



RAIN GARDEN & SUDS PLANTER GUIDE

CATALOGUE - 2024





ABOUT US

Meristem Design is an award winning design company creating bespoke green solutions for commercial, public realm and residential spaces.

Meristem offers a comprehensive service of design, installation and maintenance to cater for any green infrastructure needs. This range includes, but is not limited to permanent and temporary parklets, rain gardens, SuDS planters, living walls, green screens, interior greening, green roofs and trellis systems.



Flood and Coast Excellence Awards 2023



Energy Globe Award 2022 - United Kingdom



Business Elite Awards 2022



Pro Landscaper's 30 under 30 2021



OUR MISSION

Our mission is to bring more green into your world, whether at home, in the office or on your commute, we are committed to turning the grey green.

We are therefore, part of a movement to make cities healthier and happier places to live, and hope to become part of a wider societal trend towards embracing plants to live a more fulfilled life.



Susdrain SuDS Awards 2022



ATCM - Town and City Management Industry Awards 2022



West London Business Awards 2020



International Healthy Streets Awards 2019



RAIN GARDENS

Rain gardens are a type of **Sustainable Drainage System (SuDS)** that capture rainfall before it enters the piped network and either releases it slowly into the network or allows it to infiltrate into the ground.

They are flexible in design and are excellent examples of how SuDS components can be integrated into a streetscape without negatively impacting the primary function of our streets and spaces.

The performance of a rain garden can be enhanced by engineering the sub-base to include a gravel layer that helps to filter pollutants and provides more storage capacity for rainwater.

Rain gardens can help improve surface water management whilst performing a range of other functions such as amenities, reduced pollution and improved biodiversity.



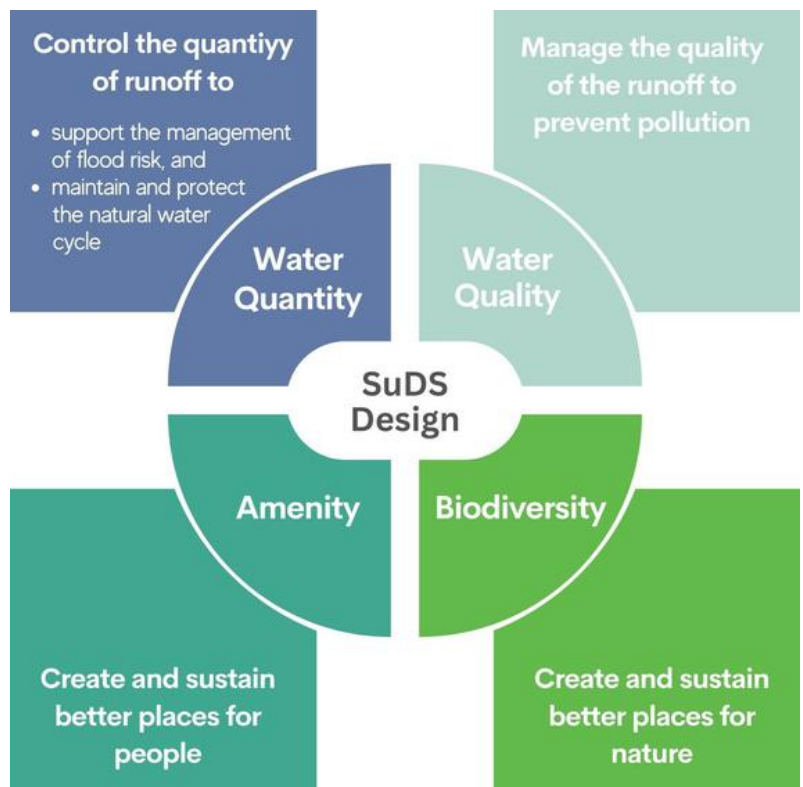
Coppermill Rain Gardens

DESIGNING A RAIN GARDEN

- Technical Sheet -

1/ Choose the right location

The first step is to determine the location of your rain garden. Rain gardens are best located at low points where surface water will flow to. However, where rain gardens are being created as part of a larger scheme the overall layout may determine the most suitable location, so some flexibility is required.



Source: *The SuDS Manual 2015, CIRIA*

2/ Composition of a rain garden

A rain garden typically comprises the following features:

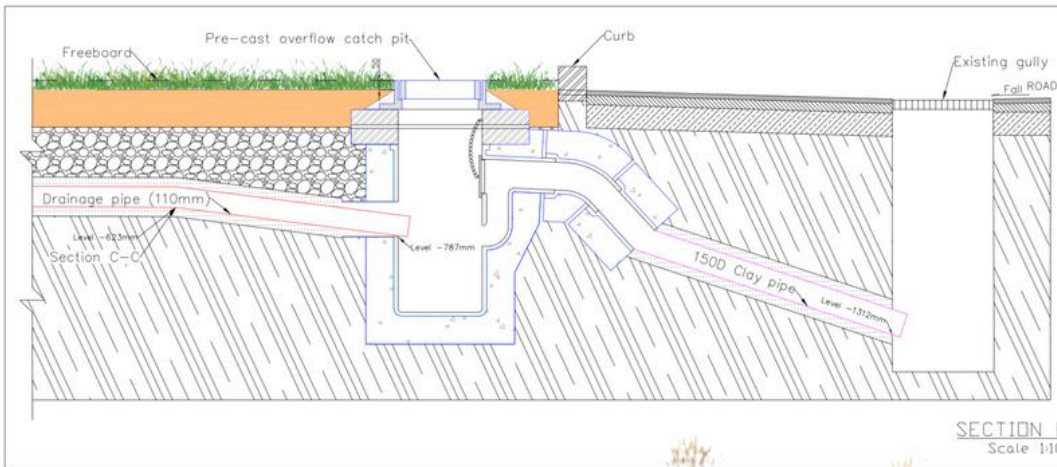
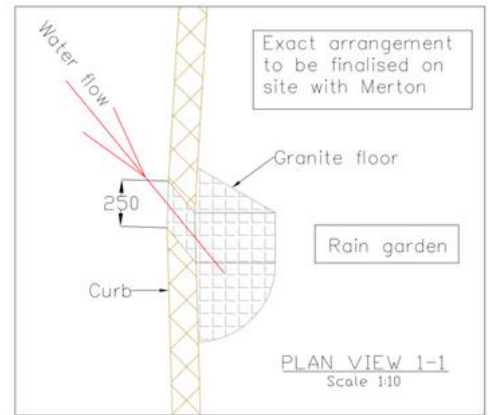
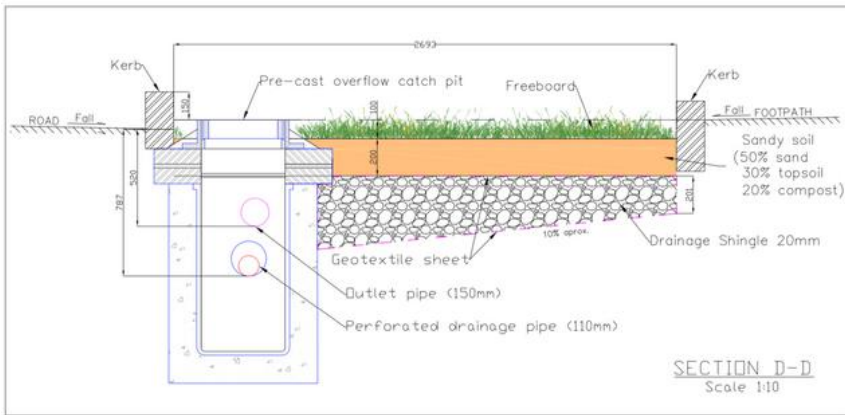
- 1. Freeboard:** The freeboard provides potential water storage space, above the topsoil. The freeboard depth is measured from the carriageway or footpath level to the top of the topsoil.
- 2. Topsoil:** Topsoil usually consists of a mixture of soil, sand and compost. Soil permeability can be specified according to the ratio of these three components. Rain gardens often have a sandier soil composition than normal to allow faster infiltration.
- 3. Sub-base:** The sub-base should be 100-500mm deep. The depth of the sub-base will vary depending on the required storage capacity and budget. A deeper sub-base will help store more water.

3/ Calculate the size and depth

Making a rain garden bigger (and therefore storing more water) increases the flood risk management benefit, however, this needs to be balanced against cost and availability of space.

WIMBLEDON HILL RAIN GARDEN

- Technical Sheet -



**Buried services can have an impact on the design of your rain garden.*

Rain gardens can still be installed where utilities such as electricity, gas and water are located within the proposed construction depth;



Hydrorock© natural aquifer blocks offer a range of solutions for urban rain gardens. Rainwater is captured and held either to be released into the piped network via attenuation options or released into the ground through infiltration.

BENEFITS

- Reduces flood risk and erosion by slowing heavy rainfall.
- Flexible layout to fit into the landscape.
- Low maintenance garden, it can absorb up to 30% more water than grass.
- Enhances wildlife habitat for biodiversity.
- Improves public health and wellbeing.
- Increases amenity space.
- Aesthetic improvements.
- Improves air quality.
- Reduces urban heat island effect.



600m2 of rain gardens with a cycle path to both sides



Rain Gardens at Royal Docks Corridor

PUBLIC ENGAGEMENT

SuDS can help bring communities together. This is especially the case if the community has been involved in the SuDS design process and **residents have ownership of the ongoing maintenance.** It is essential for the community to understand why installing rain gardens and undertaking other alternative drainage solutions is necessary and beneficial for the area. Involving the community should be considered an investment in the future success of the scheme. If the community is informed and supportive of rain gardens and their benefits, you are more likely to garner support from the councillors and other stakeholders making implementation easier.



Community Rain Gardens, Waltham Forest



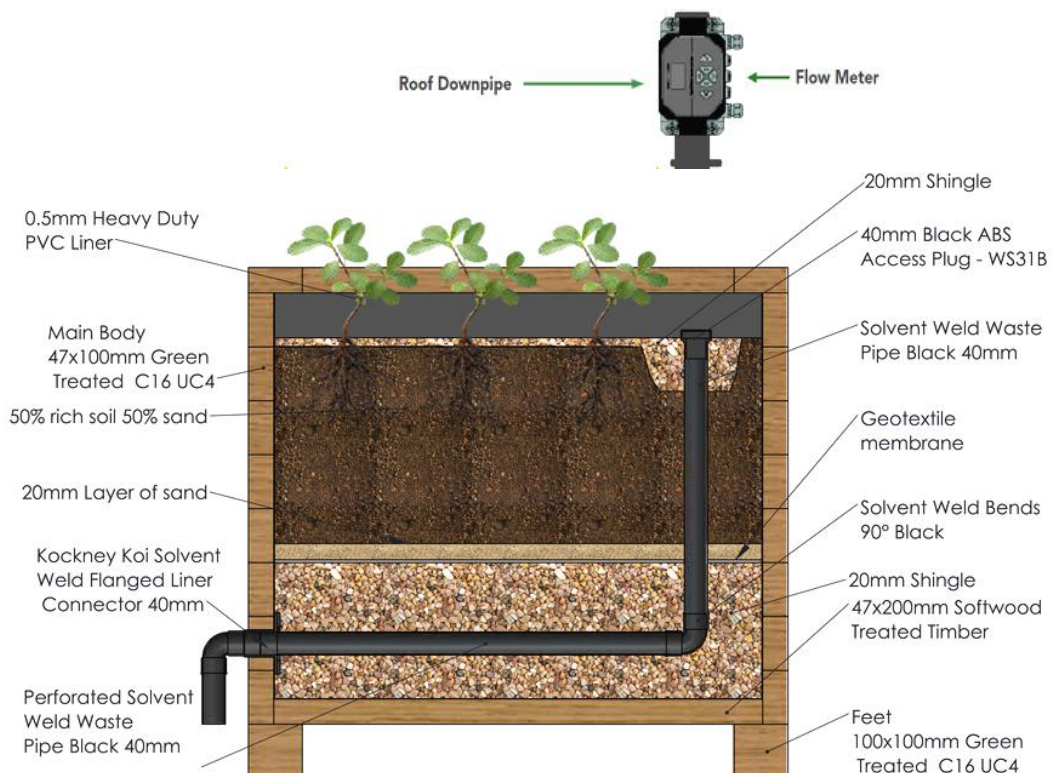
Our SuDS planters are a sustainable way to manage rainwater run-off from rooftops.

SUDS PLANTERS

Available in oak hardwood or treated softwood.

Our planters are supplied fully assembled and ready to connect into the existing drainage system. The planters are tanked with an internal drainage system. This includes an overflow and drainage outlet pipe, ready to fit into the existing site drainage system.

The drainage support pipe system is surrounded by gravel which helps with water dissipation. The whole unit is then covered with geo-textile membrane to keep it separate from the compost.



Turning the grey green©



 **HYDROROCK®**
the green label in water management

SUDS PLANTERS

With Hydrorock® natural aquifer blocks

The Hydrorock© Planter System provides wide versatility in use and unlimited flexibility in design configuration, installation and operation. For apartment blocks or office spaces, they can be a great way of greening our urban landscapes.

- ✓ **100% natural & sustainable.**
- ✓ **Made from Rockwool pre-wrapped in a protective geofiltration membrane.**
- ✓ **94% water retention by cubic volume.**
- ✓ **Surface area of 1m² holds 142L**
- ✓ **Plants draw water from blocks via capillary action - fully loaded blocks irrigate plants for 28 days.**

MERISTEM
DESIGN



Turning the grey green©

MERISTEM
DESIGN



BENEFITS

This process of encouraging the rain water to flow through the planters significantly slows water down during storm conditions, helping to reduce the rate at which water enters our rivers, lakes, and oceans, making them less likely to flood during storms.

SuDS Planters help tackle pollution by removing many of the pollutants found in the runoff from roofs, such as sediment, bird droppings and deposits from air pollution.



Our climate-resilient school's program emphasises the importance of nature-inspired design and its role in combating climate change. By incorporating SuDS planters, schools provide hands-on learning experiences for children, educating them on the significance of sustainable practices and instilling a sense of environmental stewardship. FreeStations are being deployed across many of these schools to monitor rainfall rates, temperature extremes and the effectiveness of surface water flood-risk-reduction measures installed at the schools.

MAINTENANCE GUIDE



WATERING

The advisory watering schedule is below, however, during very hot or wet periods the watering schedule will have to change to reflect the weather conditions.



up to 30 visits per year											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1	2	3	3	4	4	4	3	2	2	1

OUR MAINTENANCE SERVICE INCLUDE:



1. Watering plants to their specific watering requirements
2. Removal of rubbish, leaves and other debris
4. Feeding of plants during the growing season
5. Pruning and trimming and cleaning the plants where necessary
6. Control of pests and diseases
7. Plant replacements for natural failures
8. Topping up mulch to 50mm depth once per year
9. Monthly safety check and detailed report sent to the client

Nature Playground with 35 square metres of wildflower turf at John Keble Primary School.



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