall be applied to the target 50% and 1% AEP greenfield runoff rates, this relaxation factor should be no greater than five times the greenfield runoff rate. This should be done in consultation with the LLFA.

It may be possible to reduce site runoff by maximising the permeable surfaces on site using a combination of permeable surfacing and soft landscaping techniques.

The majority of the site is not considered to be susceptible to groundwater flooding (low risk), therefore infiltration is likely to be feasible. Site investigation work and additional groundwater monitoring is recommended to determine the seasonal variability of groundwater levels, as this may affect the design of the surface water drainage system. The infiltration potential of the site should be confirmed through infiltration testing, in line with BRE 365.

The topography of the site is unlikely to affect any proposed SuDS features. Any water not intercepted via infiltration is likely to drain towards the River Adur. It is therefore recommended that the LLFA and the EA are consulted about viable discharge locations for surface water from the site and their attenuation potential.

The site is located within a Nitrate Vulnerable Zone. Therefore, early engagement with the LLFA and the EA is recommended to determine requirements for the site to manage the impact to surrounding watercourses. Consideration of water quality is likely to be of high importance and demonstrated through the use of the Simple Index Approach.

The site has not been identified to be located within a historic landfill site or a groundwater Source Protection Zone.



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**Opportunities for wider sustainability benefits and integrated flood risk management**

- Implementation of SuDS at the site could provide opportunities to deliver multiple benefits including volume control, water quality, amenity and biodiversity. This could also provide wider sustainability benefits to the site and surrounding area. Proposals to use SuDS techniques should be discussed with relevant stakeholders (LPA, LLFA and EA) at an early stage to understand possible constraints.
- The design of the surface water management proposals should take into account the impacts of future climate change over the projected lifetime of the development.
- Opportunities to incorporate source control techniques such as green roofs, permeable surfaces and rainwater harvesting must be considered in the design of the site.
- SuDS are to be designed so that they are easy to maintain, and it should be set out who will maintain the system, how the maintenance will be funded and should be supported by an appropriately detailed maintenance and operation manual.
- SuDS should be designed with a holistic approach, combining ecology, landscape and drainage requirements specific to the site, and incorporating Biodiversity Net Gain requirements.
- Opportunities to incorporate filtration techniques such as filter strips, filter drains and bioretention areas must be considered. Consideration should be made to the existing condition of receiving waterbodies and their Water Framework Directive objectives for water quality. The use of multistage SuDS treatment will improve water quality of surface water runoff discharged from the site and reduce the impact on receiving water bodies.
- The potential to utilise conveyance features such as swales to intercept and convey surface water runoff should be considered. Conveyance features should be located on common land or public open space to facilitate ease of access.
- SuDS should be designed in line with the National Standards for Sustainable Drainage Systems.

**NPPF and planning implications**

**Exception Test requirements  
(Local Authority considerations)**

The Local Authority will need to confirm that the Sequential Test has been carried out in line with national guidelines. The Sequential Test will need to be passed before the Exception Test is applied. The site is located partially within Flood Zone 3 according to the Environment Agency's Flood Map for Planning. The NPPF classifies the usage as "More Vulnerable". The Exception Test would therefore be required for this site. However, given the small proportion on the site within Flood Zone 3, the site boundary could be updated to exclude this area, with no development taking place in Flood Zone 3.

Once the sequential test has been passed, a sequential approach to development should still be undertaken.

A site specific FRA will be required for this site.



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**Requirements and  
guidance for site-  
specific Flood Risk  
Assessment**

**(Developer  
considerations)**

**Flood Risk Assessment:**

The Level 1 SFRA has more guidance on this section and any relevant policies and information applicable to development within Adur District.

- All sources of flooding should be included as part of the site specific FRA.
- The most recent risk of Flooding from Surface Water dataset should be used.
- Consultation with Adur and Worthing Councils, West Sussex County Council, and where relevant the Environment Agency and Southern Water should be undertaken at an early stage.
- Development plans should consider the Level 1 and 2 SFRA for Adur, as well as the Local Flood Risk Management Strategies to identify cumulative flood risk issues. The Cumulative Impact Assessment (CIA) completed as part of the Level 1 SFRA, highlights that the East Adur catchment, is at a high risk of cumulative impacts. The risk of cumulative impacts of this development and others in the local area on flood risk should be considered within the site-specific flood risk assessment. It should also promote an integrated approach to water management.
- The site is included within the Shoreham Harbour Joint Area Action Plan. Policies outlined within this strategy document should be followed and relevant stakeholders consulted.
- Applicants are expected to provide fully detailed plans of the site's existing surface water drainage arrangements, including impermeable areas, gullies, outfalls, pipes & diameters, manholes, etc., to prove the extent of the existing positively drained areas and their associated points of discharge.

**Guidance for site design and making development safe:**

- The developer will need to show, through an FRA, that future users of the development will not be placed in danger from flood hazards throughout its lifetime. It is for the applicant to show that the development meets the objectives of the NPPF's policy on flood risk. For example, how the operation of any mitigation measures can be safeguarded and maintained effectively through the lifetime of the development. (Para 048 Flood Risk and Coastal Change PPG).
- The risk from surface water flow routes should be quantified as part of a site-specific FRA, including a drainage strategy, so runoff magnitudes from the development are not increased by development across any ephemeral surface water flow routes. A drainage strategy should help inform site layout and design to ensure runoff rates do not exceed brownfield rates.
- Arrangements for safe access and egress is likely to be limited due to the flooding and will need to be considered further within a site-specific FRA for the tidal and surface water events with an appropriate allowance for climate change, using the depth, velocity, and hazard outputs. This will need to accompany a Flood Response Plan for the site and its users.
- The design and layout of development at the site will need to consider the impact of tidal and surface water flow paths. A



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sequential approach to development should be undertaken with development located in the areas of lowest risk within the site boundary. The site layout should make space for water and seek to avoid obstructing offsite flow paths and avoid off site detriment.

- As outlined in the PPG, the Finished Floor Levels of the development should be raised to a minimum of whichever is higher of 600mm above the:
  - Average ground level of the site
  - Adjacent road level to the building
  - Estimated river or sea flood level
- It is suggested that flood resilient design is adopted in the construction of development. The PPG sets out that flood resistant material that have low permeability should be used to at least 600mm above the estimated flood level; flood resilient materials to at least 600mm above the estimated flood level and raising of electrical equipment at least 600mm above the estimated flood level.

### Key messages

According to the 2025 Arun-Adur modelling, the site is situated 3% in Flood Zone 3b, 1% in Flood Zone 3a and 2% in Flood Zone 2. 99% of the site is shown to flood during the tidal design event (0.5% AEP plus 55% climate change allowance).

The site is a low risk of surface water flooding. 3% of the site is shown to flood during the surface water design event (1% AEP plus 45% climate change allowance).

The key access routes to the site is via Brighton Road. During both the tidal and surface water design events, flooding is predicted along these access routes. Detailed consideration into site access and egress will be required.

Development should be able to progress if:

- The site boundary is altered to exclude Flood Zone 3, otherwise the Exception Test will be required to be satisfied.
- A sequential approach to development is undertaken. Layout and design should aim to avoid developing in the areas of greatest flood risk.
- Mitigation measures are incorporated to reduce the risk of flooding to the development. Early consultation should be held with the Environment Agency to discuss this.
- A site-specific Flood Risk Assessment, including detailed modelling, is undertaken to assess the risk of tidal and surface water flooding in relation to the proposed development, and the access and egress arrangements.
- Infiltration rates and groundwater levels are assessed on site as part of a drainage strategy, including consideration of the impact of tide levels on infiltration.
- Consideration is given to the safe access and egress to the site during the design flood event. A Flood Response Plan should be prepared in line with ADEPT guidance.
- Finished floor levels are raised to a minimum of whichever is higher of 600mm above the average ground level of the site, the adjacent road level to the building or the estimated river or sea flood level. The flood level is for the design event (tidal flood level plus higher central climate change allowance, surface water flood level plus upper end).



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### Sources of information

National Planning Policy Framework (NPPF)

[https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF\\_December\\_2024.pdf](https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf)

Planning Practice Guidance (PPG), Flood Risk and Coastal Change

<https://www.gov.uk/guidance/flood-risk-and-coastal-change>

Flood Map for Planning (NaFRA2 2025)

<https://www.data.gov.uk/dataset/104434b0-5263-4c90-9b1e-e43b1d57c750/flood-map-for-planning-flood-zones1>

Long Term Flood Risk

[Where do you want to check? - Check your long term flood risk - GOV.UK](#)

Shoreham Harbour Joint Area Action Plan

<https://www.adur-worthing.gov.uk/media/Media,156282,smxx.pdf>

British Geological Survey (BGS) Geology Viewer

<https://geologyviewer.bgs.ac.uk/>

Southern Water's Drainage and Wastewater Management Plan

<https://www.southernwater.co.uk/about-us/our-plans/drainage-and-wastewater-management-plans/>

National standards for sustainable drainage systems (SuDS)

<https://www.gov.uk/government/publications/national-standards-for-sustainable-drainage-systems/national-standards-for-sustainable-drainage-systems-suds>

Flood Warning sign up

<https://www.gov.uk/sign-up-for-flood-warnings>