

Surface Water Drainage Assessment

Land Adjacent To Hillcrest Awliscombe

On Behalf of Mr R Falle

February 2024



EJFP Planning
CHARTERED TOWN PLANNERS

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Site	Land adjacent to Hillcrest Awliscombe			
Report for	Mr R Falle			
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1. INTRODUCTION

- 1.1 This assessment is provided in support of the outline planning application for residential development (including 8 affordable dwellings, 4 downsizing dwellings and 8 open market dwellings, a shop and provision of land for a new village hall on land at Hillcrest Awliscombe.
- 1.2 This assessment deals with the issue of surface water drainage for the site.

2. ASSESSMENT

- 2.1 The site is located on the southeastern edge of the village of Awliscombe, which has a settlement limit. Awliscombe lies just under 2 miles the west north-west of the centre of Honiton and approximately 1.5 miles from the A30, just 7 ½ miles south-east of Cullompton and 4 ¾ miles north of Ottery St. Mary and just under 4 miles to the south of Dunkeswell Airfield.
- 2.2 The site is located in the field on the south side of A373, the main road that links Honiton Cullompton. The site is currently used as an agricultural field; it has mature boundaries on the south, east and west sides of the site, with a post and rail fence along the northern boundary of the site; this boundary abuts the A373. The application site is relatively flat, with a slight slope from east to west.
- 2.3 To the north of the site, there are 3 dwellings, beyond which lay agricultural fields. There are agricultural fields to the south; there is a single field to the west beyond, which is the start of the main village of Awliscombe. To the east is the property of Hillcrest and a small estate known as Sunnyside. The main village lies west of the site, boasting a pub, primary school and village hall.
- 2.4 The proposed access to the site is to be taken from the existing point of access into the field from the A373, which is an adopted highway. The current access is in the northwest corner of the site. There is a footpath that runs along the entire length of the northern boundary of the site.
- 2.5 The site is located in flood zone 1, so there is no requirement for a flood risk assessment. There is a small stream that runs along the western boundary of the site.
- 2.6 The site does not lie within a National Park, nor is it located within a conservation area. However, the site does lie immediately adjacent to the Blackdown Hills Area of Outstanding Natural Beauty.

3. SURFACE WATER DRAINAGE ASSESSMENT

Existing Arrangement

- 3.1 The site is laid down to grass and benefits from greenfield runoff rates. As far as the author of this document is aware, the site has never suffered from flooding or caused flooding to its neighbours. The site generally slopes from north to south and west to east.
- 3.2 The site benefits from a watercourse that runs along its west edge.

Proposed Arrangement

- 3.3 At this stage, the proposal is in outline only, and the final details regarding layout, house sizes, etc, have yet to be established. Accordingly, providing a detailed drainage system at this stage is impossible.
- 3.4 The general presumption is that surface water should be dealt with in as a sustainable way as possible. A cascade approach starts with dealing with the surface water on-site through sustainable methods such as soakaways, swales, ponds, etc. Should these methods not be appropriate, the next alternative is using attenuation systems, including oversized pipes or holding tanks and a controlled flow discharging into the agreed drain. The final option is to discharge directly into the nearest stormwater drain without attenuation. The first option is the most preferable, and the last option would be the least satisfactory.
- 3.5 Taking the above sequential approach into account, it is considered that the proposed development of the housing site would deal with the surface water drainage by way of soakaways.

Soakaways

- 3.6 The soakaways will be sited in the garden areas where possible or in the proposed open space. This has been indicated on the proposed layout plan 4050.0002/C.
- 3.7 The soakaways will be sized using the following calculation $\text{Vol}[\text{m}^3] = \text{Area} [\text{m}^2] \times (50\text{mm per hr}/3000)$. This formula states that the volume of soakaway required is equal to the area to be drained (in m^2) multiplied by the product of the storm rainfall rate (assumed to be 50mm/hr in UK) divided by 3000. The proposal is to use a modular system, which has the benefit of releasing stormwater into the ground at a controlled and steady rate. The volume will be upsized by 30% to take into account climate change.
- 3.8 The example below is based on the indicative plan accompanying the outline application.

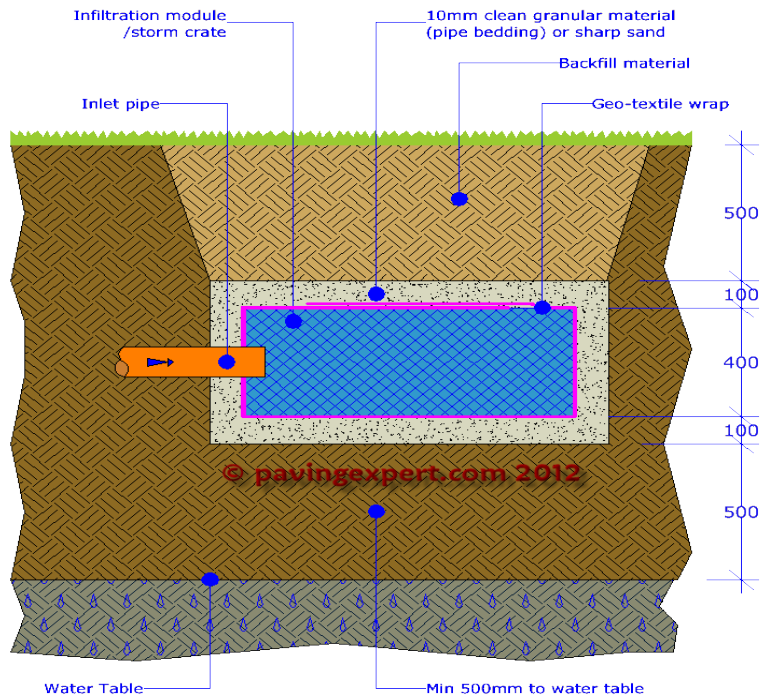
The size of the soakaway for dwelling (plot 20) (based on roof area only) is calculated as follows;
Total area of roof is 80m^2
Volume of plot 20 soakaway is $V^3 = 80\text{m}^2 \times (50/3000) =$
 $V^3 80 \times 0.01667 = 1.33$

$1.33 \times 0.3 = 0.399$ (accounts for climate change)
Therefore, the volume for each soakaway is 1.73 m^3 .

3.9 The standard sized create for the modular system is 1000mm x 500mm x 500mm thus 7 creates per soakaway will be required. These will be over capacity and, therefore, provide additional storage space in the event of a greater-than-average rainfall event.

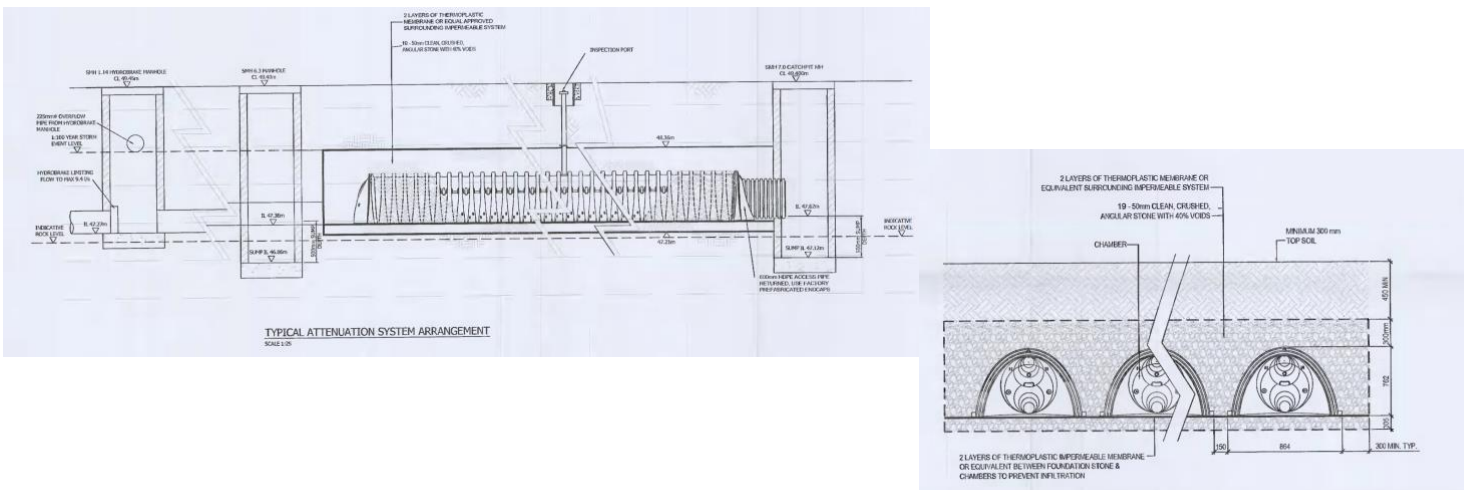
3.10 A typical section of a modular soakaway is shown below.

3.11 There is sufficient space within the proposed garden area for the proposed soakaways.



Attenuation

3.12 In the event that the soakaways do not work or only work on part of the site, it is proposed to install an attenuated system. The surface water would be stored in suitably sized tanks or oversized pipes and then discharged into the adjacent water course at a controlled rate to be agreed upon with the Council. A typical example is shown below -



4. CONCLUSIONS

- 4.1 The sequential approach to managing surface water will first be by way of soakaways, which are considered to be the most appropriate way of dealing with surface water. In the event that soakaways are not appropriate, an attenuated system will be used with a controlled discharge into the adjacent water course. The application is an outline application, so the final details of the surface water will be dealt with at the reserved matters stage.
- 4.2 Therefore, the above represents a clear and acceptable strategy for dealing with the surface water from the site.