

ITCHEN VALLEY COUNTRY PARK**Planning Condition 12 Discharge – Drainage Strategy**

15/11/2023

REVISION	PREPARED	CHECKED
P1	RS	RW

Introduction

This technical note seeks to provide the necessary information to discharge planning condition 12 which is related to the drainage strategy and is detailed below:

“The development shall not be brought into use until a detailed surface water drainage scheme (based on the principles within the Drainage Strategy Report ref: P450815-WW-XX-XX-RP-C-0003) has been submitted to and approved in writing by the Local Planning Authority and installed in accordance with the approved details. The submitted details should include:

- a. A technical summary highlighting any changes to the design from that within the approved Drainage Strategy Report.*
- b. Infiltration test results undertaken in accordance with BRE365 and providing a representative assessment of those locations where infiltration features are proposed for new impermeable areas and roofs.*
- c. Detailed drainage plans to include type, layout and dimensions of drainage features for new impermeable areas and roofs including references to link to the drainage calculations.*
- d. Detailed drainage calculations for new impermeable areas and roofs to demonstrate there is sufficient attenuation for storm events up to and including 1:100 + climate change.*

Once installed the sustainable drainage system shall be maintained in accordance with section 4 of the approved drainage strategy report (by Whitby Wood, 13/04/22 reference P450815-WW-XX-XX-RP-C-0003)..”

a. Technical Summary of Changes

As a whole, the drainage strategy has kept in line with the initial strategy (and the addendum) issued as part of the planning application. Any changes that have arisen since then are a result of design development.

Permeable Paved Car Park

In line with the addendum, no soakaways are proposed due to Soakaway tests returning poor results. The permeable paving has however been designed as system B to allow partial infiltration where possible. A series of perforated pipes are still proposed to drain any excess surface water that cannot percolate quick enough. Due to the steep topography, check dams have been introduced at strategic locations to maximise the storage potential of the permeable paving.

Following further discussions with Portsmouth Water regarding the assets traversing the site, the depths of permeable paving was redistributed to prevent clashes with existing mains. This resulted in subbase depths of 0.8m and 1m south of the easement area and closer to the outfall and 0.35m elsewhere, as opposed to a 0.5m constant subbase depth across the entire network that was proposed initially. The total attenuation volume was retained, and the causeway simulation outputs prove that adequate storage is still provided to prevent flooding for all storm events up and including the 1in100 year +40% climate change.

Access Road

An additional SuDS feature was introduced for the gravel access road in the form of a filter drain. This was initially included in the original version of the drainage strategy report with the intention of being an infiltration trench but subsequently removed in the addendum once soakaway tests returned poor results.

The filter drain has now been reintroduced to help improve water quality of the surface water runoff. A perforated pipe picks up any excess rainwater that can't percolate and discharges into a local pond. The gravel road itself has been designed to have a subbase with high void ratio to encourage natural percolation of surface water falling on it.

Modular Building Drainage

The modular building drainage has developed since the drainage addendum. A series of perforated pipes have been introduced below the building to ensure the void beneath the structure can drain. All surface water from this new hardstanding area is then drained via a swale before discharging into the existing drainage within the car park. This is evident on the updated drainage plans.

b. Infiltration Test Results

Infiltration test results were submitted alongside the drainage strategy addendum to demonstrate that soakaway features were not feasible for this site. The investigations show that the BRE365 tests failed to return an infiltration rate because the soakage of water through the clayey soil was so poor. As a result, there are no soakaway features proposed on site. The SI results have been enclosed with this technical note.

c. Detail Drainage Plans

All detailed drainage plans, details and schedules have been enclosed with this technical note to demonstrate the full drainage proposals.

d. Detail Drainage Plans

The hydraulic simulation outputs from the Causeway Flow Software have been enclosed with this technical note. As the results show, the network ensures no flooding for all storm events up to and including the 1in100 year event +40% climate change.