

63781 - 57 River Road, Littlehampton
Flood Risk Assessment
June 2026

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1 Introduction

This Flood Risk Assessment (FRA) has been prepared by AKTII on behalf of the Applicant, for the proposed redevelopment of 57 River Road, Littlehampton BN17 5DB.

This report identifies potential sources of flooding and risk to the Proposed Development. This study has been prepared in accordance with the guidance contained in the National Planning Policy Framework (NPPF) and the Arun District Council Strategic Flood Risk Assessment (SFRA).

This report should be read in conjunction with the Drainage Assessment report dated August 2026, also prepared by AKTII.

This report is prepared for the exclusive use of AKTII and the Applicant. All comments and conclusions in this report are based on the assumption that the sourced data is reliable. AKTII accept no liability for any inaccurate conclusion or assumptions resulting from inaccurate information.

1.1 Response to EA and Reasons for Refusal 2 and 3

1.1.1 Reason for Refusal 2

The Flood Risk Assessment does not comply with the requirements for site-specific flood risk assessments (paragraphs 20 to 21 of the Flood Risk and Coastal Change Planning Practice Guidance) and its site-specific flood risk assessment checklist. In particular, it fails to adequately consider how a range of flooding events (including extreme events) will affect people and property and take the impacts of climate change into account, and it fails to make the development safe for its lifetime. It cannot be ensured that the site or the wider area will be safe from future flood events, and the harm identified will impact both social and environmental objectives outline in the NPPF. This is contrary to Arun Local Plan policy W DM2 and the NPPF.

The Flood Risk Assessment considers the flood risk from all sources and has been updated to reflect the latest flood data provided by the Environment Agency (including extreme events) and demonstrates that people and property are safe for the lifetime of the development.

1.1.2 Reason for Refusal 3

The development has failed the sequential test and exception tests utilised to firstly avoid the impacts of flood risk and then to ensure that development and the wider area are safe from the impacts of flooding. It cannot be ensured that the site or the wider area will be safe from future flood events, and the harm identified will impact both social and environmental objectives outline in the NPPF. The proposals are therefore contrary to Arun Local Plan policy W DM2 and the NPPF.

The Sequential Test for the development requires the Exception Test to be undertaken. The Exception Test demonstrates that the development provides wider sustainability benefits to the community and is safe for its lifetime taking account of the vulnerability of it's users, without increasing flood risk elsewhere and reducing flood risk overall. Therefore the development passes both the Sequential and Exception Tests.

2 The Site

2.1 Site Location

The site that is to be redeveloped is located at 57 River Road, Littlehampton BN17 5DB.

The site is bounded to the north east by River Road, to the north west by 47 River Road, to the south east by 49 River Road and to the south west by the River Arun.

The site is located within the Littlehampton River Road Conservation Area and is listed as a Building of Special Interest.

The National Grid Reference for the site is TQ 02371 02109 and the nearest postcode is BN17 5DB.

Figures 2.1 to 2.3 below show the location of the proposed development.

2.2 Site description

The adjacent recently developed site, 47 River Road, is the first property on the eastern bank of Littlehampton's Arun riverside just after entering the town from the A258 across a bridge. It was developed originally in the early 19th Century as home to a small blacksmith's shop and warehouses and in recent years was used as a car repair workshop. The current site, 57 River Road, is a further workshop building associated with the garage and the yard area that serves it.

The site occupies an area of approximately 475 m² and is fairly flat with the maximum level difference approximately 0.1 m. The average ground surface level on site is approximately 3.40 m AOD. A site specific topographical survey for 55-57 River Road has been included in Appendix 1 for reference.

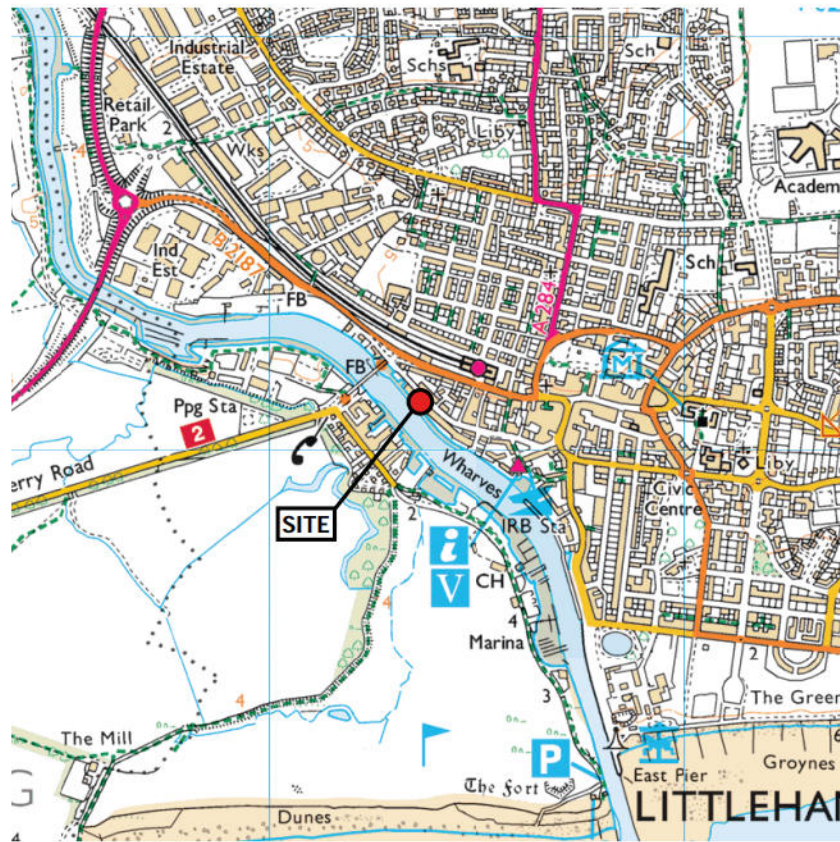


Figure 2.1 Site Location (StreetMap)



Figure 2.2 Site Location (Google Earth)

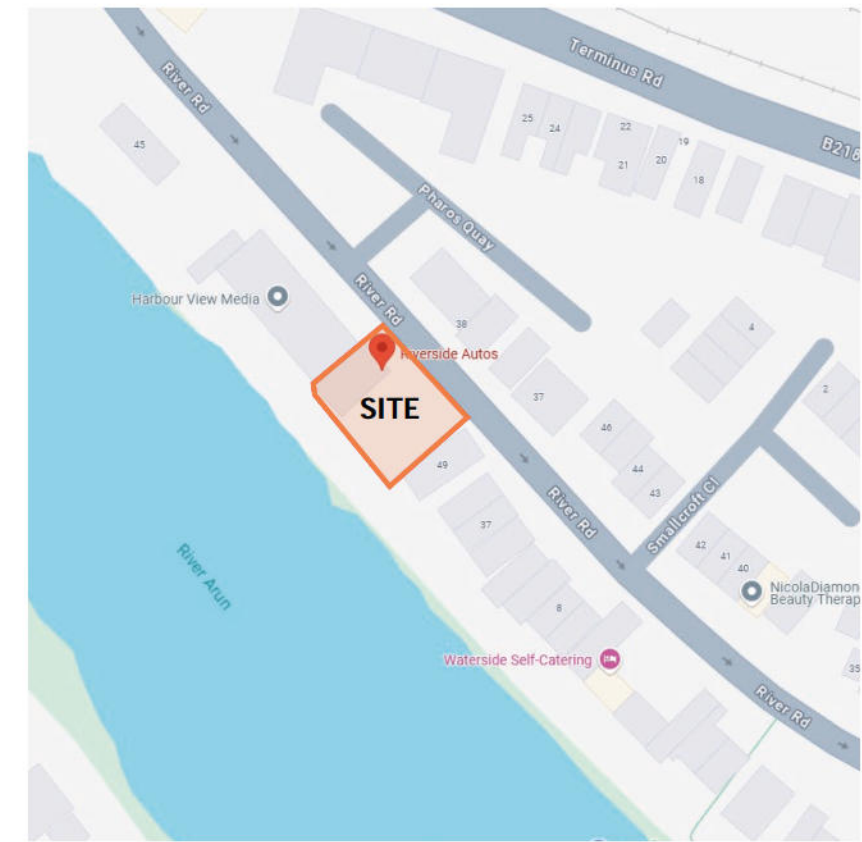


Figure 2.3 Site Location (Google Maps)

3 Proposed Development

It is proposed to redevelop the site for residential purposes in a similar manner to the adjacent site 47 River Road which is owned by the same developer.

The ground floor level will consist of communal car parking, bicycle parking, bin store areas. Habitable residential space will be provided at upper ground floor and above.

Nine apartments are proposed with each apartment ranging from one to three bedrooms.

All habitable space has a finished floor level above 5.18m.

The proposed ground, upper ground, first, second and third floor layouts along with the roof plan are shown in Figures 3.1 to 3.6 below for reference.

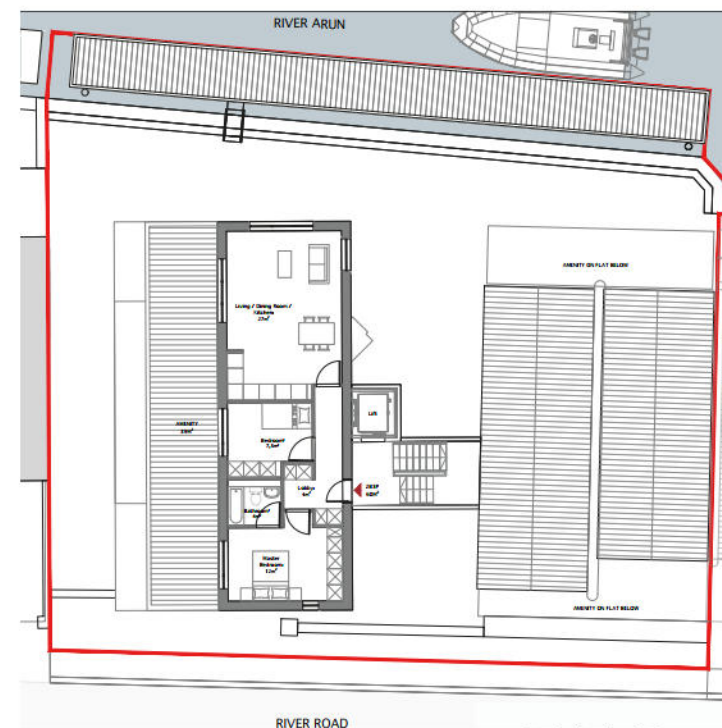


Figure 3.5 Proposed Third Floor Layout

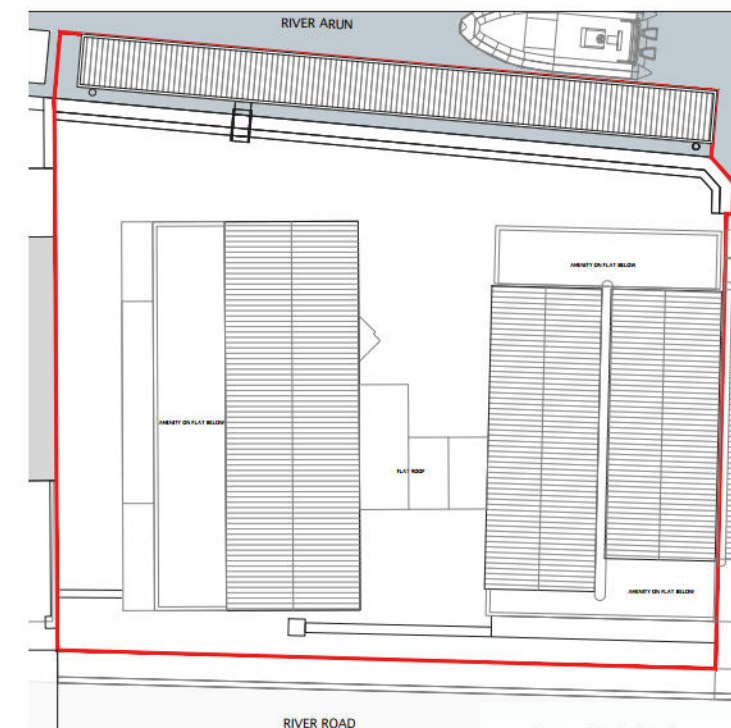


Figure 3.6 Proposed Roof Layout

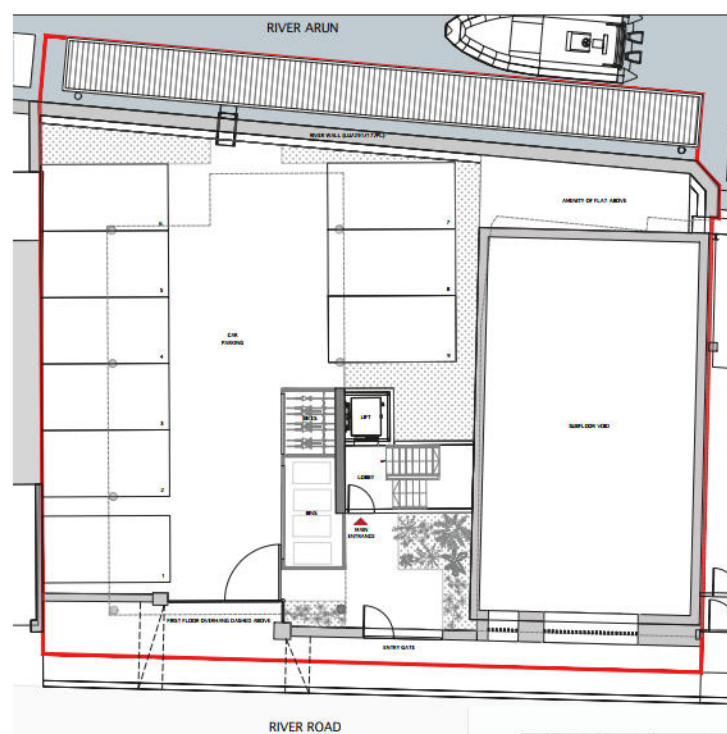


Figure 3.1 Proposed Ground Floor Layout

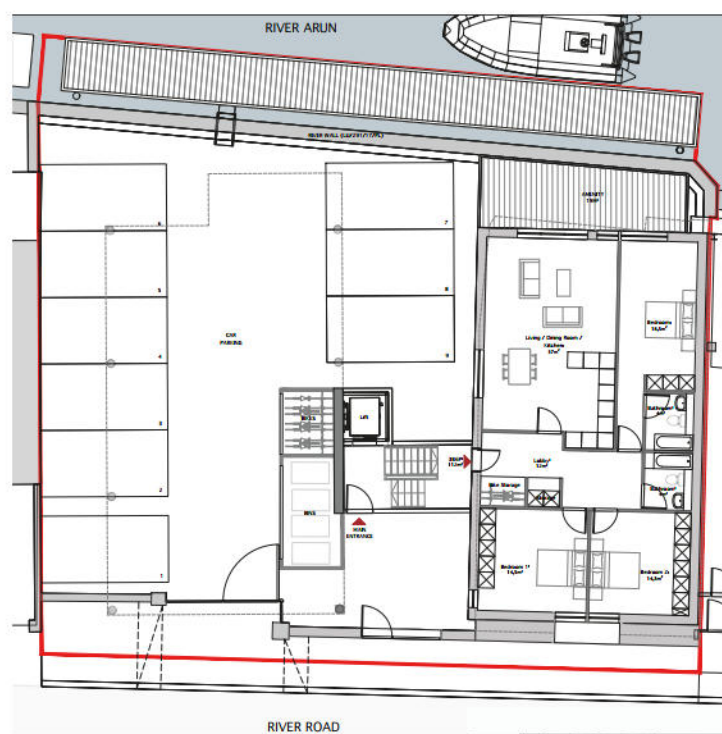


Figure 3.2 Proposed Upper Ground Floor Layout

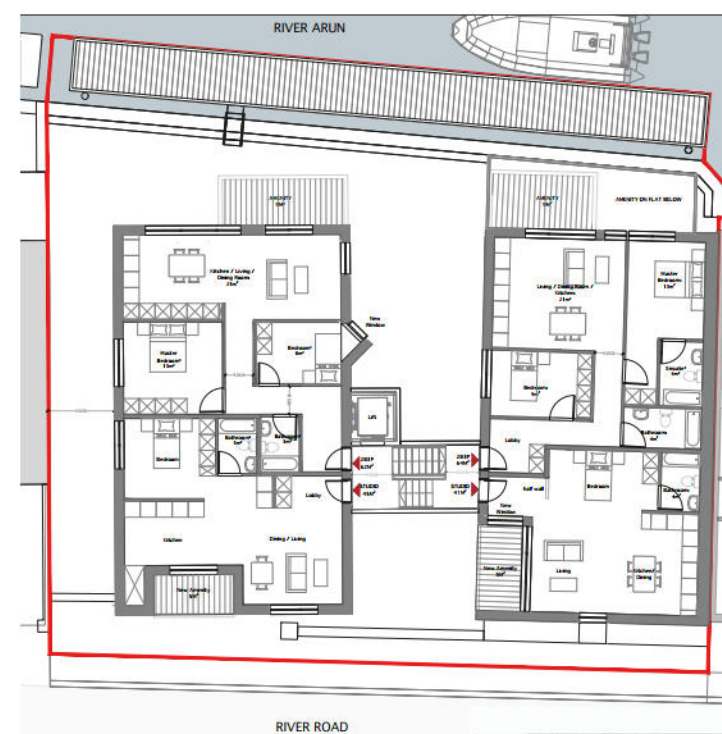


Figure 3.3 Proposed First Floor Layout



Figure 3.4 Proposed Second Floor Layout

4 Policy

4.1 National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) has superseded Planning Policy Statement 25 “Development and Flood Risk” (PPS 25) although the requirements and goals remain essentially the same:

- The susceptibility of land to flooding is a material planning consideration;
- The Environment Agency has the lead role in providing advice on flood issues, at a strategic level and in relation to planning applications;
- Planning decisions should apply the precautionary principle to the issue of flood risk, using a risk-based search sequence to avoid inappropriate development on undeveloped and undefended flood plains etc;
- Developers should fund flood defences and warning measures required because of the development;
- Planning policies and decisions should recognise that the consideration of flood risk and its management needs to be applied on a whole-catchment basis and not only be restricted to flood plains.

With regard to the NPPF, those proposing particular developments are responsible for:

- Providing an assessment of whether any proposed development is likely to be affected by flooding and whether it will increase flood risk elsewhere and the measures proposed to deal with these effects and risks and;
- Satisfying the local planning authority that any flood risk to the development or additional risk arising from the proposal will be successfully managed with the minimum environmental effect thus ensuring the safe development and secure future occupancy of the site.

After this has been addressed, it is then the local planning authority's responsibility (advised as necessary by the Environment Agency) to determine an application for planning permission after taking into account all material considerations, including the issue of flood risk and how it might be managed or mitigated. Local planning authorities are required to adopt a risk-based approach to proposals for development in flood risk areas. The assessment of risk should take into account:

- The area liable to flooding;
- The probability of it occurring, both now and over time;
- The extent and standard of existing flood defences and their effectiveness over time;
- The likely depth of flooding;
- The rates of flow likely to be involved; and
- The nature of the development proposed and the extent to which it is designed to deal with flood risk.

Local planning authorities in conjunction with the Environment Agency are responsible for determining that the threat of flooding should be managed. This is to ensure that the development is and remains safe throughout its lifetime (i.e. it has an appropriate degree of protection) and does not increase flood risk elsewhere.

Following flooding in December 2000 the Environment Agency (EA) provided indicative flood plain maps to all authorities and published them on the EA website. In addition to these indicative maps (following a national programme adopted by the Agency in 1996), detailed data and maps for priority areas at risk are available, to provide precise information for building developments.

The Government looks to local planning authorities under the NPPF to apply the risk-based approach to their decisions on development control through a sequential test. Under the test, sites are to be categorised under the following zones.

- 1 Areas with little or no potential risk of flooding (annual probability less than 0.1% for rivers, tidal & coastal). These areas would have no constraints on development other than the need to ensure that the development does not increase run-off from the site to greater than that from the site in its undeveloped or presently developed state. For development proposals on sites located within Flood Zone 1 comprising one hectare or above the vulnerability to flooding from other sources as well as from river and the sea flooding, and the potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off, should be incorporated in an FRA.
- 2 Areas with low potential risk of flooding (annual probability between 1.0% - 0.1% for rivers and between 0.5% - 0.1% for tidal & coastal). These areas would be suitable for most developments.
- 3a Areas with high potential risk of flooding (annual probability greater than 1.0% for rivers and greater than 0.5% for tidal & coastal). These areas will generally be suitable for “Less Vulnerable” uses such as commercial, retail and industrial uses, provided there are adequate flood defences in place, that ensure buildings are designed to resist flooding, there are suitable warning and evacuation procedures in place and the new development does not add to flood risk downstream. “More Vulnerable” uses such as residential, health and education will require the Exception Test to be passed.
- 3b Areas at highest risk from flooding (including those areas behind defences that offer a standard of defence less than 1% for rivers and less than 0.5% for tidal & coastal or where there is a significant risk that failure could lead to rapid inundation by fast flowing water). These areas may be suitable for recreation, sport and conservation use.

4.2 EA Standing Advice on Flood Risk Assessments

The Standing Advice focuses on developments in areas at risk of flooding—particularly Flood Zones 2 and 3, or areas with critical drainage problems. Developers must conduct a site-specific flood risk assessment (FRA) if their project involves new buildings, changes in land use, or other significant developments in these zones. The FRA must demonstrate how flood risks will be managed, including the use of flood-resistant and resilient construction, and must consider the impact of climate change. The guidance also emphasizes the importance of early planning and using Environment Agency flood maps and local Strategic Flood Risk Assessments (SFRAs) to inform decisions.

The advice outlines the sequential and exception tests. The document confirms that more vulnerable development would require the exception test in Flood Zone 3a, however would not be required in Flood Zone 2. Advice is also provided on Finished Floor Levels, Flood Resilience and Resistance, access and escape, and surface water management. Normally these considerations are part of the process of the exception test to demonstrate development should be made safe for its lifetime without increasing flood risk elsewhere. The standing advice states that the finished floor level of the building should ideally be 300mm above the estimated river or flood level where there is a high degree of certainty in the flood level. In addition, the building should ideally incorporate flood resistant construction to 600mm above the estimated flood level.

Finished floor levels should be 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

Where there is a high level of certainty about your estimated flood level, **it may be appropriate to reduce this to 300mm**. If there is a particularly high level of uncertainty it may need to be increased.

5 Strategic Flood Risk Assessments

Strategic Flood Risk Assessments are produced by Local Authorities in order to form the basis for preparing appropriate policies for flood risk management. The Environment Agency advise that Developers "should consult the Strategic Flood Risk Assessment prepared by your local planning authority" when preparing their design.

The site has been the subject of the Arun District Council Strategic Flood Risk Assessment (SFRA) which was originally undertaken by Capita Symonds and published in February 2008. JBA Consulting were then commissioned to update the report during 2016 with the last update being published in March 2026.

The key findings and recommendations from this report relating to the development site are summarised in the following section and have been used to inform the preparation of this site-specific flood risk assessment.

5.1 Arun District Council SFRA

Arun District Council commissioned JBA Consulting to prepare an updated Level 1 Strategic Flood Risk Assessment (SFRA), published as a Final Report in March 2026.

The update of the SFRA was to be used in decision making and to inform decisions on the location of future development and the preparation of sustainable policies for the long-term management of flood risk.

The key objectives of the review performed during the preparation of the 2026 SFRA were:

1. To consider the latest flood risk policy and guidance.
2. To review the latest available flood risk data and climate change information.
3. To assess current and future flood risk from all sources To support the preparation of the emerging Local Plan Update (LPU).
4. To support the application of the Sequential Test for site allocations and planning applications.
5. To provide site-specific flood risk information for proposed development sites.
6. To provide a comprehensive set of flood risk maps To identify when site-specific Flood Risk Assessments (FRAs) are required.
7. To provide guidance for site-specific FRAs and flood mitigation measures.
8. To identify opportunities to reduce flood risk and support flood risk management.

The main sources of flooding were identified as follows:

- Arun District has a history of documented flood events from several sources of flood risk. Flood records indicate that the main source of risk is from surface water and groundwater sources, although fluvial and tidal/coastal flooding has also occurred previously and fluvial/tidal interactions can influence surface water flood risk through reducing discharge from surface water drainage systems. These conclusions are supported by updated Risk of Flooding from Surface Water (RoFSW) mapping, JBA Groundwater Emergence Mapping and Southern Water's Drainage and Wastewater Management Plan (DWMP).
- The principal watercourses flowing through Arun District are the River Arun and Aldingbourne Rife and their tributaries. The main source of fluvial flood risk is associated with these watercourses.
- The most significant flood events reported to have affected the district occurred in 1968, 1974, 1980/81, 2010, 2012, most of which included surface water flooding.
- Historic records indicate that Arun District has experienced numerous surface water / drainage related flood events, which have been attributed to a range of sources. Indeed, SWMPs have been prepared to investigate these. The primary source of surface water flooding is attributed to heavy rainfall overloading highway carriageways and paved areas, drains and gullies, as well as blockages and high water levels impeding free discharge from surface water drains and gullies. The updated Flood Map for Surface Water (uFMfSW) shows a number of surface water flow paths which predominantly follow topographical flow paths along existing watercourses with some isolated ponding located in low lying areas.
- Significant groundwater flood events have been recorded across the district. This risk is supported by JBA Groundwater Emergence Mapping, which indicates that susceptibility to groundwater emergence is generally high across much of the district, particularly in the western and southern areas.
- The Sewer Incident Report Form data supplied by Southern Water indicates a total of 315 recorded flood incidents in the district. Several post code areas have recorded incidents, with the two indicating the greatest number of entries being PO22 7 (36) and PO21 3 (30). Southern Water's DWMP for the Arun and Western Streams catchment identifies deterioration of wastewater systems and the need for resilience improvements to networks and treatment works.
- In relation to artificial sources of flooding, there are no records of flooding from reservoirs impacting properties inside the district. The Environment Agency's Risk of Flooding from Reservoir's flood extent mapping indicates that there are three reservoirs that could affect the district in the event of a breach. The extent of flooding from these is predicted to be relatively confined in the content of the district, and located within rural areas.

Recommendations for Flood Zone 3a

Development in Flood Zone 3a is significantly constrained by flood risk. Highly Vulnerable development is not permitted within this zone and More Vulnerable development and Essential Infrastructure are only permitted if the Exception Test can be passed.

- An FRA is required for all developments within this zone.
 - It should be demonstrated that flood defences provide an acceptable standard of protection, including an allowance for climate change for the lifetime of the development.
 - Residual risks should be assessed, and the Environment Agency consulted regarding whether there is a need for a breach analysis to map a rapid inundation zone.
- The layout of buildings and access routes should adopt a sequential approach, steering buildings towards areas of lowest risk within the site. Where rapid inundation zones have been identified, development should be avoided in these areas.
- Development should not impede flow routes, reduce floodplain storage or consume flood storage in a 'flood cell' within a defended area. If the development does result in a loss of storage, compensatory floodplain storage should be provided on a 'level for level' and 'volume for volume' basis.
- If existing defences are to be upgraded as part of the development, an assessment should be undertaken to ensure this does not result in an increase in flood risk elsewhere.
- Development design should incorporate mitigation measures, to manage any flood risk to the development, including residual risk for the lifetime of the development. FFLs should be set 600mm above the 1 in 100-year (1% AEP) flood level, plus an allowance for climate change. Climate change allowances should be based on the peak river flow and peak rainfall intensity allowances set out in the 2026 SFRA for the Arun and Western Streams Management Catchment.
- It is recommended that all types of new development behind flood defences is avoided, where possible, due to the residual risks of breach and overtopping
- Consideration should be given to the type of building that will be permitted, for example single-storey buildings and basements should be avoided.
- The SFRA identifies Property Flood Resilience measures as a means of reducing flood damage and improving recovery following a flood event. Where required, appropriate flood resistance and resilience measures will be incorporated into the development design.

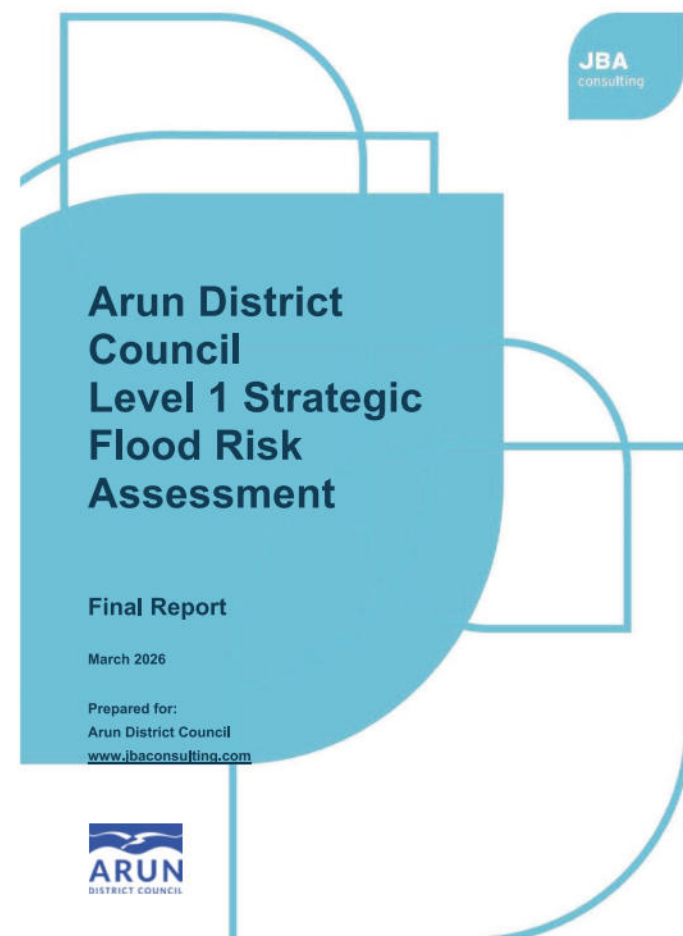


Figure 5.1 Arun District Council Strategic Flood Risk Assessment

6 Sources of Flooding

In accordance with the NPPF, it is a requirement to assess the flood risk to the Site from all potential sources. For the purposes of this assessment this has been broken down into five potential sources:

- Flooding from rivers and sea
- Flooding from sewers
- Flooding from groundwater
- Flooding from artificial sources (e.g. reservoirs and canals)
- Flooding from surface water

These sources are discussed and assessed in more detail in Sections 6.3 to 6.7 below.

6.1 Sequential Test

A risk-based Sequential test should be applied at all stages of the planning process. The aim is to steer developments to areas at the lowest probability of flooding (i.e. to Flood Zone 1).

Referring to the Environment Agency's "Flood Map for Planning" (Figure 6.2), the site is located entirely within Flood Zone 3a but benefits from the flood defences along the banks of the River Arun.

The proposed residential use is classified as 'more vulnerable' in accordance with NPPF Table 2 (refer to Figure 6.1).

Referring to NPPF Table 3 (shown below in Figure 6.3) "More Vulnerable" classifications are suitable in Flood Zones 1 and 2 but require the Exception Test to be undertaken for sites within Flood Zone 3a.

6.2 Exception Test

The Exception Test requires two additional elements to be satisfied (as set out in paragraph 164 of the National Planning Policy Framework) before allowing development to be allocated or permitted in situations where suitable sites at lower risk of flooding are not available following application of the sequential test. It should be demonstrated that:

- Development that has to be in a flood risk area will provide wider sustainability benefits to the community that outweigh flood risk; and
- The development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

The following items have been considered as part of the Exception Test:

1. The location adjoins the town centre, railway station and bus routes meaning the development is highly sustainable, the mitigation measures taken in the design mean the development is not an unacceptable risk nor does it pose an unacceptable risk to existing developments in the area (refer to Section 7 for further commentary on this).
2. It provides safe and attractive residential units in a very popular, sought after riverside location which cannot be provided elsewhere in a lower risk site.
3. The proposed development forms an extension of the recently developed 47 River Road by the same Client.
4. The proposed development is on previously developed land.
5. Mitigation measures are proposed as part of the development in the form of attenuation which will reduce the surface water flood risk to both the site and the wider area and demonstrates the building is safe for its lifetime.
6. The proposed development is located within the Littlehampton Economic Growth Area which is an area identified for development from the Housing and Economic Land Availability Assessment (HELAA)

It is therefore considered that the proposed development meets the requirements of the Exception Test and the proposed land use is acceptable on this site.

Essential infrastructure
• Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk. • Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood. • Wind turbines.
Highly vulnerable
• Police stations, ambulance stations and fire stations and command centres and telecommunications installations required to be operational during flooding. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes and park homes intended for permanent residential use. • Installations requiring hazardous substances consent (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as "essential infrastructure").
More vulnerable
• Hospitals. • Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. • Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels. • Non-residential uses for health services, nurseries and educational establishments. • Landfill and sites used for waste management facilities for hazardous waste. • Sites used for holiday or short-let caravans and camping, <i>subject to a specific warning and evacuation plan</i>.
Less vulnerable
• Police, ambulance and fire stations which are not required to be operational during flooding. • Buildings used for shops, financial, professional and other services, restaurants and cafes, hot food takeaways, offices, general industry, storage and distribution, non-residential institutions not included in "more vulnerable", and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill and hazardous waste facilities). • Minerals working and processing (except for sand and gravel working). • Water treatment works which do not need to remain operational during times of flood. • Sewage treatment works (if adequate measures to control pollution and manage sewage during flooding events are in place).
Water-compatible development
• Flood control infrastructure. • Water transmission infrastructure and pumping stations. • Sewage transmission infrastructure and pumping stations. • Sand and gravel working. • Docks, marinas and wharves. • Navigation facilities. • Ministry of Defence defence installations. • Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location. • Water-based recreation (excluding sleeping accommodation). • Lifeguard and coastguard stations. • Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms. • Essential ancillary sleeping or residential accommodation for staff required by uses in this category, <i>subject to a specific warning and evacuation plan</i>.

Figure 6.1 National Planning Policy Framework: Table 2 - Flood Risk Vulnerability Classification

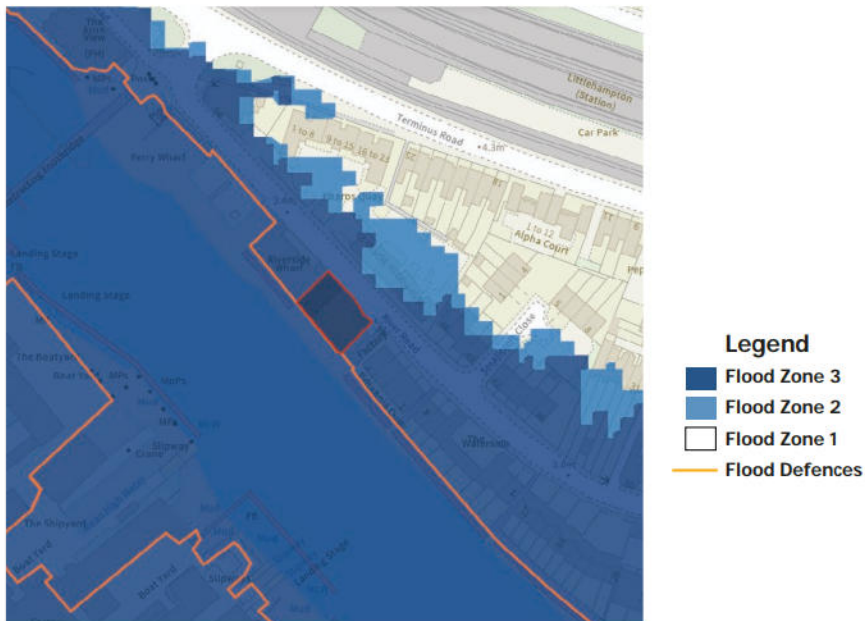


Figure 6.2 Environment Agency Flood Map for Planning

Flood Risk vulnerability classification (see Table 2)	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone (see table 1)					
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	✓	Exception Test required	✓	✓
Zone 3a	Exception Test required	✓	✗	Exception Test required	✓
Zone 3b functional floodplain	Exception Test required	✓	✗	✗	✗

Figure 6.3 National Planning Policy Framework: Table 3 - Flood Risk Vulnerability and Flood Zone "Compatibility"

6.3 Flooding from Rivers and Sea

Fluvial flooding is caused by rivers, watercourses or ditches overflowing. Tidal flooding is caused by elevated sea levels or overtopping by wave action. In estuarine areas, flooding might arise from either fluvial or tidal flooding, or a combination of the two.

Based on the Environment Agency's "Flood Map for Rivers and Sea" (refer to Figure 6.4), the site is located entirely within an area assessed as having a low chance of flooding - between a 0.1% and 1% annual probability of river or sea flooding.

The Environment Agency's Flood risk summary also assesses the site to be at low risk of flooding from rivers and the sea (refer to Appendix 3).

Since the publication of the previous SFRA in 2016, the Littlehampton Flood Defence Improvement Scheme has been implemented which has raised the top of the flood wall to 4.80m AOD along the frontage of the site. This has been carried out to protect against a flood with a probability of 1 in 300 years.

EA Product 6 Data was received in January 2026, and this references Arun to Adur Coastal Modelling (2012), completed by JBA Consulting, and Littlehampton updated defended modelling (2017).



Figure 6.4 Environment Agency Flood Map for Rivers and Sea

All of the different epoch and climate change scenarios were inspected. The shapefile layer outputs generated were for depth only and not elevation. In order to convert the depth to an elevation, the depth was added to the EA LiDAR DTM.

The scenario names and the depths are shown in Table 6.1 below. The Product 6 data would indicate that in the defended scenario for the 100 year event (1%AEP) plus the climate change at the suitable epoch, the predicted flood level is 4.50m AOD, which would be at least 600mm below the FFL level, and is the most suitable figure for design flood level. It is assumed based on the Product 6 data that "100yr_cc_Def" represents 100 year tidal event at the 2115 epoch, Defended condition. This would be the design level to be taken forward.

The Arun 2026 SFRA indicates that there is a 2024 Littlehampton Coastal and Arun and Adur Coastal model available, but this was not made available in the Product 6 pack.

To account for potential uncertainty in whether the 2012 modelling is the correct climate change allowance (it was not clear in the Product 6 report), the building FFL can also be assessed against higher scenarios depths from the 2012 model to demonstrate it is still fine.

To further validate the information above, The Arun SFRA notes the Tidal flood risk can be assessed using Extreme Still Water Sea Levels (ESWSL). An ESWSL is the level the sea is expected to reach during a storm event for a particular magnitude tidal flood event as a result of the combination of tides and surges.

The EA Dataset <https://www.data.gov.uk/dataset/73834283-7dc4-488a-9583-a920072d9a9d/coastal-design-sea-levels-coastal-flood-boundary-extreme-sea-levels-2018> was obtained and queried using GIS software to obtain the extreme still water levels. This determined a water level of +3.87m for 100 years (fid = 3594, base_year = 2017). The EA's climate change allowances were added to determine the future level in 100 years time (the lifetime of the development).

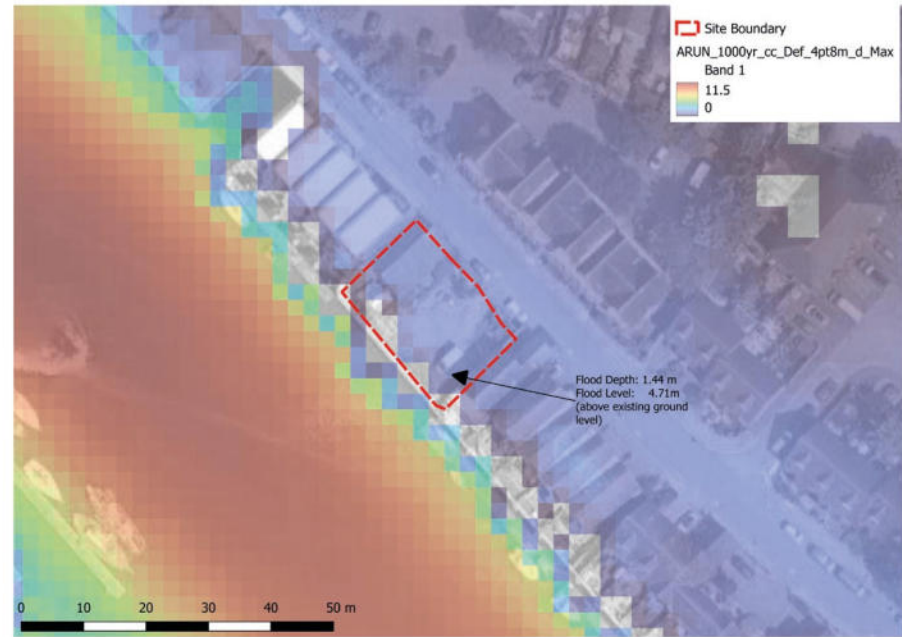


Figure 6.5 Environment Agency Product 6 Flood map (1 in 1000 + cc)

This determined that the future still water would be 5.15m and this is still water level on shore not accounting for effects of water attenuating or shoaling moving closer to land.

This would still be below the FFL of habitable floors, and this ignores the impact of flood defences.

In addition to the raised flood defences, the lowest accommodation level has been set at 5.18m AOD which places it 680mm above the 1 in 100 year flood level (with allowance for future climate change) and 590mm above the 1 in 200 year level (with allowance for future climate change) in the unlikely event of a breach in the flood defences.

The site also falls within Flood Warning Area 065FWC2602 and residents would be required to register for flood warnings.

Using all the available evidence it is therefore considered that the site has a **low** probability of flooding from fluvial and tidal sources.

Flood Scenario	Flood Depth(m)	Flood Level (m)
100yr_cc_Def	1.23	4.5
200yr_cc_Def	1.32	4.59
1000yr_cc	1.44	4.71
1000yr_2065_Def	0.94	4.21

Table 6.1 EA Product 6 Flood Data Summary for the Site Area

6.4 Flooding from Sewers

Sewer and highway drainage flooding occurs when the capacity of systems are exceeded, or the function of the system is impeded (e.g. tide locking), which results in surcharging of the system and water being forced to the surface via gullies, manholes, foul water appliances such as toilets or other dedicated overflows.

The available Southern Water record plan (Figure 6.6) indicates that the only public sewer in the vicinity of the site is a 450 mm combined sewer running under River Road to the north of the site.

The updated Risk of Flooding from Surface Water (RoFSW) mapping referenced in the 2026 Arun District SFRA shows no surface water flooding adjacent to the site during events up to and including the 1% AEP (1 in 100 year) extent. In the 0.1% AEP (1 in 1,000 year) extent, predicted surface water flooding is limited to the centre of River Road and does not extend into the site.

The 2026 SFRA notes that Southern Water has provided records of historic sewer flooding across the district; however, no sewer flooding incidents are recorded in the vicinity of the site.

Using all the available evidence it is therefore considered that the site has a **very low** probability of flooding from sewers and the local drainage network, as long as they continue to be adequately maintained.

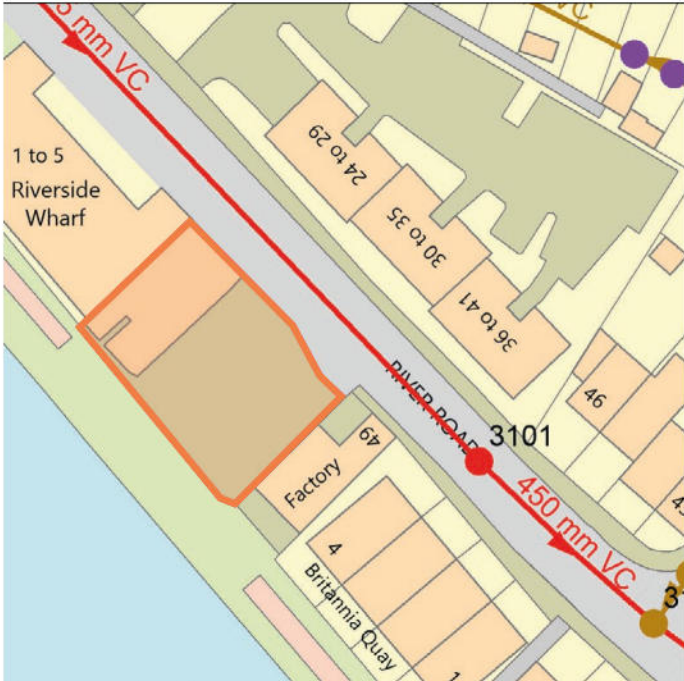


Figure 6.6 Southern Water Asset Record - Sewers

6.5 Flooding from Artificial Sources

Where infrastructure exists that retains, transmits or controls the flow of water; flooding may result if there is a structural, hydraulic, geotechnical or mechanical failure of the infrastructure.

The available Southern Water record plan (Figure 6.7) indicates that the only water main within the vicinity of the site is a 4" dia. distribution main running under River Road to the north of the site.

Although unlikely, a water main can burst at anytime which can result in the flooding of nearby properties.

To further reduce the flood risk from water mains, any initial sign of a burst water main should be reported to Southern Water as soon as possible and the local highway drainage system should be adequately maintained.

There are no artificial sources of flooding in the immediate vicinity of the site.

The Environment Agency's Flood Map for Reservoirs confirms that the site is not within any mapped reservoir breach extent.

The 2026 SFRA does not identify any historic flooding from artificial sources in the vicinity of the site.

The Environment Agency's flood risk summary confirms that reservoir flooding is unlikely at this location.

Based on this information it is therefore considered that the site is at **low** risk of flooding from artificial sources.



Figure 6.7 Southern Water Asset Record - Water Mains

6.6 Flooding from Groundwater

Groundwater flooding is caused by the emergence of water originating from sub-surface permeable strata and is often highly localised and complex. After a prolonged period of rainfall, a considerable rise in the water table can result in inundation for extended periods of time.

Although Appendix F - Areas Susceptible to Groundwater, Sheet No. 25 of the Arun District SFRA (contained in Appendix 2) indicates the site to be at an elevated risk of flooding from groundwater, there has been no historic groundwater flooding incidents on the site and no groundwater flooding was encountered during the construction of the adjacent site.

The Environment Agency's Flood risk summary also assesses that flooding from groundwater is unlikely in this area (refer to Appendix 3). In addition, no basements are proposed, and groundwater levels are unlikely to be above sea level.

Based on this evidence, we consider that the site is at **low** risk of flooding from groundwater sources.

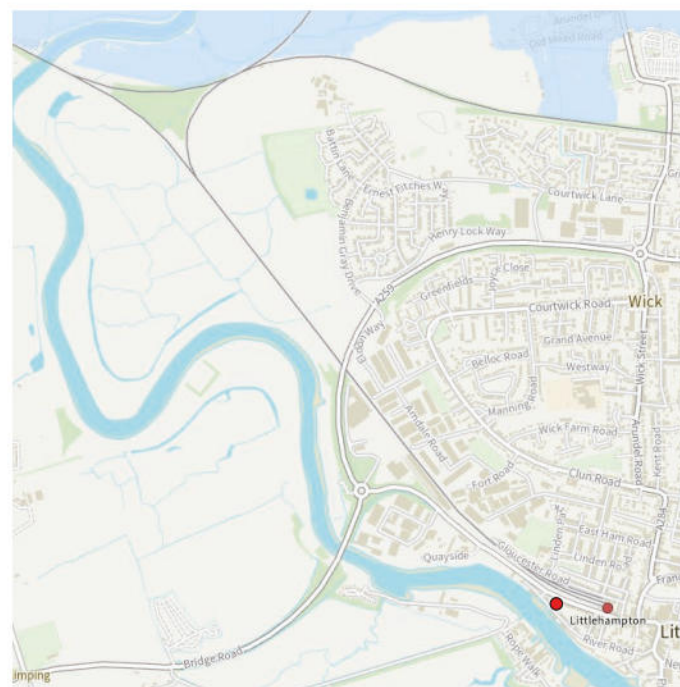


Figure 6.8 Environment Agency Reservoir Flood Map

6.7 Flooding from Surface Water

Surface water flooding can occur as a result of either overland flow or ponding. Overland flow occurs following heavy or prolonged rainfall, snow melt, or where intense rainfall is unable to soak into the ground or enter drainage systems due to blockages or capacity issues. Unless it is channelled elsewhere, the run-off travels overland, following the gradient of the land. Ponding occurs as the overland flow reaches low lying areas in the local topography. These flood events tend to have a short duration and depend on a number of factors such as geology, topography, rainfall, saturation, extent of urbanisation and vegetation. As the surrounding area is highly developed it entirely comprises of impermeable hardstanding area, which, during high intensity storms, will generate large surface water run-off flows.

The Environment Agency have provided AKT II with their 2025 Risk of Flooding from Surface Water (RoFSW) dataset and this has been used to produce the maps in this section of the report. The dataset contains "no climate change" and "with climate change" data therefore each map has been produced for both scenarios for comparison.

In each map

- High risk refers to a greater than 3.3% chance of happening each year
- Medium risk refers to between a 1% and 3.3% chance of happening each year
- Low risk refers to between a 0.1% and 1% chance each year
- Very low risk refers to less than a 0.1% chance of happening each year.

The Extent of Flooding from Surface Water map shown in Figure 6.9 indicates that in the **no climate change** scenario, the site is generally at **very low risk** of flooding from surface water with a small area at the entrance gate indicated as being at **low risk** which is consistent with a slightly lower area indicated in this location on the topographical survey.

In the **with climate change** scenario (Figure 6.10), the extent of **very low risk** area on the site reduces with **low risk** areas now occupying approximately 50% of the site. A very small area at the existing entrance gate is shown as **medium risk** which is consistent with a slightly lower area indicated in this location on the topographical survey.

In both scenarios, River Road itself is generally at **medium to high risk** of surface water flooding, particularly towards the east and towards the town centre.

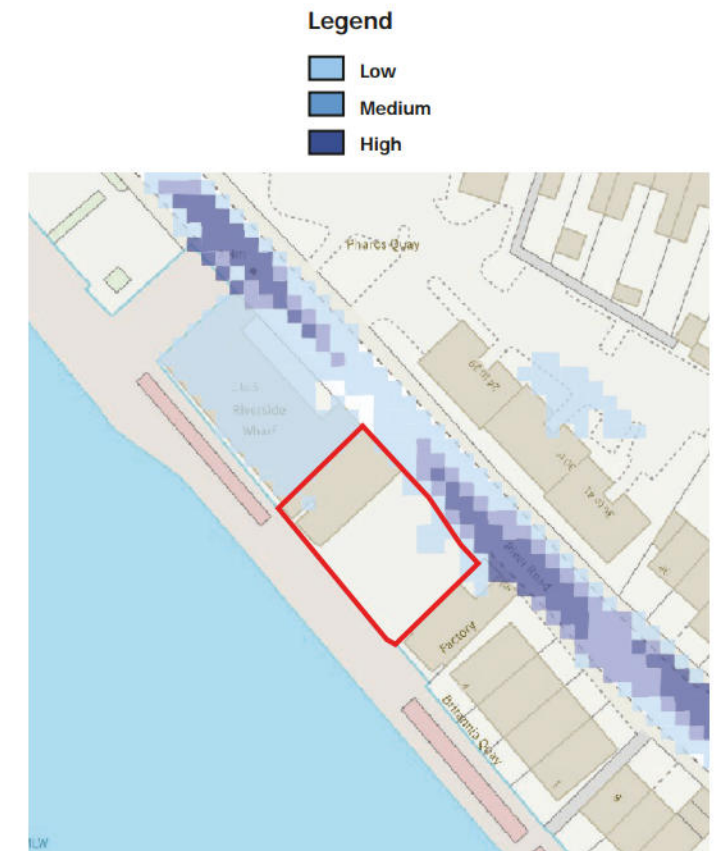


Figure 6.9 Environment Agency's Extent of Flooding from Surface Water Map with No Climate Change

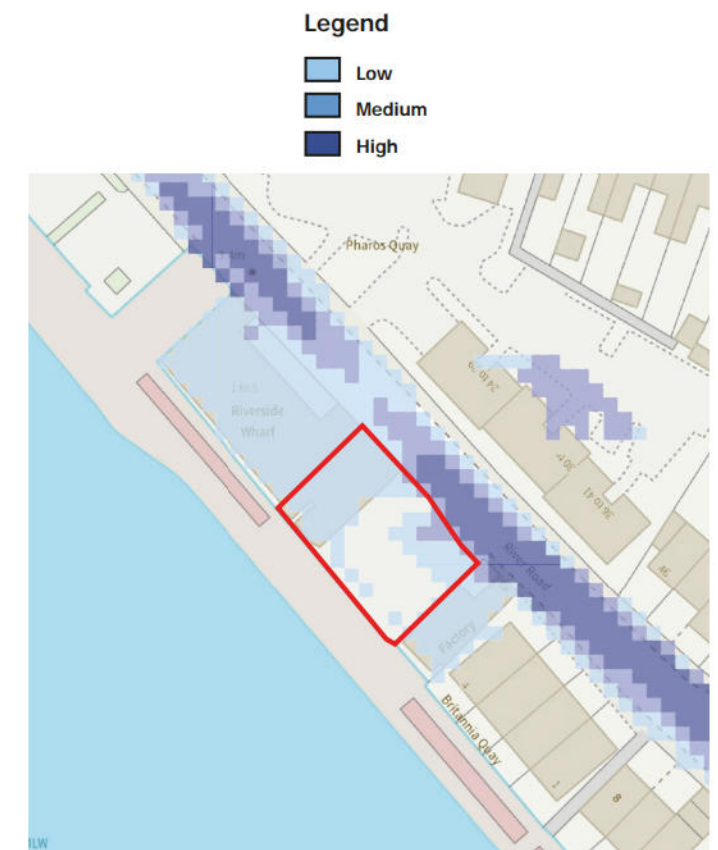


Figure 6.10 Environment Agency's Extent of Flooding from Surface Water Map with Climate Change

The Environment Agency data provides further detail of surface water flooding in terms of depth, velocity and hazard rating. These are considered in the following sections.

6.7.1 Surface water depth

In the **no climate change** scenario:

- The up to 200 mm flooding depth map (Figure 6.11) indicates that the majority of the site is clear of flooding with the exception of a small spot at low risk of reaching 200 mm deep at the rear of the existing garage building which is consistent with a slightly lower area indicated in this location on the topographical survey. Outside the site, there are areas at low risk of flooding to 200 mm deep along River Road and a small patch at high risk of reaching 200 mm deep in front of 49 River Road.
- The up to 300 mm flooding depth map (Figure 6.12) indicates that there is no risk of surface water flooding reaching this depth on the site. Outside the site, there is a small patch at low risk of reaching 300 mm deep in front of 49 River Road.
- The up to 600 mm flooding depth map (Figure 6.13) shows the site and surrounds are completely clear of any risk of surface water flooding reaching 600 mm deep.

In the **with climate change** scenario:

- The up to 200 mm flooding depth map (Figure 6.14) indicates that the majority of the site is clear of flooding with the exception of a narrow strip which is at low risk of reaching 200 mm deep towards the rear of the existing yard which is consistent with a slightly lower area indicated in this location on the topographical survey. Outside the site, the majority of River Road and the buildings north and south of the site are indicated as being at low risk of reaching 200 mm deep.
- The up to 300 mm flooding depth map (Figure 6.15) indicates that there is no surface water flooding on the site except for a small spot towards the rear of the exiting yard which has a low risk of reaching 300 mm deep which is consistent with a slightly lower area indicated in this location on the topographical survey. Outside the site, there is a small patch at low risk of reaching 300 mm deep in front of 49 River Road.
- The up to 600 mm flooding depth map (Figure 6.16) shows the site and surrounds are completely clear of any risk of surface water flooding reaching 600 mm deep.

Therefore, the depth of surface water flooding on the site is generally less than 200 mm. The maximum depth of surface water flooding on site is 300 mm. The majority of the site has a **very low risk** of flooding to 200 mm depth with a narrow strip towards the rear of the yard area having a **low risk** of flooding to 200 mm depth. Within this low risk zone, a small spot has a **low risk** of flooding to 300 mm depth.

Also, as part of the proposed scheme, the localised low spots within the existing yard noted above will be removed and so the current ponding will no longer occur.



Figure 6.11 Environment Agency's Risk of Flooding from Surface Water No Climate Change (0.2 m Depth Band)



Figure 6.12 Environment Agency's Risk of Flooding from Surface Water No Climate Change (0.3 m Depth Band)



Figure 6.13 Environment Agency's Risk of Flooding from Surface Water No Climate Change (0.6 m Depth Band)



Figure 6.14 Environment Agency's Risk of Flooding from Surface Water with Climate Change (0.2 m Depth Band)



Figure 6.15 Environment Agency's Risk of Flooding from Surface Water with Climate Change (0.3 m Depth Band)



Figure 6.16 Environment Agency's Risk of Flooding from Surface Water with Climate Change (0.6 m Depth Band)

6.7.2 Surface water velocity

In the **no climate change** scenario:

- The 0 m/s map (Figure 6.17) indicates that the area of flooding at the entrance gate shown in Figure 6.8 has a low chance of having a velocity of 0 m/s. Outside the site, River Road has a medium to high risk of having a velocity of 0 m/s.
- The 0.25 m/s map (Figure 6.18) indicates that there is no surface water flooding on the site that reaches a velocity of 0.25 m/s. Outside the site, there is a small patch at low risk of reaching a velocity of 0.25 m/s on River Road.
- The 0.50 m/s map (Figure 6.19) shows that there is no surface water flooding on the site or in it's vicinity that reaches a velocity of 0.50 m/s.

In the **with climate change** scenario:

- The 0 m/s map (Figure 6.20) indicates that the extent of flooding within the site shown in Figure 6.10 has a low chance of having a velocity of 0 m/s. Outside the site, River Road has a medium to high risk of having a velocity of 0 m/s.
- The 0.25 m/s map (Figure 6.21) indicates that two small spots of flooding have a low risk of reaching a velocity of 0.25 m/s. Outside the site, there is a small patch at low risk of reaching a velocity of 0.25 m/s on River Road.
- The 0.50 m/s map (Figure 6.22) shows that there is no surface water flooding on the site or in it's vicinity that reaches a velocity of 0.50 m/s.

Therefore, the maximum velocity of any surface water flooding on the site is 0.25 m/s and there is a **low risk** of this velocity being reached indicating that any flooding is due to ponding in low spots rather than overland flow.

As noted in Section 6.7.1, as part of the proposed scheme, the localised low spots within the existing yard noted above will be removed and so the current ponding will no longer occur.



Figure 6.17 Environment Agency's Risk of Flooding from Surface Water No Climate Change (Velocity - 0 m/s)



Figure 6.18 Environment Agency's Risk of Flooding from Surface Water No Climate Change (Velocity - 0.25 m/s)



Figure 6.19 Environment Agency's Risk of Flooding from Surface Water No Climate Change (Velocity - 0.50 m/s)



Figure 6.20 Environment Agency's Risk of Flooding from Surface Water with Climate Change (Velocity - 0 m/s)



Figure 6.21 Environment Agency's Risk of Flooding from Surface Water with Climate Change (Velocity - 0.25 m/s)



Figure 6.22 Environment Agency's Risk of Flooding from Surface Water with Climate Change (Velocity - 0.50 m/s)

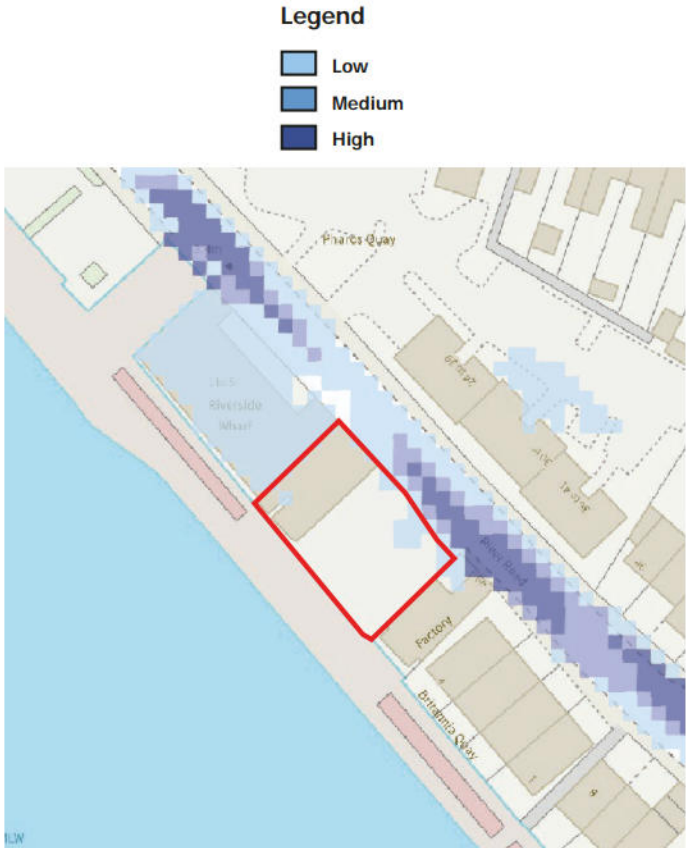


Figure 6.23 Environment Agency's Risk of Flooding from Surface Water No Climate Change (Hazard Rating - 0.00)



Figure 6.24 Environment Agency's Risk of Flooding from Surface Water No Climate Change (Hazard Rating - 0.25)



Figure 6.25 Environment Agency's Risk of Flooding from Surface Water No Climate Change (Hazard Rating - 0.50)



Figure 6.26 Environment Agency's Risk of Flooding from Surface Water No Climate Change (Hazard Rating - 0.75)

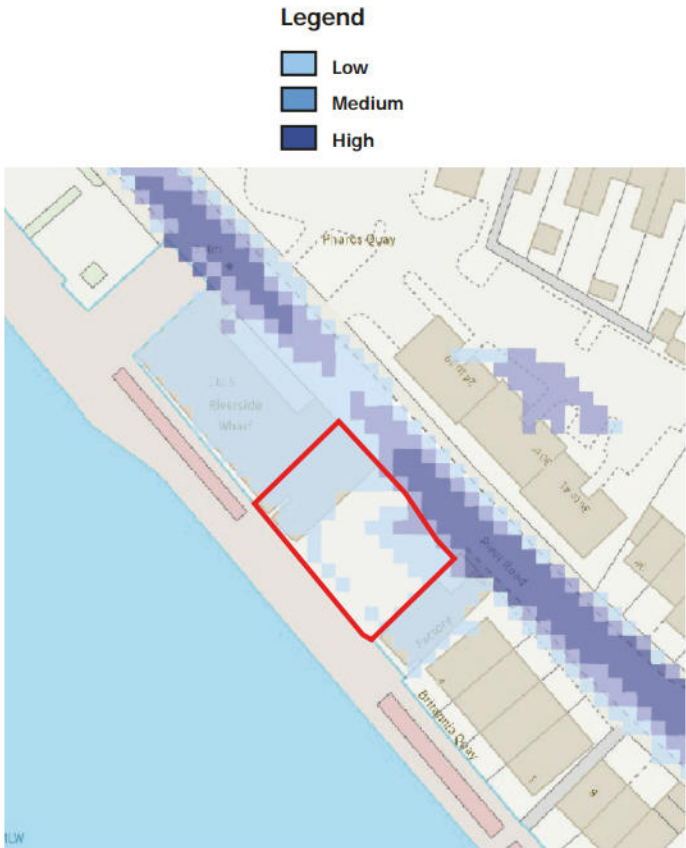


Figure 6.27 Environment Agency's Risk of Flooding from Surface Water with Climate Change (Hazard Rating - 0.00)



Figure 6.28 Environment Agency's Risk of Flooding from Surface Water with Climate Change (Hazard Rating - 0.25)



Figure 6.29 Environment Agency's Risk of Flooding from Surface Water with Climate Change (Hazard Rating - 0.50)



Figure 6.30 Environment Agency's Risk of Flooding from Surface Water with Climate Change (Hazard Rating - 0.75)

6.7.3 Surface water hazard

The depth and velocity values can be used to determine a Flood Hazard Rating using the formula:

$HR = ((v+0.5)*D) + DF$

where v = velocity (m/s), D = depth (m) and DF = debris factor

The

In the **no climate change** scenario:

- The 0.00 Hazard rating map (Figure 6.23) indicates that the majority of the site has a Hazard Rating of 0. A small area at the existing entrance gate is at **low risk** of exceeding this Hazard Rating. The section of River Road in front of the site has a medium to high risk of exceeding this Hazard Rating.
- The 0.25 Hazard Rating map (Figure 6.24) indicates that the majority of the site has a Hazard Rating of 0. A small area at the existing entrance gate is at **low risk** of exceeding this Hazard Rating. The section of River Road in front of the site has a medium to high risk of exceeding this Hazard Rating.
- The 0.50 Hazard Rating map (Figure 6.25) indicates that the majority of the site has a Hazard Rating of 0. A small area at the existing entrance gate is at **low risk** of exceeding this Hazard Rating. The section of River Road in front of the site has a medium to high risk of exceeding this Hazard Rating.
- The 0.75 Hazard Rating map (Figure 6.26) shows that no part of the site or the section of River Road in front of it is at risk of reaching this Hazard Rating.

In the **with climate change** scenario:

- The 0.00 Hazard Rating map (Figure 6.27) indicates that the area of flooding at the entrance gate shown in Figure 6.9 has a low chance of having a velocity of 0 m/s. Outside the site, River Road has a medium to high risk of having a velocity of 0 m/s.
- The 0.25 Hazard Rating map (Figure 6.28) indicates that there is no surface water flooding on the site that reaches a velocity of 0.25 m/s. Outside the site, there is a small patch at low risk of reaching a velocity of 0.25 m/s on River Road.
- The 0.50 Hazard Rating map (Figure 6.29) shows that there is no surface water flooding on the site or in it's vicinity that reaches a velocity of 0.50 m/s.
- The 0.75 Hazard Rating map (Figure 6.30) shows that there is no surface water flooding on the site or in it's vicinity that reaches a velocity of 0.50 m/s.

The Environment Agency's Flood risk summary also assesses the site to be at low risk of flooding from surface water (refer to Appendix 3).

Therefore, based on the above information the site is considered to be at **low** risk of flooding from surface water.

Velocity (m/s)	Depth (m)										
		0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50
	0.00	0.13	0.25	0.38	0.50	0.63	0.75	0.88	1.00	1.13	1.25
	0.50	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50
	1.00	0.38	0.75	1.13	1.50	1.88	2.25	2.63	3.00	3.38	3.75
	1.50	0.50	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50	5.00
	2.00	0.63	1.25	1.88	2.50	3.13	3.75	4.38	5.00	5.63	6.25
	2.50	0.75	1.50	2.25	3.00	3.75	4.50	5.25	6.00	6.75	7.50
	3.00	0.88	1.75	2.63	3.50	4.38	5.25	6.13	7.00	7.88	8.75
	3.50	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00
	4.00	1.13	2.25	3.38	4.50	5.63	6.75	7.88	9.00	10.13	11.25
	4.50	1.25	2.50	3.75	5.00	6.25	7.50	8.75	10.00	11.25	12.50
	5.00	1.38	2.75	4.13	5.50	6.88	8.25	9.63	11.00	12.38	13.75

Flood Hazard Rating (HR)	Colour Code	Hazard to People Classification
< 0.75		Very low hazard - Caution
0.75 to 1.25		Danger for some - includes children, the elderly and the infirm
1.25 to 2.00		Danger for most - includes the general public
> 2.00		Danger for all - includes the emergency services

Figure 6.31 FD2321/TR2 "Flood Risk to People" Extract

7 Mitigation Measures and Development Safe for its lifetime

7.1 Finished Floor Level

All habitable space has a finished floor level above **5.18m**. This is 600 mm above the average ground level of the site = +3.40m AOD. It is 0.680m above the highest predicted flood level of 4.5m.

The design flood level is 4.50m AOD. The finished floor level is at least 600mm above this level.

In addition, to account for any potential uncertainty whether the 2012 Arun model has up to date climate change factors, even if the absolute worst case of all values were utilised (4.71m AOD), the FFL would still be 300mm above the worst case flood level in the available Product 6 data. EA standing advice allows 300mm in the case of certainty about the flood level rather than 600mm.

7.2 Flood Resistance and resilience

Because the FFL of the habitable part of the building is set to the level above, it is not necessary to achieve criteria set out in the EA standing advice and Arun SFRA guidance. However, given that the proposed use of upper ground floor will primarily be associated with the lobby, bedrooms, living room, dining room, and kitchen, finishes will be an impervious material, and sockets will be set at least 600mm above FFL, the much of the building construction would be flood resilient.

7.3 Flood Plain storage

The Arun SFRA requires that any compensatory flood storage should be provided, and would normally be on a level for level, volume for volume basis on land that does not currently flood but is adjacent to the floodplain (for it to fill and drain by gravity). It should be in the vicinity of the site and within the red line of the planning application boundary (unless the site is strategically allocated).

7.4 Safe Access and egress

The FFL of the building would be minimum 600mm above the predicted the worst case level of the 1 in 100 year plus climate change. In the event of a flood, occupiers could remain safely inside the building.

The occupiers could safely remain in the buildings during any flood in the surrounding area without endangering themselves.

In the event that occupiers do wish to leave the site during flood events, the EA and Defra published FD2321/TR2 "Flood Risks to People" in March 2006. Guidance Note 2. Figure 6.12 provides details on combinations of flood depth and velocities that cause danger to people. This table shows that people can become endangered in shallow but fast moving water through to still but deep water.

According to the EA Surface Water Flood Maps there is no flooding to the building and only very shallow flooding along the kerbline of River Road which also has only a low risk of occurring. Therefore, residents can safely remain within their property or take one of two routes to leave the area:

- To the north west along River Road and onward to Terminus Road
- To the south east along River Road, on to Purbeck Place and then Terminus Road

The preferred route would be to the north west as there is a slightly greater extent of flooding to the south east albeit still less than 200mm deep.

These are shown in Figure 7.1 for reference.

7.5 Flood warning and evacuation

The occupier of the Building, would sign up for the EA's Flood alerts service. Occupants of the building should be directed away from the building on receipt of the warning being told to route via the routes shown in Figure 7.1.



Figure 7.1 Potential Site Egresses During Flood Events

8 Conclusions

- In accordance with the National Planning Policy Framework, we would categorise the site as lying entirely within Flood Zone 3a but benefits from the flood defences along the banks of the River Arun.
- The proposed residential use is classified as 'more vulnerable' in accordance with the NPPF.
- In accordance with the NPPF, "more vulnerable" classifications are suitable in Flood Zones 1 and 2 but require the Exception Test to be undertaken for sites within Flood Zone 3a.
- For the reasons outlined in Section 6.3, it is believed that the proposed development meets the requirements of the Exception Test and the proposed land use is acceptable on this site.
- The site has been assessed as being at **low risk** of flooding from rivers or tidal sources.
- The site has been assessed as being at **very low risk** from surcharging sewers.
- The site has been assessed as being at **low risk** from artificial sources.
- The site has been assessed as being at **low risk** from groundwater sources.
- The site has been assessed as being at **low risk** from surface water flooding sources.
- Therefore, the proposed development has an acceptable flood risk within the terms and requirements of the National Planning Policy Framework.
- The proposed development also has an acceptable flood risk within the terms of the requirements of the Arun District Council SFRA.
- The developer must ensure that all warning and evacuation plans are in place.
- The comments stated above are based on information received from other consultees. The flood risk classification of this site has been based on the above observations, and the recommendations stated. This report is intended for the use of the developer of the site in support of their planning application for the site only.