

Sustainable management of rainwater runoff and submitting SUDS applications.

Technical Advice sheet

Introduction

In January 2019 the Flood Water Management Act 2010 (Wales) came into force meaning any new development¹ over 100 sq m needs a sustainable drainage application to the approval body at the local authority. Rather than seeing this as a constraint or a control we, as growers, should be thinking about rainwater as a valuable resource for the farm and home. Here we discuss some ways you can make the best use of rainwater on your horticultural enterprise and how, if you do this effectively, you are able to provide good sustainable drainage solutions on your next development. SAB authorities do regularly monitor, so don't be caught out as it is much harder and more costly to retrofit solutions.

How much rainwater?

The first step in working out how to manage and make use of water is to get a rain gauge. A wide range of professional gauges are available online, including digital ones. There is research and data out there about rainfall in your area such as [The Wallingford Procedure - for design and analysis of urban storm drainage - EPrints at HR Wallingford](#) maps, but you can work this out yourself too but writing down in a diary how much rain falls throughout the year on your site. In addition to this you should look at where rainwater comes from and where it flows across your site. This can be done by observing the flow of water when you are out in the rain on your site. You can then work out how much surface area a particular building or hardstand is (or that you are proposing) and calculate how much water you need to manage or make use of.

Annual Rainfall mm/year x Collection Area Msq = Harvestable rainwater (the actual figure is likely to be 90% of this due to the nature of the roof and might be further reduced by the efficiency of any filtration system.)

Always overestimate this to account for extreme events.

Where water runs, make it walk

Water runs off at 90 degrees to contour, or straight downhill. Careful observation of your land will show you where water runs and gathers. The idea of sustainable drainage systems is to; ideally prevent it reaching the public sewer or in most cases, slow it down as much as possible so that it becomes a resource you can use instead of a problem. You can help the water infiltrate into the ground like it would normally do if there were no buildings or hardstanding on the land or you can create 'systems' or 'solutions' to hold water and slow it down.

¹ Any development, regardless of whether it needs planning permission. This covers all structures or hardstanding areas or any form of excavation (engineering operation) over 100 sq m.



One of the first things you can do to improve infiltration rates is to improve your soil, increasing organic matter levels, putting in swales, planting trees and other perennials on contour, and creating wetlands with water loving plants.

Increasing the sponginess of your site makes your business more resilient in the face of both flood and drought. This is part of working holistically with the land and climate to the benefit of both your project and to the wider landscape.

Interception Methods

There are a whole range of methods that we can use on our farmland to intercept water. This [Advisory Note](#) from Welsh Government does a good job of explaining some of the options available to us. The note also provides a good idea of what is required for new developments in terms of a SUDs application to the SAB (approval body).

Gaining SUDs approval

It is important to design sustainable drainage systems into your development before submitting a planning application. There are six standards that need to be met within your proposal, so it is important to have early discussions with the SAB team at your local authority. Page 5 of the above Advisory Note from Welsh Government provides email addresses for all the approval bodies across Wales. They will usually give you some free advice over the phone or on email, but some authorities are under resourced and encourage formal pre application discussions. These discussions are very important as once you submit your formal application it cannot be changed, and you may need to resubmit all over again if things are not right. There is usually a fee for pre application advice. SAB authority fees vary across Wales. For some larger developments you will need to acquire the services of a drainage consultant who will be able to submit the application for you. There is usually a standard £420² fee for submission of a SUDs application to the approval body. However, the fee will increase based on the area of development. Once validated the application process takes up to 7 weeks. As a grower, you may notice that not all the questions on the application form are relevant as the application form is the same for all development. Approval should be granted before construction starts. There will be an inspection during and/or post construction.

Installing and using your water management solutions

There are groundwork consultants who will install rainwater harvesting systems or undertake earthworks required for water management. It is also possible to undertake work yourself, perhaps beginning with less comprehensive solutions such as planting trees and perennial systems on slopes, putting in small rainwater harvesting systems, overflow ponds, rainwater gardens or small swales.

[Choosing Ecological Water Supply and Treatment – Centre for Alternative Technology](#)

[Essential Rainwater Harvesting: A Guide to Home-Scale System Design - Rob Avis, Michelle Avis - Google Books](#)

Social Farms & Gardens can both offer design advice and help to find appropriate contractors if that is proving to a problem.

² As at January 2025. These fees may be subject to change.



It is important to make sure that you understand how your systems work because, as many growers are owner operators, it will be us who must maintain them and keep them working to a certain standard.

The approach we recommend is to pursue long-term integration of your buildings and business into the wider landscape, mimicking natural water processes, seeing rainwater and waterflows which might otherwise become a problem, as resources which can raise productivity, whether of tree plantings, perennial systems, or in horticultural production.

Example photo



A rainwater harvesting system on a small farm in Italy. Credit: arte-util.org

Heading	Sustainable Drainage Solutions
Sub Heading	How to submit a sustainable drainage application How to design rainwater harvesting and other solutions into your farm



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