

The foul flows generated from the proposed site will be discharged into the public foul water sewer located under New Lane. Following the pre-development enquiry, Southern Water had confirmed that a foul flow of 0.41l/s could be accommodated within their network. However, our assessment showed that the total peak foul flow from the proposed development was higher and a discharge of 0.51l/s was agreed with Southern Water. After further consultation to confirm the discrepancy between their initial capacity assessment and the foul flow discharge rate, Southern Water have subsequently confirmed capacity for foul flowrate of 1.18l/s in their local sewerage network (see Appendix K). Therefore, there are no capacity issues with the proposed connection to the existing foul drainage network and a connection application can be made at the appropriate time post-planning.

3.7 Pre- application submission

A formal pre- application for the proposed development was submitted to the Environmental agency, Portsmouth Water and Southern Water. All responses received are enclosed in Appendix I. In addition, a pre-development enquiry was issued to Southern Water with regards Surface and Foul Water drainage; which response is contained at Appendix K.

3.8 Post-application responses

3.8.1 Environment Agency

Following the review of the full planning application APP/21/00200, the Environment Agency has confirmed that they have no objection to the proposed development and planning permission could be granted if the 4 standard planning conditions referred in their response letter dated 01 April 2021 are included. We recommend that these are standard planning conditions and can be accepted. Refer to Environment Agency letter enclosed in Appendix J.

3.8.2 Portsmouth Water

In the response letter dated 23 March 2021, Portsmouth Water has confirmed that the drainage proposals are acceptable following the review of the full planning application. Refer to Appendix J for the response letter.

3.8.3 Southern Water

In order to satisfy the sewer easement requirements detailed in Southern Water response letter dated 29 July 2020 (refer to Appendix J), all the proposed surface water features in close proximity to the public sewers have been relocated at appropriate stand-off distances as specified on the Southern Water Easement standards.

3.8.4 Hampshire County Council

In response to the correspondence from the Hampshire County Council dated 16 March 2021 (refer to Appendix J), the following items have been added to the Drainage Strategy Report v7.0.

- Existing and Proposed discharge rates calculation for all rainfall events, including all the proposed catchments. Refer to section 3.3.
- Detailed drainage layout drawing. Refer to Appendix G.
- Detailed network hydraulic calculations for 1 in 1 year, 1 in 30 year and 1 in 100-year (plus climate change allowance of 20%) rainfall events. Refer to Appendix H.
- Exceedance flow path drawing. Refer to Appendix L.
- Southern Water response letter to the pre-development enquiry. Refer to Appendix K.

3.9 Maintenance Requirements

It is anticipated that a private management company will be employed to maintain the completed drainage network for the development incorporating the following activities and frequency for each SUDS component.

3.9.1 Gullies/Channels/Pipes/Manholes

All components are to be periodically cleaned of foreign particles and silt accumulation, on a quarterly basis. Components located in unadopted areas will be maintained by the landowner. Those located in adopted areas will be maintained by the adopting authority.

3.9.2 Oil Separators/ Petrol Interceptors

Units are to be inspected at least every six months in accordance with the manufacturer's recommendations. A log should be kept detailing the depth of oil found, any oil volume and silt removed, or cleaning carried out. Alarm probes should be removed and cleaned at each inspection.

3.9.3 Attenuation Tank

The proposed attenuation tank includes a perforated/ slotted distribution pipe surrounded by granular material providing filtration and treatment for surface water flows. This in conjunction with the proposed catchpit manhole (silt trap) is considered appropriate for the scale and nature of the development.

TABLE 21.3 Operation and maintenance requirements for attenuation storage tanks

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures and/ or internal forebays	Annually, or as required
Remedial actions	Repair/rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

3.9.4 Pervious pavements

Many of the specific maintenance activities for pervious pavements can be undertaken as part of a general site cleaning contract. A guidance on the type of operational and maintenance requirements is detailed below in table 20.15 from the CIRIA SuDS manual.

TABLE 20.15 Operation and maintenance requirements for pervious pavements

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Three-monthly, 48 h after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

3.9.5 Proprietary Systems

Proprietary systems will require routine maintenance by the owner to ensure continuing operation to design performance standards. A typical maintenance schedule is detailed below in table 14.2 from the CIRIA SuDS manual.

TABLE 14.2 An example of operation and maintenance requirements for a proprietary treatment system

Maintenance schedule	Required action	Typical frequency
Routine maintenance	Remove litter and debris and inspect for sediment, oil and grease accumulation	Six monthly
	Change the filter media	As recommended by manufacturer
	Remove sediment, oil, grease and floatables	As necessary – indicated by system inspections or immediately following significant spill
Remedial actions	Replace malfunctioning parts or structures	As required
Monitoring	Inspect for evidence of poor operation	Six monthly
	Inspect filter media and establish appropriate replacement frequencies	Six monthly
	Inspect sediment accumulation rates and establish appropriate removal frequencies	Monthly during first half year of operation, then every six months

4 CONCLUSION

In summary:

- 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 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).
- 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 drainage survey in Appendix D 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. 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.
- A site-specific infiltration test (conducted in accordance with BRE365 guidance) will be commissioned on the development site to establish the suitability of the infiltration approach.
- The site is located within 'Zone 1- Subsurface Activity' Ground Water Source Protection Zone (refer to section 2.4 of the FRA report produced by Pinnacle Consulting Engineers), which is designated as most at risk from contamination and development activities. Moreover, based on the geological profile in Table 1.1 and the existing drainage network on site, infiltration will not be suitable for this site, and therefore alternative discharge methods will be required.
- No opportunity exists to discharge into watercourse as the nearest watercourse is located at approximately 60m away from the north west site boundary, beyond New Lane road and residential properties.
- This report therefore proposes to discharge the surface water runoff from a development into the existing public surface water network. Discharge into the existing network is deemed more practical, in this case, as the existing site has existing connections to the nearby public sewer under New Lane road.
- The brownfield runoff rate calculated using the Modified Rational Method was 361.80l/s. As part of our proposal, a rate of 395l/s (over 50% betterment) has been proposed to discharge into the existing network.
- The surface water runoff from the proposed impermeable areas in catchment A, B, C, D, E and F (total impermeable area of 56,960m²) will be collected into three separate networks.
- Due to the nature of the development, most of the site is impermeably surfaced and options for SuDS features are limited. Car parking bays are to be permeable block paving. The surface water runoff from van parking areas, loading docks and the access road will pass through the high-capacity

slot drainage channels, gullies and filtered through the petrol interceptor before they enter the designated cellular storage tanks. Petrol interceptor will prevent potential contaminants that are present in the form of hydrocarbons from oil spillages from reaching into the underground storage tanks. Flows will then be restricted to prescribed discharge rates by using flow control devices (hydrobrakes) before discharging into the two outfall points within New Lane. A Pump chamber will be required for the proposed surface water network collecting runoff from catchment A, whereas rest of the surface water runoff will be conveyed through a gravity piped network.

- Our assessment is that a total cellular attenuation storage capacity of 1046.15m³ is required for the proposed design. Additional required storage will be provided by the high-capacity slot drainage channels and the permeable paving.
- The foul flows generated from the proposed site will be discharged into the public foul water sewer located under New Lane. Following the pre-development enquiry, Southern Water has confirmed adequate capacity within the existing network to accommodate foul flows from the proposed development.