



Flood Risk Assessment

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Havant, 32 New Lane

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Prepared for:

Havant Property Investment LLP

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VERSIONS

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CONTENT

1	INTRODUCTION.....	3
2	EXISTING SITE CONDITIONS.....	4
2.1	Site description.....	4
2.2	Topography.....	4
2.3	Geological ground conditions.....	4
2.4	Hydrogeology.....	8
2.5	Existing surface water management.....	10
3	PROPOSED DEVELOPMENT.....	11
4	PROBABILITY OF FLOODING.....	12
4.1	Flooding from rivers (fluvial flooding) & sea (tidal flooding).....	12
4.2	Flooding from land (surface water).....	14
4.3	Flooding from groundwater.....	14
4.4	Flooding from reservoirs, canals, and other artificial sources.....	15
4.5	Impact of Climate Change on Rainfall intensity.....	15
5	POLICY STATUS FOR PROPOSED DEVELOPMENT.....	16
5.1	Vulnerability classification.....	16
5.2	Sequential Test & Exception Test.....	17
5.3	Local Policy.....	18
5.4	Public Safety Issues.....	19
5.5	Safe Access/Egress.....	19
5.6	Surface water management strategy.....	19
5.7	Flood Risk Elsewhere.....	20
6	CONCLUSION.....	21
	APPENDIX A – SITE LOCATION PLAN	
	APPENDIX B – TOPOGRAPHICAL SURVEY	
	APPENDIX C – EXISTING DRAINAGE LAYOUT	
	APPENDIX D – PROPOSED DEVELOPMENT PLAN	

1 INTRODUCTION

Pinnacle Consulting Engineers Ltd have been commissioned by Havant Property Investment LLP to carry out a Flood Risk Assessment report (FRA) for a proposed development of a site at 32 New Lane, PO9 2NG. A site location plan is enclosed in Appendix A.

With reference to the indicative flood maps published by the Environment Agency, the site appears to lie in Flood Zone 1. This FRA report has been prepared in accordance with the requirements contained within National Planning Policy Framework (NPPF, Feb 2019, updated June 2019) and the associated Planning Practice Guidance. The guidance refers to the Environment Agency's "standing advice" on flood risk. Based on requirements set by the Environment Agency, a Flood Risk assessment is needed to support the planning application.

This report has been prepared in accordance with (i) National Planning Policy Framework (NPPF), (Department for Communities and Local Government, Feb 2019, updated June 2019) and the accompanying (ii) Planning Practice Guidance (Ministry of Housing, Communities and Local Government, March 2014); and (iii) Partnership for Urban South Hampshire (PUSH) Strategic Flood Risk Assessment (SFRA), 2016 (iv) Other statutory laws and local bylaws and rules.

It is stated in Paragraph 30 of the Flood Risk and Coastal Change chapter within the Planning Practice Guidance that "a site-specific flood risk assessment is carried out by (or on behalf of) a developer to assess the flood risk to and from a development site. Where necessary the assessment should accompany a planning application submitted to the local planning authority. The assessment should demonstrate to the decision-maker how flood risk will be managed now and over the development's lifetime, taking climate change into account, and with regard to the vulnerability of its users".

This report has been prepared to address the requirements of the NPPF and has derived the following data/information from various sources including:

- Information published or explicitly provided by the Environment Agency;
- Information published by the Local Planning Authority, including the SFRA;
- A site specific topographical survey;
- Enquiries made to relevant authorities to understand possible risks of flooding in the area; and
- Specific design works carried out for this report.

2 EXISTING SITE CONDITIONS

2.1 Site description

The proposed development is located at 32 New Lane, Havant, Hampshire, PO9 2NG (National Grid Reference SU 72466 07236). The site is a brownfield site and lies within an Industrial Estate on the east side of New Lane with a total developable area of approximately 6.78ha.

The site is bounded to the north by Havant industrial area, to the east by railway line, to the south by industrial and commercial premises and to the west by New Lane road. A watercourse is located approximately 60m from the site.

Details of the existing development site are enclosed in Appendix A and illustrated in Figure 2.1 below.



Figure 2.1 – Aerial View of the existing development site (approximate site boundary edged red)

2.2 Topography

The development site falls generally from north east to south west direction, with ground levels across the site varying between approximately 16.20m and 13.03m Above Ordnance Datum (AOD).

Details of existing development site levels are enclosed in Appendix B.

2.3 Geological ground conditions

Geological conditions at the site are detailed below and are based on geological maps produced by British Geological Survey (BGS). The focus of an FRA study on geology is on the potential movement of water through Made Ground, Drift Geology and Solid Geology.

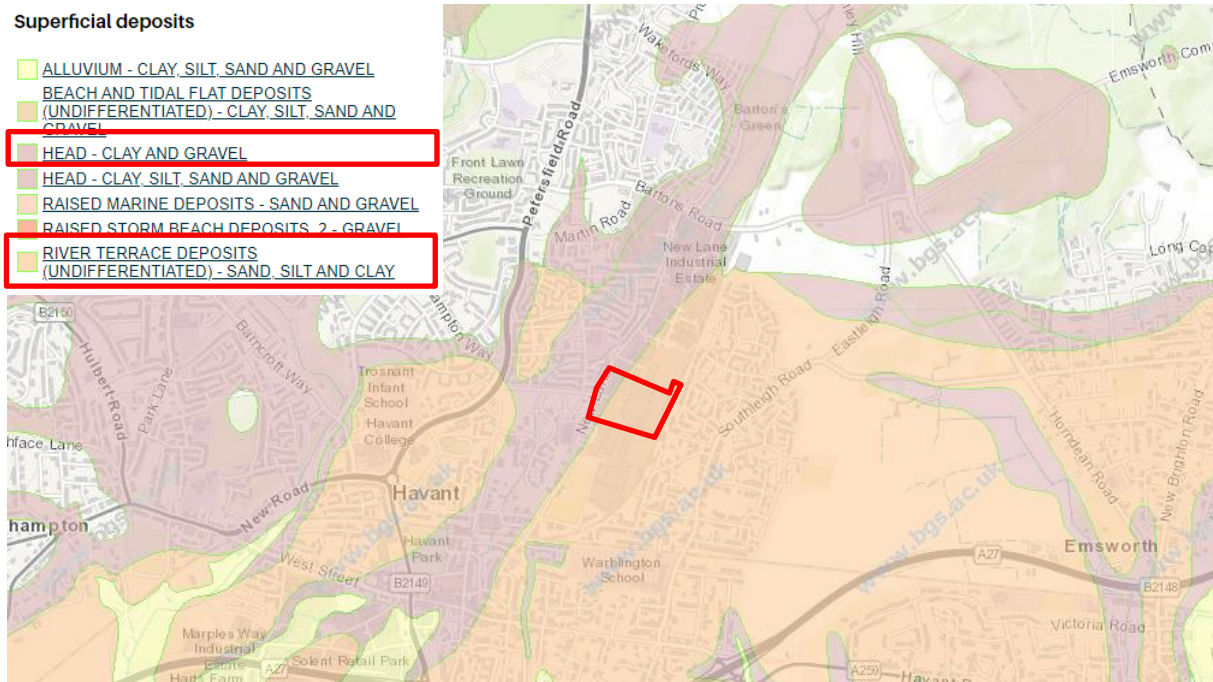


Figure 2.2: British Geological Survey Superficial Geology Extract (approximate site location marked red)

The proposed site is underlain by a superficial deposit of Head (clay and gravel) and River terrace deposits (undifferentiated- sand, silt and clay).

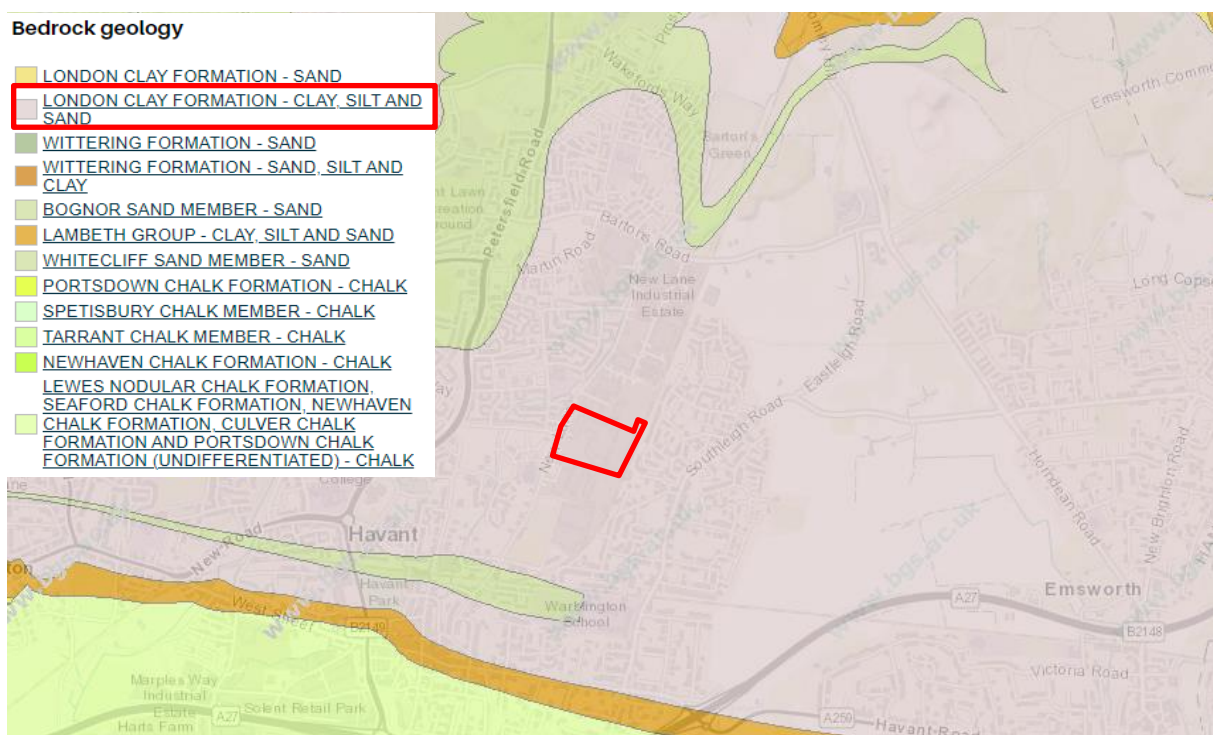


Figure 2.3: British Geological Survey Bedrock Geology Extract (approximate site location edged red)

The proposed site lies within the bedrock zone identified as London Clay Formation – Clay, Silt, and Sand.

These strata are outlined in Table 2.1 below.

Formation	Description
Artificial Ground (Made Ground)	No artificial deposits have been delineated within the site on the BGS site maps. However, given the site is brownfield, the likelihood is that Made Ground will be present.
Superficial Deposits (Drift Deposits)	River Terrace Deposits (Undifferentiated- Sand, Silt and Clay) Superficial Deposits formed up to 3 million years ago in the Quaternary Period. Local environment previously dominated by rivers. These sedimentary deposits are fluvial in origin. They are detrital, ranging from coarse- to fine-grained and form beds and lenses of deposits reflecting the channels, floodplains and levees of a river or estuary (if in a coastal setting). Head- Clay and Gravel. Superficial Deposits formed up to 3 million years ago in the Quaternary Period. Local environment previously dominated by subaerial slopes. These sedimentary deposits are subaerial in origin. They are detrital, comprising coarse- to fine- grained materials, forming down-slope layers and fans of accumulated material.
Bedrock	London Clay formation- Clay, Silt and Sand. Sedimentary Bedrock formed approximately 48 to 56 million years ago in the Palaeogene Period. Local environment previously dominated by deep seas. These sedimentary rocks are marine in origin. They are detrital and comprise coarse to fine grained slurries of debris from the continental shelf flowing into a deep-sea environment, forming distinctively graded beds.

Table 2.1 – Geological Ground Conditions

The focus of an FRA study on soils is to determine drainage characteristics specific for the local composition, in order to produce a definitive solution regarding the use of shallow infiltration SuDS devices. The available soil data is provided in figure 2.4 below with accompanying text.

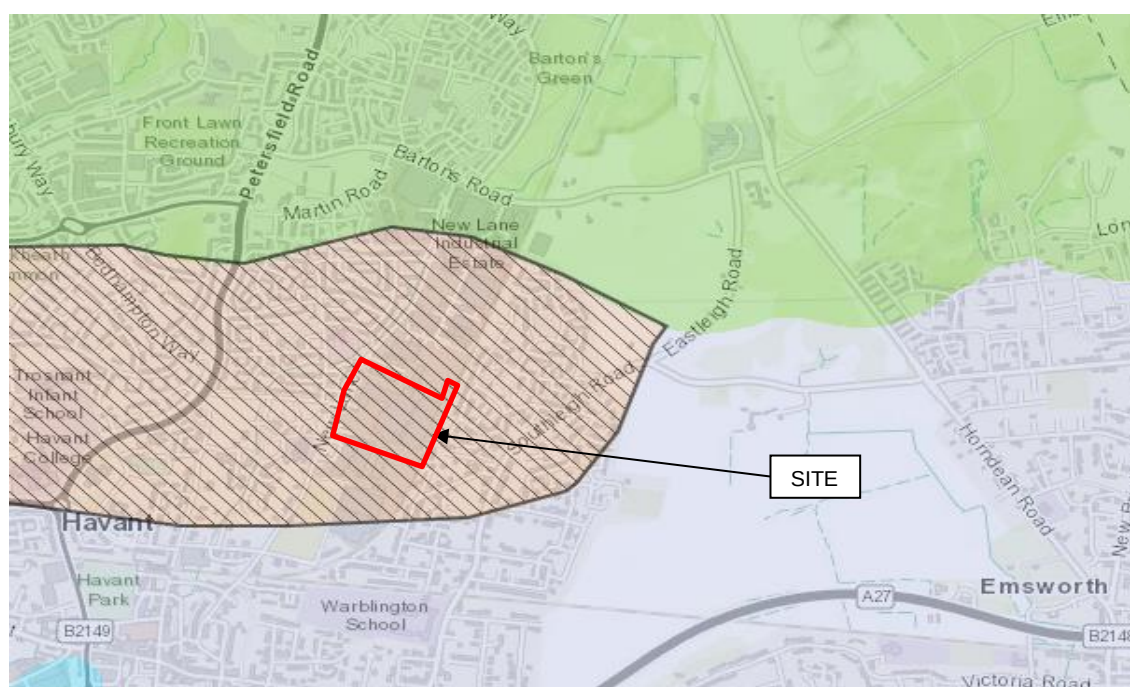


Figure 2.4 – Soilscape Map of the site (approximate site location)

ID	Description
1	Saltmarsh soils
2	Shallow very acid peaty soils over rock
3	Shallow lime-rich soils over chalk or limestone
4	Sand dune soils
5	Freely draining lime-rich loamy soils
6	Freely draining slightly acid loamy soils
7	Freely draining slightly acid but base-rich soils
8	Slightly acid loamy and clayey soils with impeded drainage
9	Lime-rich loamy and clayey soils with impeded drainage
10	Freely draining slightly acid sandy soils
11	Freely draining sandy Breckland soils
12	Freely draining floodplain soils
13	Freely draining acid loamy soils over rock
14	Freely draining very acid sandy and loamy soils
15	Naturally wet very acid sandy and loamy soils
16	Very acid loamy upland soils with a wet peaty surface
17	Slowly permeable seasonally wet acid loamy and clayey soils
18	Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils
19	Slowly permeable wet very acid upland soils with a peaty surface
20	Loamy and clayey floodplain soils with naturally high groundwater
21	Loamy and clayey soils of coastal flats with naturally high groundwater
22	Loamy soils with naturally high groundwater
23	Loamy and sandy soils with naturally high groundwater and a peaty surface
24	Restored soils mostly from quarry and opencast spoil
25	Blanket bog peat soils
26	Raised bog peat soils
27	Fen peat soils

Soilscape description: Freely draining slightly acid loamy soils
Texture: Loamy
Coverage: England: 15.5% Wales: 24.4% England & Wales: 16.7%
Drainage: Freely draining
Fertility: Low
Habitats: Neutral and acid pastures and deciduous woodlands; acid communities such as bracken and gorse in the uplands
Landcover: Arable and grassland
Carbon: Low
Drains to: Local groundwater and rivers
Water protection: Groundwater contamination with nitrate; siltation and nutrient enrichment of streams from soil erosion on certain of these soils
General cropping: Suitable for range of spring and autumn sown crops; under grass the soils have a long grazing season. Free drainage reduces the risk of soil damage from grazing animals or farm machinery. Shortage of soil moisture most likely limiting factor on yields, particularly where stony or shallow

2.4 Hydrogeology

The hydrogeological features of the site are depicted in Figures 2.5 to 2.8. A summary and further information is provided in Table 2.2.

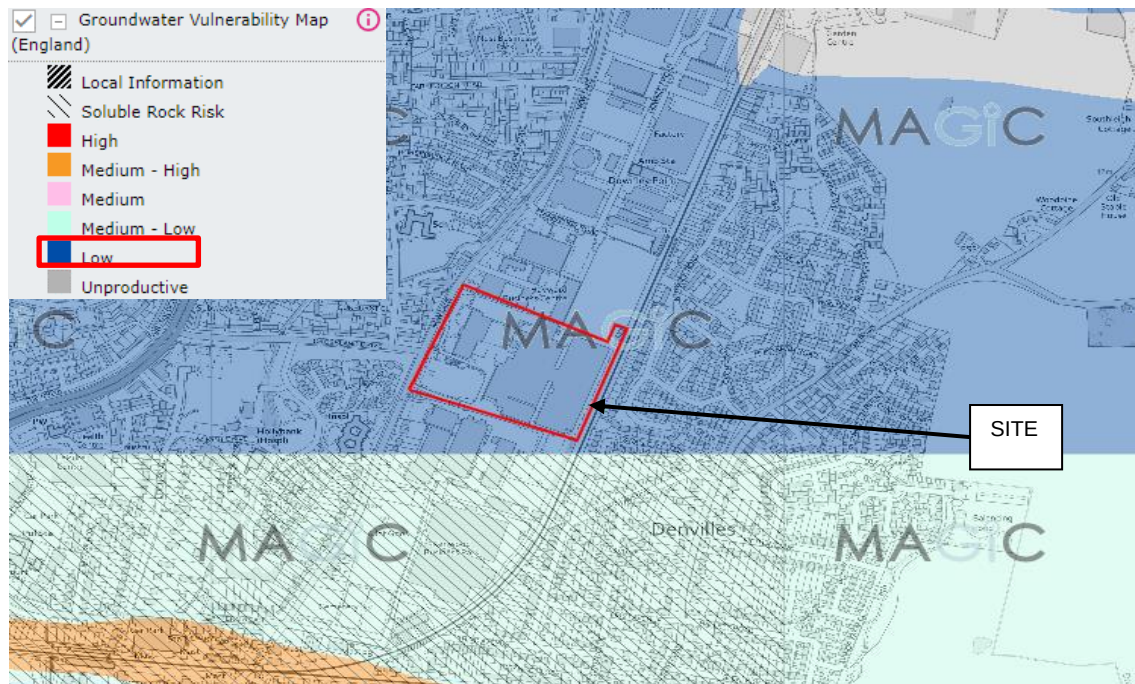


Figure 2.5 – Ground Water Vulnerability Zones (approximate site location marked red).

This map indicates that the site is within 'Low' groundwater vulnerability zone.

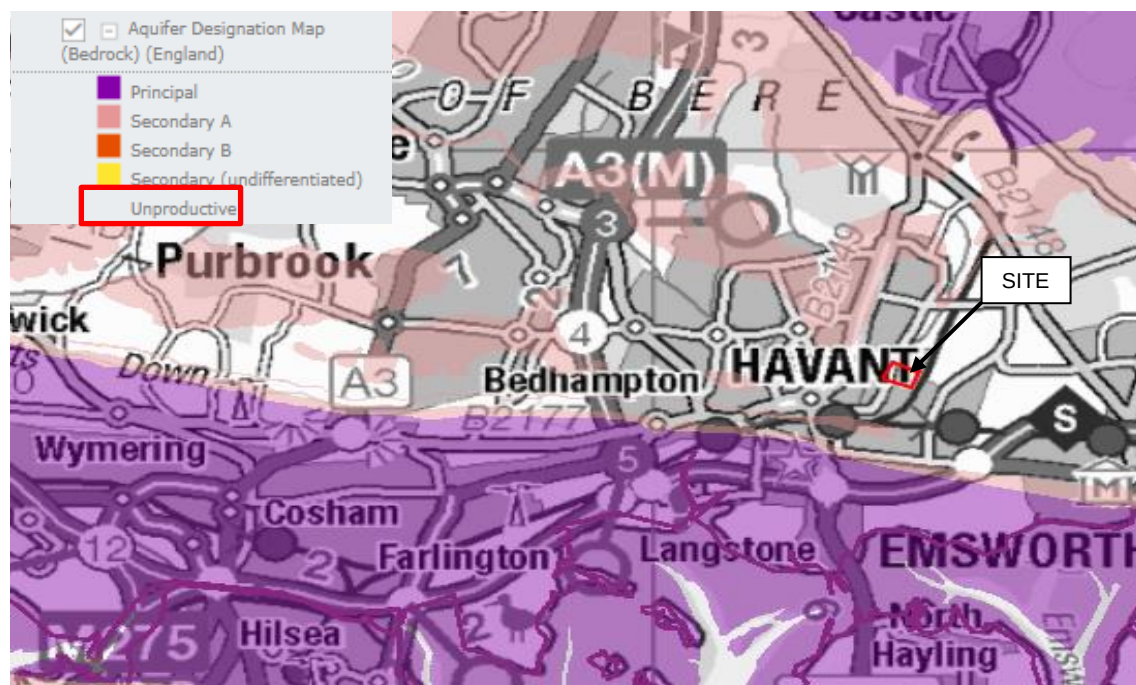


Figure 2.6 – Aquifer Designation Map (Bedrock) (approximate site location marked red)

This map indicates that the site is not within any defined Bedrock Aquifer Designation Zone.

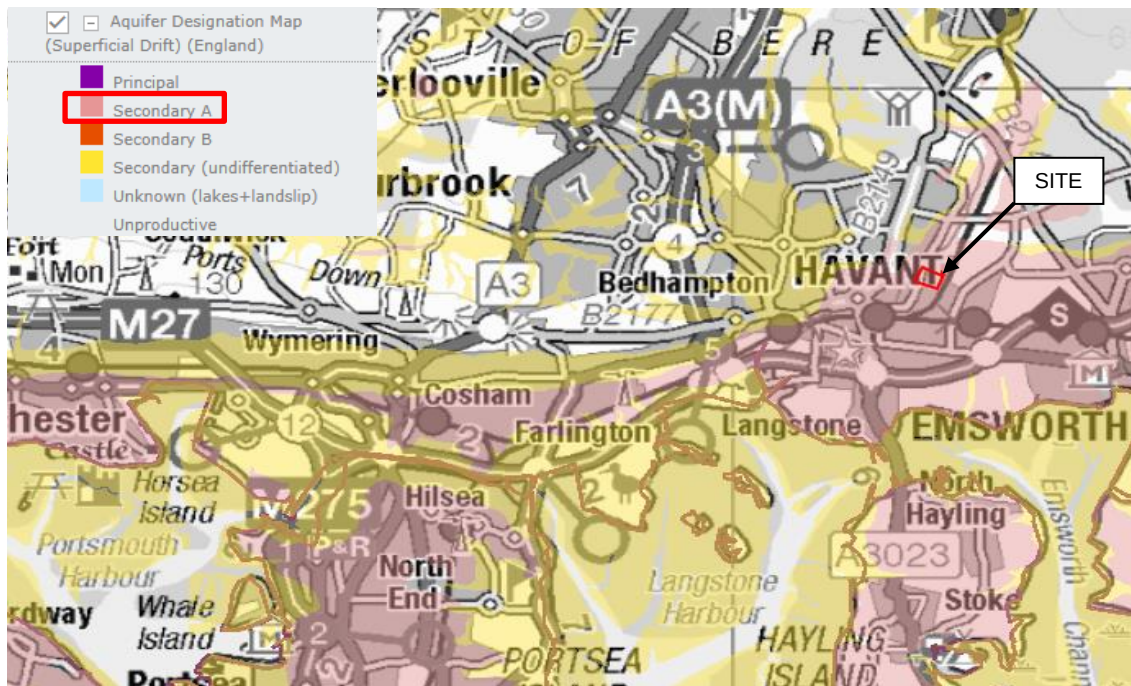


Figure 2.7 – Aquifer Designation Map (Superficial drift) (approximate site location marked red)

This map indicates that the site is within 'Secondary A' Superficial Aquifer Designation zone.

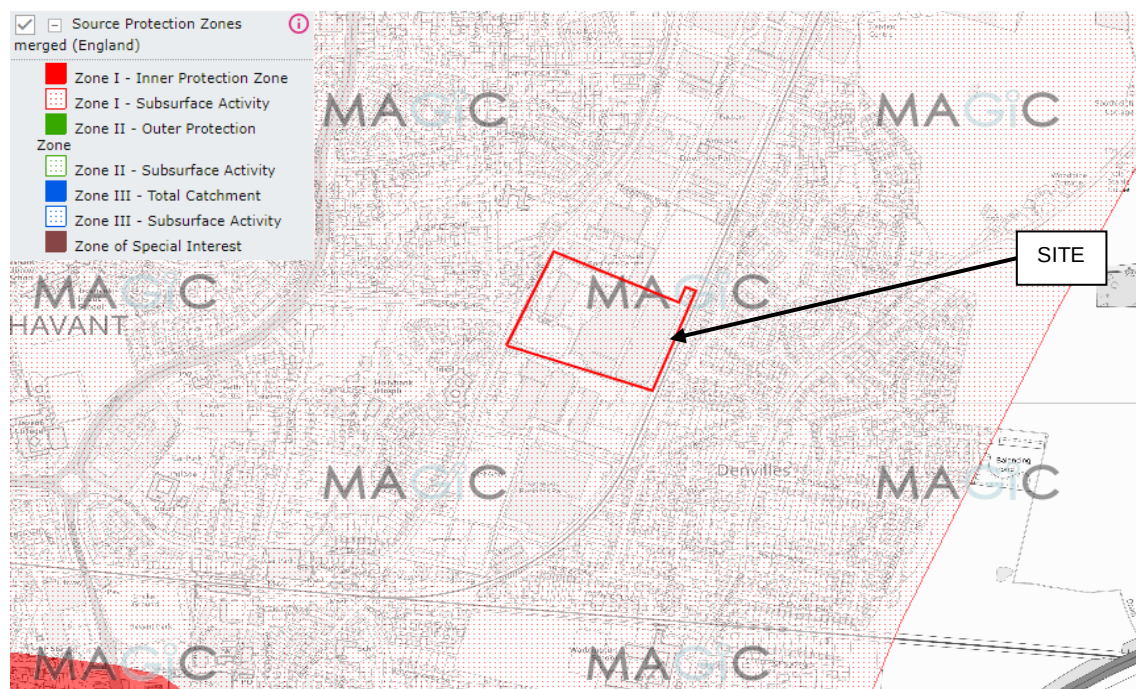


Figure 2.8 – Ground Water Source Protection Zone (approximate site location marked red)

This map indicates that the site is within 'Zone 1- Subsurface Activity' Ground Water Source Protection Zone. Therefore, discharging the surface water runoff into the ground via infiltration from the proposed development is not recommended as there is a risk of groundwater contamination.