

TECHNICAL NOTE

Project: AllHallows – Haven Holiday Park
Job No: 5720 – P01 (Draft)
Purpose of Note: DRAINAGE STRATEGY APPRAISAL
Date: 13/10/2023

This technical note is provided to support the drainage design for the proposed development at AllHallows Holiday Park, AllHallows, Rochester, ME3 9QD.

In support of the planning application MC/23/1781 with Medway Council, the proposed drainage at the site has been designed to follow the guidance set out by Medway Council, the National Planning Policy Framework and Building Regulations.

Drainage Strategy Proposals

A drainage strategy was compiled by Considine report reference 5720 FRADS-P02.

It is evident from Southern Water sewer asset records that there are no surface water sewers within the vicinity of the site. However, there is an abundance of private surface water networks that generally flow north, towards The Thames.

The existing roof area and hardstandings appear to discharge surface water into these networks, that are understood to discharge at an unrestricted rate to the nearby watercourse.

Given the soil at the site, it is unlikely that the areas of softscape drain fully to ground. It is anticipated that for severe storm events, these areas surcharge and also discharge into the positive drainage networks.

The recently constructed 'Show Bar' building and associated access road is understood to discharge to a swale located north-east of the building. Rainwater pipes attributed to the 'Show Bar' building that shall be enclosed by this new link building shall therefore need to continue to drain as existing.

The proposal is to utilise a new geocellular attenuation tank and connect to the existing private network that benefits from a swale. Accordingly, all storm events up to and including the critical 100-year event with a 45% allowance for climate change will be assessed when considering the volume for the attenuation structure.

The attenuation structure will be sized to accommodate a 1 in 100 year storm event with a 45% allowance for future climate change. This is in accordance with the latest national policy.

Site Conditions

The British Geological Survey (BGS) identifies that the site is underlain by the London Clay Formation (Clay and Silt).

Note that Ground Engineering Report (C14788) shows no ground water encountered.

According to MAGIC mapping, the site is above an unproductive Aquifer and of Medium to Low Groundwater Vulnerability. The site is also not in a Source Protection Zone.

A site investigation report was undertaken by Ground Engineering Report C14788 which showed no elevated concentrations of ground contamination.

Climate Change

In accordance with the latest Environment Agency guidance, the surface water drainage will be assessed for the 2070s epoch for developments with a lifetime between 2061 and 2125. For the proposed site, the 3.3% annual exceedance rainfall event upper end allowance for climate change is 35%, and the 1% annual exceedance rainfall event upper end allowance for climate change is 45%.

Departure / Deviation from Strategy Proposals

There is no departure proposed from the original drainage strategy.

Surface Water Proposals

The proposed site layout precludes the use of soakaways due to the sub strata being London Clay.

Where infiltration has been determined to be unsuitable, the proposed discharge method has been selected following the Building Regulations (H3) discharge priority:

Re-Use		Discounted - Rainwater harvesting systems should be assumed to be full during rainfall events to ensure suitable design for the worst case scenario.
Infiltration		Discounted - Infiltration has been determined as unsuitable (see previous paragraphs)
Watercourse		Viable option – A swale within the vicinity of the site which leads to the River Thames.
Surface Water Sewer		Not applicable– Prior Option Viable
Combined Sewer		Not Applicable – Prior Option Viable.
Foul Sewer		Not Applicable – Prior Option Viable.

It is proposed to discharge surface water to an existing swale located to the east of the site via a pump controlled attenuated outfall.

The brownfield runoff rate has been calculated at QBAR 6.6 l/s. To provide 50% betterment the discharge rate is 3.0 l/s, this has been used for all storm intensities up to and including the 1 in 100 year event + 45% climate change with the appropriate geocellular attenuation provided.

External areas are proposed impermeable Asphalt paving which will fall towards low spots where drainage channels and gullies will convey flows to the attenuation system. From this attenuation system the water will be pumped to an existing swale feature which discharges off site.

The proposed area to be drained is approximately 1,080m². This comprises the commercial roof areas, external paving areas and some existing roof areas.

The attenuation comprises a lined geo-cellular crate structure. The structure is designed to provide a gross volume of 48.0m³ with a 95% void ratio, thus creating 45.6m³ of effective storage.

The proposed point of discharge is to an existing swale on site which then flows north to an outfall to the sea.

Pollution Mitigation

The proposed surface water drainage has been assessed using the pollution mitigation indices procedure as per CIRIA C753.

It is proposed that this minor network is connected to the recently constructed network as defined within planning reference MC/19/1820. This network comprises a swale structure that enhances water quality and reduces downstream pollution. The network shall also benefit from the use of catchpits which shall further assist with pollution prevention.

Full results of the pollution mitigation indices assessment can be found within the design calculations.

Foul Water Proposals

The foul network is to drain as existing therefore new foul water proposals are not required.

General

A maintenance manual has been produced in a separate document for the drainage scheme.

Conclusion

The surface water network has been designed in accordance with local and national policy.

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