

Map Dataset	Designation	Comment
Groundwater Vulnerability Zone	Low	This category classifies the underlying groundwater in terms of vulnerability from activities carried out on the surface. Figure 2.5 identifies that the site is within 'Low' Groundwater Vulnerability Zone which consists of areas that provide the greatest protection to groundwater from pollution. They are likely to be characterised by low leaching soils and/or the presence of low permeability superficial deposits.
Aquifer Maps: Bedrock Deposits Designation	Unproductive	This category identifies the type of aquifer present in solid permeable formations. According to available records depicted in Figure 2.6 the proposed site does not fall within any aquifer designation zone.
Aquifer Maps: Superficial Deposits Designation	Secondary A	This category identifies the type of aquifer present in the permeable unconsolidated (loose) deposits. Figure 2.7 indicates that the proposed site falls within 'Secondary A' aquifer designation zone which consists of permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.
Ground Water Source Protection Zone	Zone 1- Subsurface Activity	This category identifies zones at risk from contamination from any activities that might cause pollution in the area. The closer the activity the greater the risk. According to available records depicted in Figure 2.8 the proposed site falls within 'Zone 1- Subsurface Activity' Ground Water Source Protection Zone which extends Zone 1 where the aquifer is confined and may be impacted by deep drilling activities.

Table 2.2 – Summary of Hydrogeological conditions

2.5 Existing surface water management

The drainage survey enclosed in Appendix C delineates all observed surface water and foul networks within the site. The surface water runoff from the existing site discharges off site via 4 different connections into the public surface water sewer located in New Lane. Similarly, the existing foul water network is shown to discharge into the public foul water sewer in New Lane.

The existing surface water runoff is collected using an assortment of various devices including road gullies, rainwater downpipes and channels. Moreover, two surface water attenuation tanks can be observed within the existing drainage networks. One of the existing surface water networks utilises a pump chamber to convey the surface water runoff from the site. Moreover, it is of note that no existing Sustainable Drainage Systems (SUDS) have been identified within the site, indicating the site discharges freely to the public sewer network.

3 PROPOSED DEVELOPMENT

The proposed development proposes to redevelop the site and use it as a storage and distribution facility, where parcels are delivered via small vans to customers in the local area. The proposal includes a centrally located warehouse building and a decked storage area which will house the fleet of commercial vehicles overnight while drivers are not on deliveries.

The proposed development plans are enclosed in Appendix D.

4 PROBABILITY OF FLOODING

The NPPF identifies six potential sources of flooding:-

- Flooding from rivers (fluvial flooding);
- Flooding from the sea (tidal flooding);
- Flooding from land;
- Flooding from sewers;
- Flooding from groundwater; and
- Flooding from reservoirs, canals, and other artificial sources.

These are considered below.

4.1 Flooding from rivers (fluvial flooding) & sea (tidal flooding)

The assessment of flood risk in this report is based on the definitions in Table 1 of the Flood Risk and Coastal Change, Planning Practice Guidance, which recognises the following Flood Zones:

- Flood Zone 1 - little or no risk, with annual probability of flooding from rivers and the sea of less than 0.1% (1 in 1000-year)
- Flood Zone 2 - low to medium risk, with annual probability of flooding between 0.1% and 1.0% from rivers and between 0.1% and 0.5% from the sea
- Flood Zone 3a - high risk of flooding with an annual probability of flooding of 1.0% or greater from rivers, and 0.5% or greater from the sea.
- Flood Zone 3b – the ‘Functional Floodplain’ with an annual probability of flooding of 5% or greater.

An extract from the Environment Agency’s online flood map published on their website is shown in Figure 4.1 below, with Flood Zone 3a & 3b denoted by dark blue hatch and Flood Zone 2 a light blue. The site is located within a Flood Zone 1 ‘Low Probability’ area and therefore lies outside an area at risk of fluvial/tidal flooding.

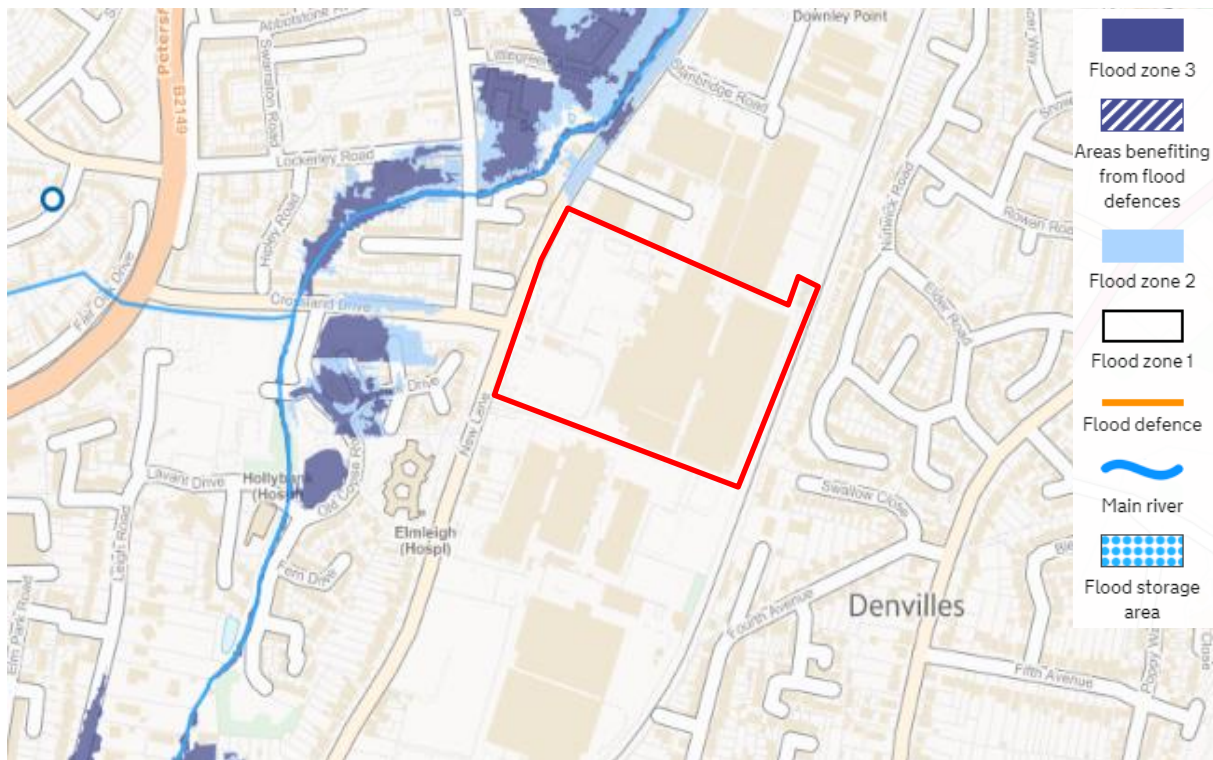


Figure 4.1 – Environment Agency Online Flood Map Extract (Approximate site location outlined red)

Figure 4.1 above identifies the site being within a Flood Zone 1 area.

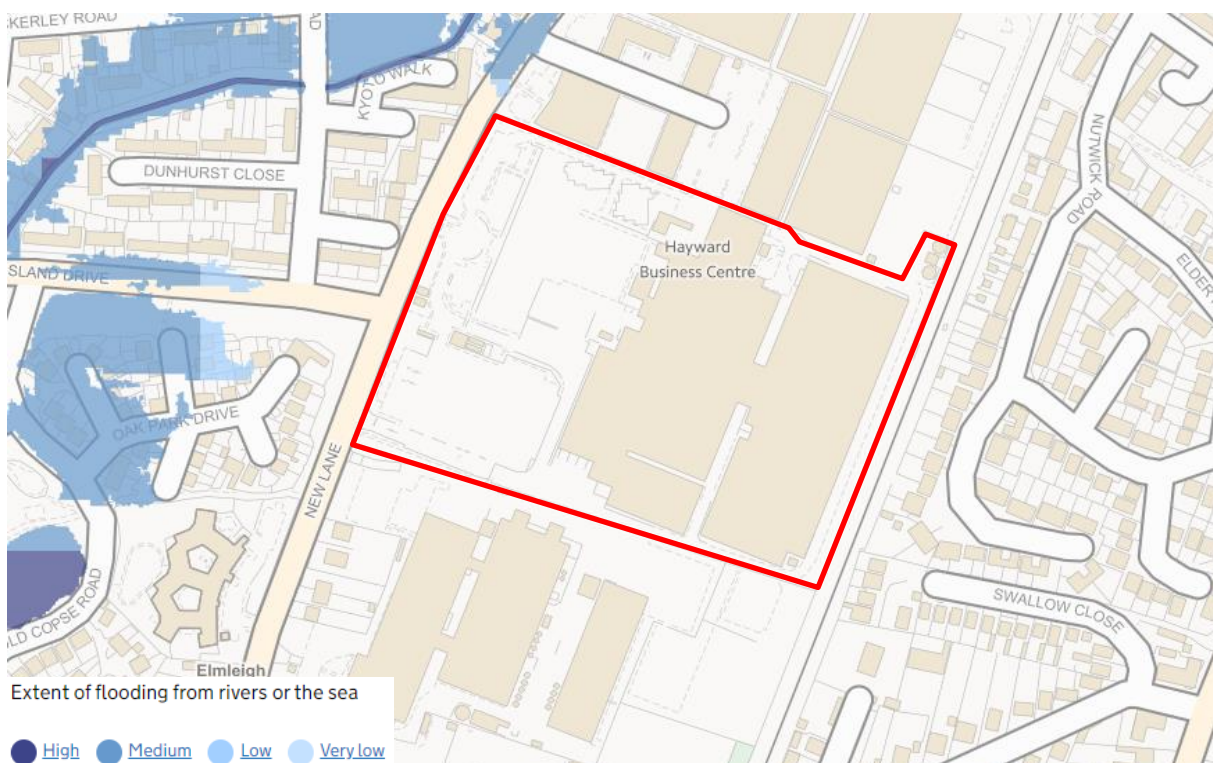


Figure 4.2 – EA Flood Risk from Rivers and Sea Water Map Extract (Approximate Site Extents Edged Red)

Figure 4.2 above identifies the site as being within an area at no risk of flooding from rivers and seas.

4.2 Flooding from land (surface water)

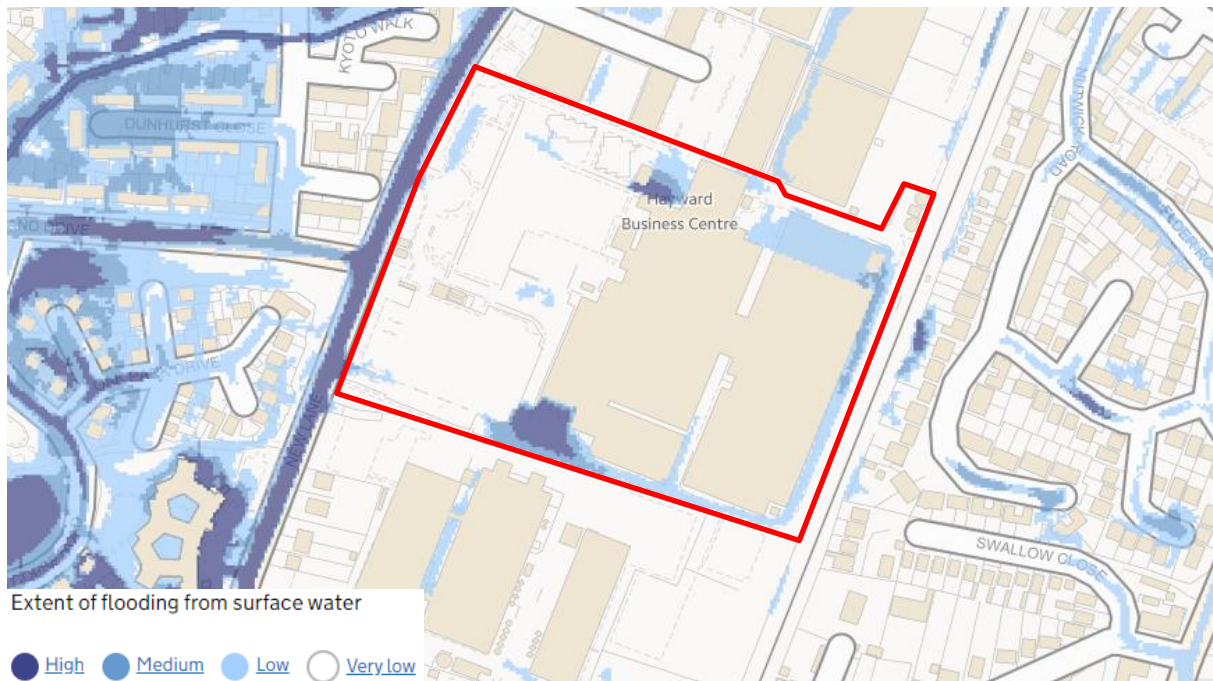


Figure 4.3 – EA Flood Risk from Surface Water Map Extract (Approximate Site Extents Edged Red)

Figure 4.3 above shows that the risk of flooding from surface water vary within the site. The site has a high-medium risk of flooding in the existing hard standing areas in the north and the south of the site, medium risk in the east just outside the existing building and low risk generally around the existing building and over some areas in the west.

4.3 Flooding from groundwater

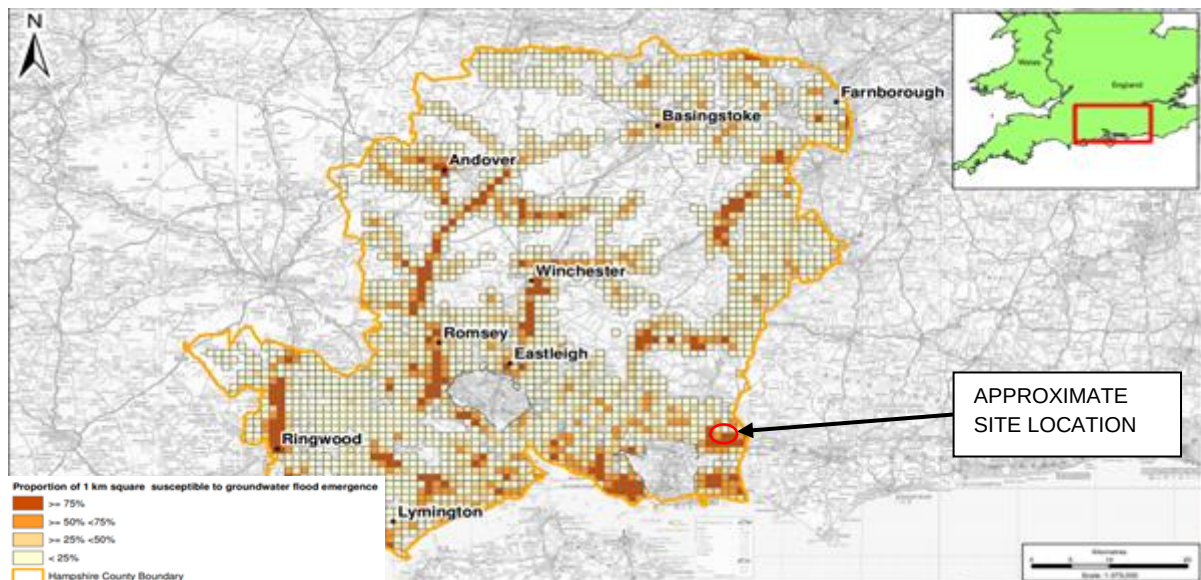


Figure 4.4 –Areas Susceptible to Ground Water Flooding Mapping adapted from Hampshire Ground Water Management Plan. (Approximate Site shown in Red)

Due to a history of ground water flooding in Hampshire, Ground Water Management Plan (GWMP) was created in collaboration with other stakeholders in the county to identify areas at risk of ground water flooding and provide plans to mitigate the risks. The Areas Susceptible to Ground Water Flooding mapping provided in the Ground Water Management Plan GWMP (attached as Figure 4.4) indicates

that there is a possibility of groundwater flooding within the vicinity of the proposed site. It is recommended that a site-specific ground monitoring test should be undertaken to quantify any potential risks.

4.4 Flooding from reservoirs, canals, and other artificial sources

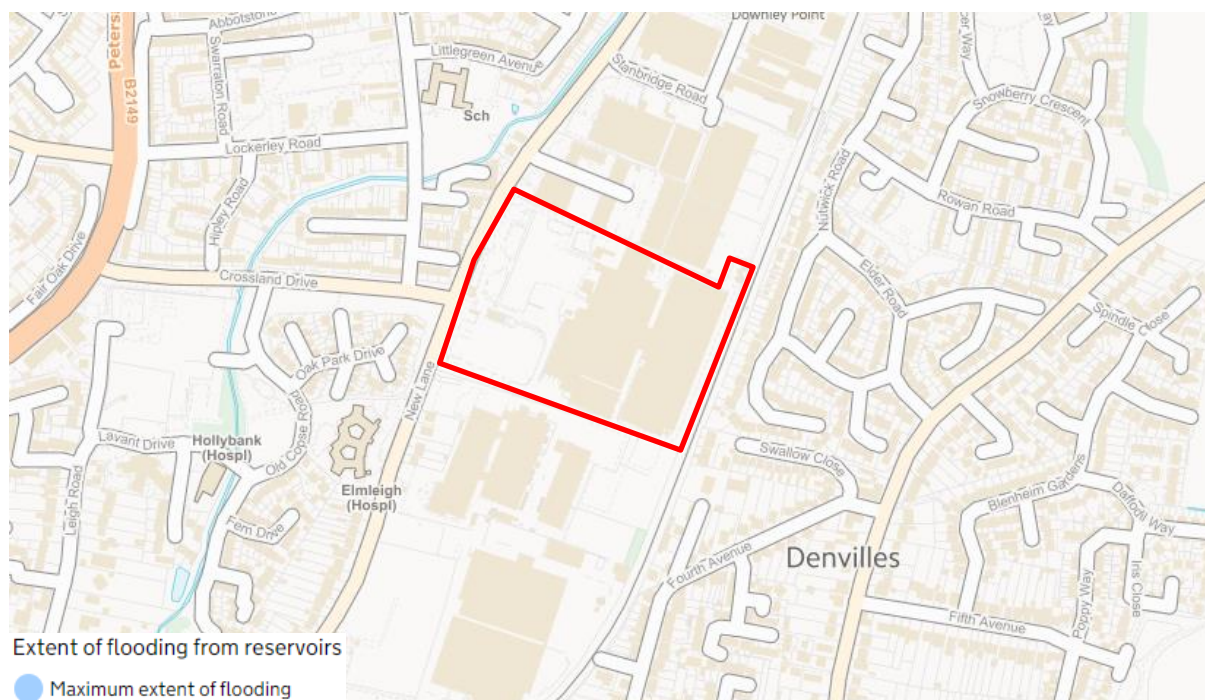


Figure 4.5 – EA Flood Risk from Reservoirs Map Extract (Approximate Site Extents Edged Red)

Figure 4.5 above identifies the site and the surrounding area as not being at risk of flooding from reservoirs.

4.5 Impact of Climate Change on Rainfall intensity

The EA recommends an allowance of 20- 40% to be made to account for the increase in rainfall intensity, as shown in Table 4.1 below. Hence, an allowance of 20% will be used with a 40% sensitivity test.

Applies across all of England	Total potential change anticipated for the '2020s' (2015 to 2039)	Total potential change anticipated for the '2050s' (2040 to 2069)	Total potential change anticipated for the '2080s' (2070 to 2115)
Upper End	10%	20%	40%
Central	5%	10%	20%

Table 4-1: Peak rainfall intensity allowance in small and urban catchments

(Table 2 - <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>)

5 POLICY STATUS FOR PROPOSED DEVELOPMENT

5.1 Vulnerability classification

The proposed development complies with the following principles:

- The proposed development lies within Flood Zone 1;
- The proposed development is classified as 'less vulnerable' in accordance with Table 2 of the Flood Risk and Coastal Change, Planning Practice Guidance (reproduced as Table 5.1 below).

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, Fire stations, 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
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, subject to a specific warning and evacuation plan.
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 plants and sewage treatment plants (if adequate pollution control measures are in place). Sewage treatment works (if adequate measures to control pollution and manage sewage during flood events are in place).
Water-compatible Development	Flood control infrastructure. Water transmission infrastructure, pumping stations. Sewage transmission infrastructure and pumping stations. Sand and gravel workings. Docks, marinas, wharves Navigation facilities.

	MOD 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, subject to a specific warning and evacuation plan.
Notes 1 - This classification is based partly on Defra/Environment Agency research on Flood Risks to People (FD2321/TR2)21 and also on the need of some uses to keep functioning during flooding. 2 - Buildings that combine a mixture of uses should be placed into the higher of the relevant classes of flood risk sensitivity. Developments that allow uses to be distributed over the site may fall within several classes of flood risk sensitivity. 3 - The impact of a flood on the particular uses identified within this flood risk vulnerability classification will vary within each vulnerability class. Therefore, the flood risk management infrastructure and other risk mitigation measures needed to ensure the development is safe may differ between uses within a particular vulnerability classification.	

Table 5.1 – Flood Risk Vulnerability Classification

Vulnerability Classification		Essential Infrastructure	Water-compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test	✓	✓
	Zone 3a	Exception Test	✓	✗	Exception Test	✓
	Zone 3b	Exception Test	✓	✗	✗	✗
Key ✓ Development is appropriate ✗ Development should not be permitted						

Table 5.2 – Flood Risk Vulnerability and Flood Zone ‘Compatibility’

The proposed development is appropriate in accordance with Table 3 of the Flood Risk and Coastal Change, Planning Practice Guidance, reproduced in Table 5.2 above.

5.2 Sequential Test & Exception Test

The NPPF requires that all development is sequential tested to steer new development to areas at the lowest probability of flooding (Flood Zone 1). The Sequential Test would normally be completed by the Local Planning Authority (LPA) to inform the preparation of the Local Development Framework (LDF), where one exists. However, where this process has not yet been completed the onus for the provision of evidence demonstrating successful application of the Sequential Test falls to the developer, or

promoter of the site. The NPPF also requires the layout of a site to be sequentially tested to locate the most vulnerable land uses in the areas at lowest risk of flooding.

The NPPF Planning Practice Guidance acknowledges that in some circumstances it may not be possible to locate development in areas of low or appropriate (considering development vulnerability) flood risk or that there may be other valid reasons for a development to take place within the floodplain. In these circumstances, it is necessary to apply the Exception Test to clearly demonstrate that the benefits for development of a site outweigh the flood risks to the development and its occupants. Table 3 of the Flood Risk and Coastal Change, Planning Practice Guidance (reproduced in Table 5.2 above) indicates when the Exception Test is required.

The proposed development site falls entirely into Flood Zone 1, meaning the Sequential Test is deemed to be passed and the Exception Test is not required.

5.3 Local Policy

The Local Plan (Core Strategy) was adopted by the Havant Borough Council in March 2011. An extract of the flood risk management policy is included below.

Policy CS15 Flood and Coastal Erosion Risk

Development in areas at risk of flooding now and in the future as identified on the latest Environment Agency flood risk maps and Strategic Flood Risk Assessment climate change maps will only be permitted where:

- 1. It meets the sequential and exception test (where required) in relation to PPS25.*
- 2. The site is located in a low hazard area as defined in the Strategic Flood Risk Assessment.*
- 3. A site-specific flood risk assessment demonstrates that the development will be safe, including the access, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.*
- 4. The scheme incorporates flood protection, flood resilience and resistance measures appropriate to the character and biodiversity of the area and the specific requirements of the site.*
- 5. Appropriate flood warning and evacuation plans are in place.*
- 6. New site drainage systems are designed taking account of events which exceed the normal design standard.*

All development will be required to ensure that there is no net increase in surface water run off. Priority should be given to incorporating Sustainable Drainage Systems (SuDS) to manage surface water drainage, unless it is proven that SuDS are not appropriate. Where SuDS are provided arrangements must be put in place for their whole life management and maintenance.

The council will work with partners to implement the Coastal Policy Zones in the North Solent Shoreline Management Plan to ensure that development avoids areas at risk from coastal erosion and coastal flooding and that areas required to offset coastal squeeze and prevent habitat fragmentation, to allow species to adapt to climate change, are identified and protected from development.

A pre- submission version of the Havant Borough Local Plan with changes was published in September 2020 and is expected to be submitted to the Secretary of State after consultation. Extracts of all relevant drainage and flood risk management policies are included below.

Policy E19 Managing flood risk in new development

Planning permission will only be granted where:

- a. *The proposal meets the sequential and exception tests as set out in the NPPF and relevant local guidance;*
- b. *The development will be safe over its lifetime without increasing flood risk elsewhere;*
- c. *Any proposed flood protection, resilience and resistance measures address the specific requirements of the site, and are appropriate to the character and biodiversity of the area;*
- d. *Opportunities have been explored to reduce flood risk;*
- e. *Where necessary, appropriate flood warning and evacuation plans are in place; and*
- f. *Where necessary, a contribution has been made towards any identified flood alleviation scheme(s).*

Policy E20 Drainage infrastructure in new development

Planning permission will only be granted where:

- a. *Run-off rates have been reduced to below the pre-development rate, or, if this is not possible, there is no net increase in surface water run-off compared with the pre-development rate;*
- b. *Drainage systems meet the drainage needs of the development in full over the lifetime of the development and do not increase flood risk elsewhere;*
- c. *The drainage strategy incorporates SuDS, unless there is clear evidence that this would be inappropriate;*
- d. *Arrangements have been made between the applicant and the service provider for the timely delivery of sewerage network reinforcement; and*
- e. *Any existing sewerage infrastructure is taken into account in site layout, to safeguard future access for maintenance and upsizing purposes.*

5.4 Public Safety Issues

Given the relatively very low-low risk of flooding across the development area, it is not deemed appropriate to develop a flood evacuation plan. However, the building occupiers should still subscribe to the EAs free flood warning service and in the event of a flood, people must evacuate to higher ground and follow guidance from the emergency services.

5.5 Safe Access/Egress

As the proposed site lies in Flood Zone 1 and there is only very low-low risk of pluvial (surface water) flooding around the access of the site, safe access/ egress will be retained during a flood event.

5.6 Surface water management strategy

The existing finishes across the site is largely comprised of impermeable area with landscaping and vegetations around the existing site perimeter. As the proposed development will comprise of more permeable areas than the existing site, the surface water runoff from the development is expected to decrease.

The method of discharging surface water off site will be established following the SuDS hierarchy as provided in the Building Regulations (H3) and the surface water runoff will be managed with SuDS devices to reduce the peak runoff. Refer to the Drainage Strategy report prepared by Pinnacle Consulting Engineers for the surface water runoff management from the development.