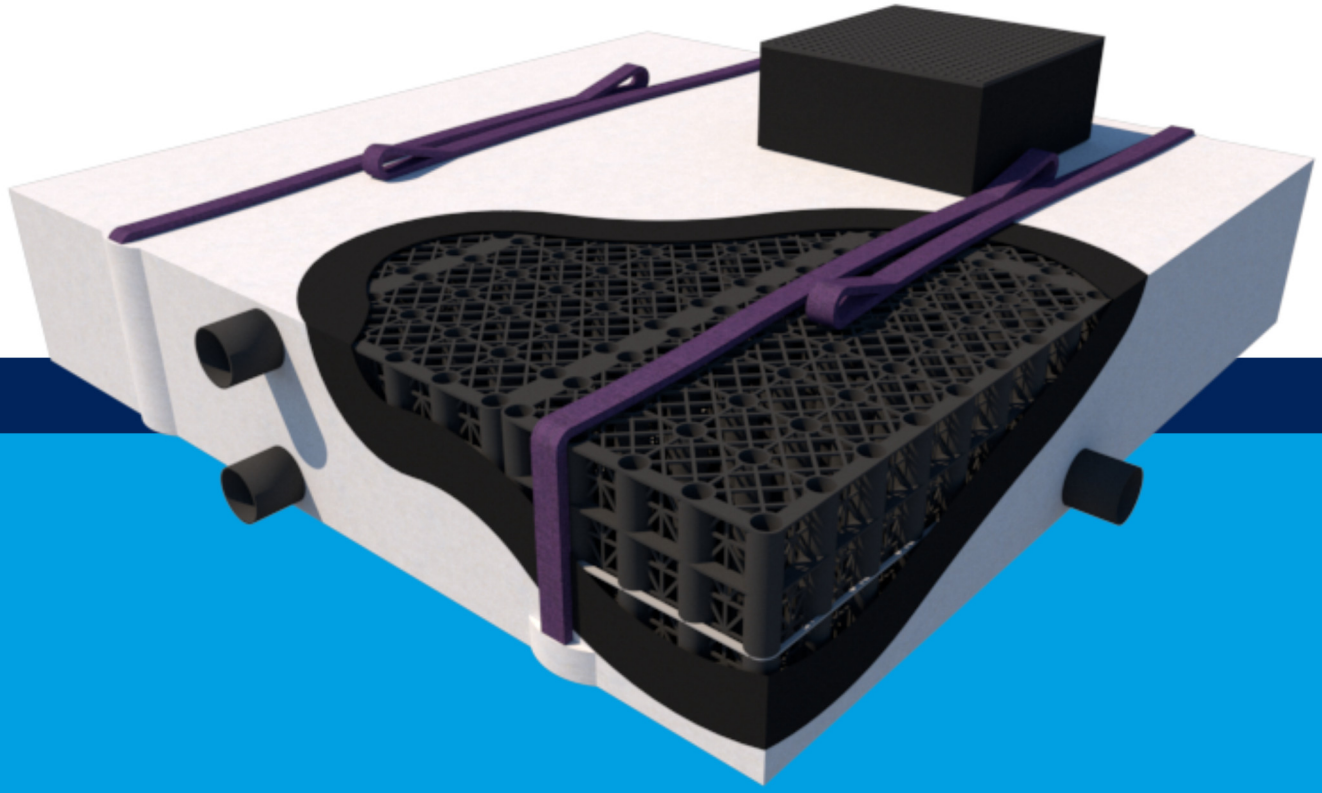
Straightforward SuDS

RAINTAINA



Raintaina System Brochure
Combined Attenuation & Flow Control

Version 2

Raintaina can help satisfy your SuDS obligations

SuDS?

SUDS are drainage systems that are considered to be environmentally beneficial, causing minimal or no long-term detrimental damage. They are often regarded as a sequence of management practices, control structures and strategies designed to efficiently and sustainably drain surface water, while minimising pollution and managing the impact on water quality of local water bodies.

Do I need SuDS?

The Flood and Water Management Act 2010 is the legislative requirement for all new developments to incorporate SuDs.

The National Planning Policy Framework (NPPF) is also a key driver, stating that development should give “priority to the use of sustainable drainage systems”. The NPPF also sets out key priorities for planning to address, including climate change, flood risk, water quality and biodiversity - all challenges that SuDS will help to address.

Raintaina can help satisfy SuDS in 2 ways:

Infiltration

Areas with permeable soils are ideal for infiltration of rainwater runoff. Infiltration is the preferred method by planners and the building regulations for dealing with rainwater runoff. Soils should be tested for suitability to infiltrate. Raintaina TSA can be used to infiltrate rainwater into the ground to replenish groundwater. Rainwater is temporarily stored within the unit whilst it slowly infiltrates into the surrounding soils. The highly voided surface area of the unit provides a very efficient soakaway.

Attenuation

Areas with less permeable soils will require to temporarily store rainwater runoff for controlled discharge to watercourse or sewer. Rather than flowing quickly into sewers or watercourses, increasing the risk of flooding and erosion. Raintaina can temporarily store rainwater and control the slow release to watercourse or sewer.

Specific local requirements for SuDS design and adoption may be set by the Lead Local Flood Authorities / Local Planning Department.

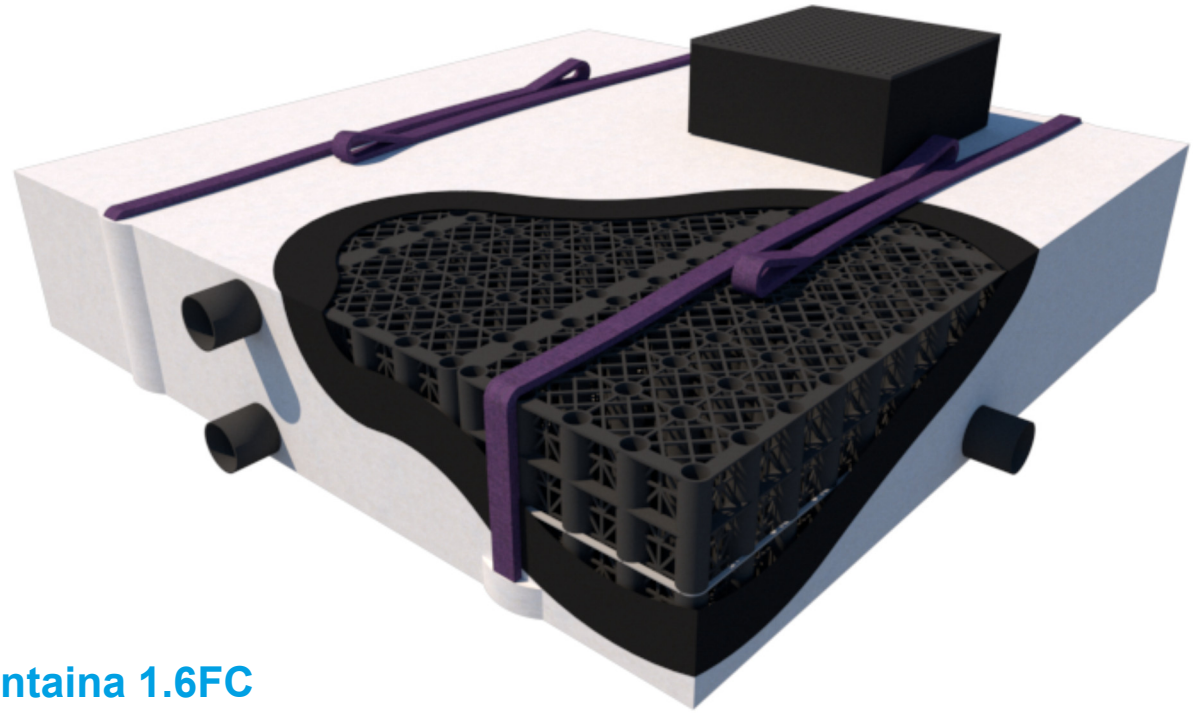
RAINTAINA

All-in-One System
Simple Solution
Easy to Install
Modular and Scalable
Has Lifting Points

CONTENTS

A Within Curtilage Solution

Designed for 'within curtilage' storm water management, the Raintaina 1.6 FC is a patented all-in-one self-contained SuDS surface water management system which can help satisfy planning conditions for new build housing with regard to surface water discharge restrictions. It complies with the Building Regulations Part H and is simple and easy to install. All inlet and outlet spigot connections fit standard 110mm diameter PVC-u underground drainage. For standard sized homes, a single Raintaina 1.6 FC is normally sufficient to manage roof run-off when permeable pavements are used to manage run-off from hard surfaces.



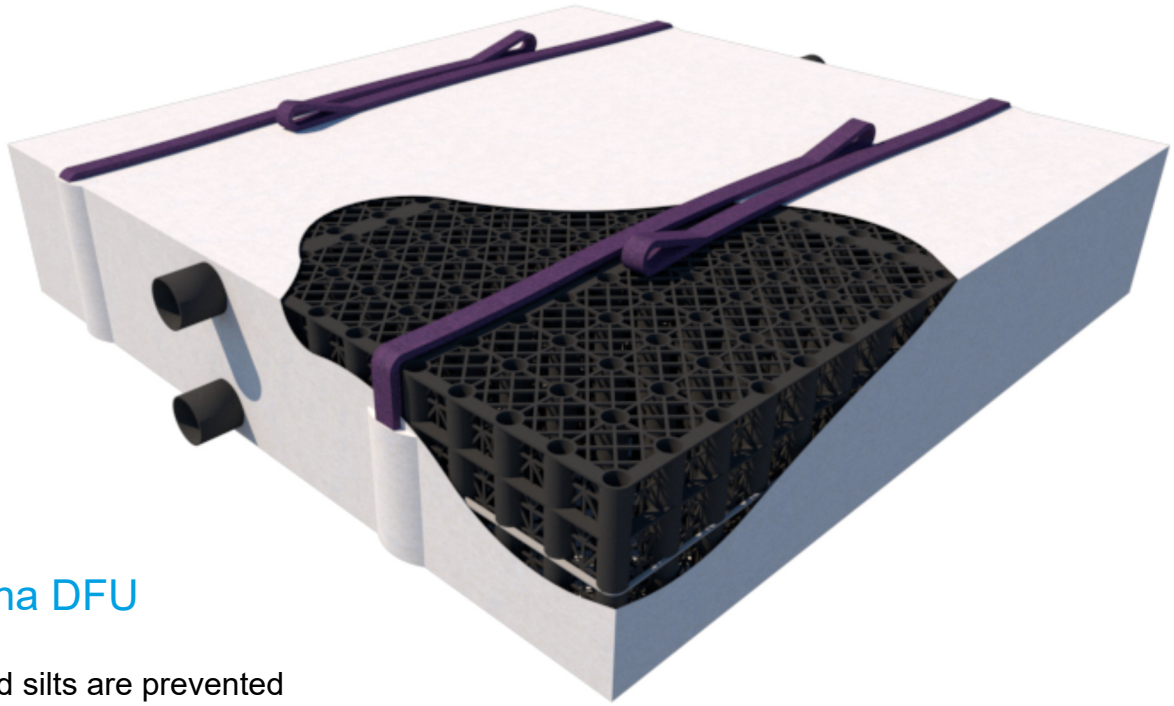
Raintaina 1.6FC

The Raintaina 1.6FC unit is a pre-formed, fully sealed attenuation module with an integrated flow control chamber which has been developed as a 'within curtilage' SuDS solution. The unit has a 1600 litre water storage capacity and an internal chamber with filter screen, to reduce the potential for blockage to the removable orifice flow control plate. In reality the likelihood of debris or silts entering the unit are very low when used in conjunction with the recommended Raintaina Downpipe Filter Unit.

A range of supplementary Raintaina attenuation units offering 1600, 1200, 800 and 400 litres of attenuation are available to satisfy any 'within curtilage' attenuation requirement. These can be simply connected in series using standard PVC-u Ø110mm pushfit couplings to meet each plot requirement.

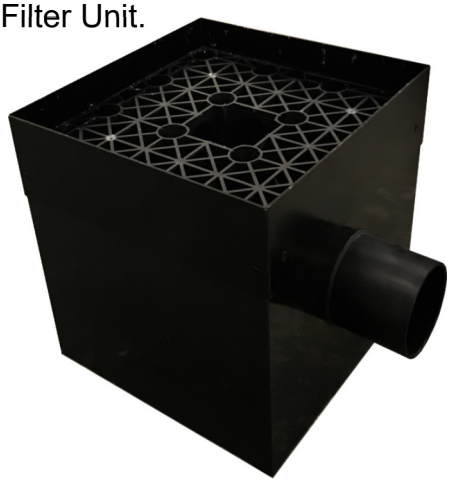
Raintaina TSA

The Raintaina TSA is a range of preformed soakaway modules offering 1600, 1200, 800 and 400 litres of storage prior to infiltration to satisfy any 'within curtilage' soakaway requirement. These can be simply connected in series using standard PVC-u Ø110mm pushfit couplings to meet each plot requirement.



Raintaina DFU

Debris and silts are prevented entering the Raintain TSA through use of the recommended Raintaina Downpipe Filter Unit.



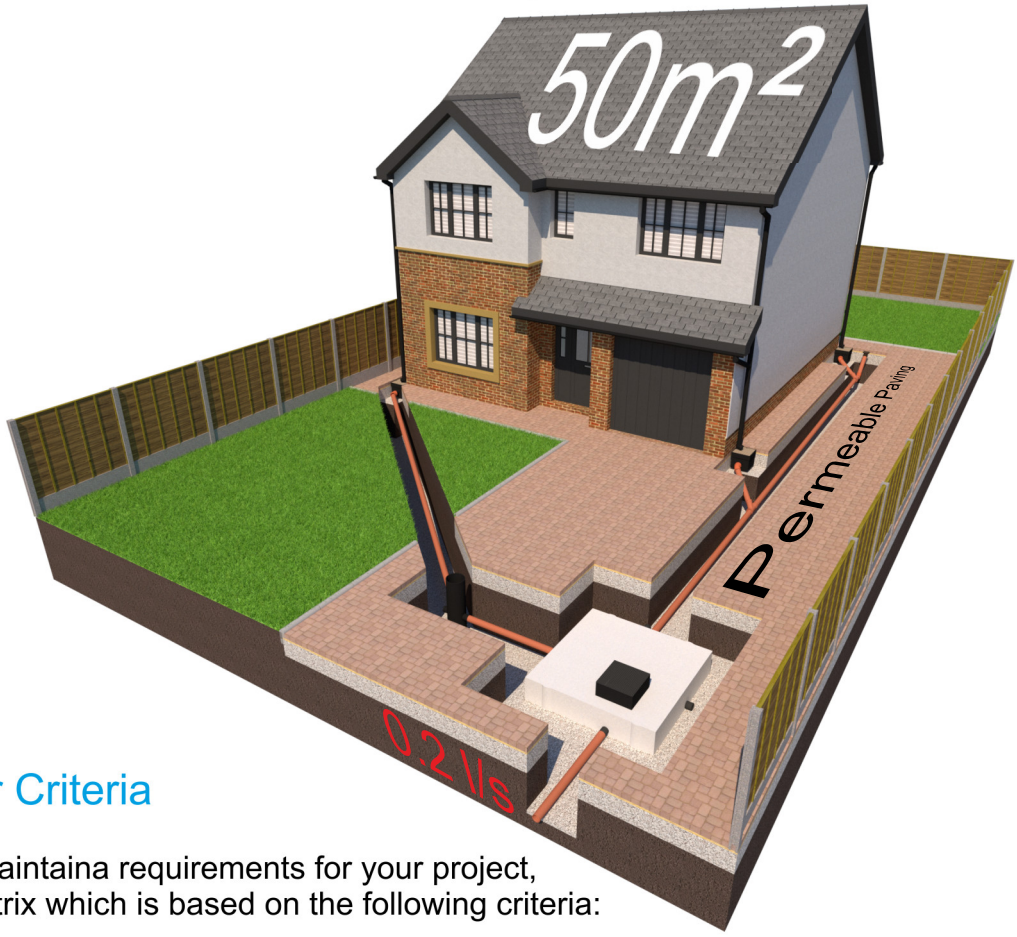
Load Bearing

The Raintaina modules are load bearing structures and can be installed with cover at low as 500mm deep. The units can be installed under trafficked or landscaped areas. Please contact distributor for confirmation of your individual cover requirements.

RAINTAINA

Rainwater Run-off

Whenever a site is developed the rate of rainwater runoff from the site significantly increases. In order to protect the against downstream flooding, planning authorities will impose discharge restrictions to control runoff rates from a development to match that of pre-development (Greenfield runoff) rates. Temporary rainwater attenuation storage is required to hold back this volume of water whilst the rainwater either infiltrates into the ground or is slowly released to watercourse or sewer.



System Estimator Criteria

To provide an idea of Raintaina requirements for your project, we provide a sizing matrix which is based on the following criteria:

1. A typical roof catchment area of 50m² for an average house size

2. The drive and hardstanding are of permeable construction

3. The plot discharge is 0.2 l/s (based on greenfield discharge rate for recommended house density per hectare)

4. Storm return period of 1in100yr + CC

5. Selected key locations around the United Kingdom

Suggested Storage Requirements

Location	Critical Duration (hrs)	Design Rainfall Rate (mm/hr)	Storage Required (m³)
Glasgow	1.27	38	1.50
Newcastle	1.23	44	1.84
Middlesborough	1.30	45	1.99
Leeds	1.27	45	1.99
Manchester	1.08	50	1.97
Nottingham	1.23	46	1.98
Conwy	1.35	46	2.15
Birmingham	1.23	46	1.98
Cardiff	1.3	45	1.99
London	1.13	51	2.12
Plymouth	1.5	41	2.03
Portsmouth	1.27	45	1.99

Worked Example

For a house in Manchester the storage requirement for roof run-off is 1.97m³ (or 1970 litres)

Therefore the Raintaina requirement for attenuation is:-

1no. RTNA01001 1.6 FC (1600 litres) and 1no. RTNA01104 (400 litres) = 2000 litres

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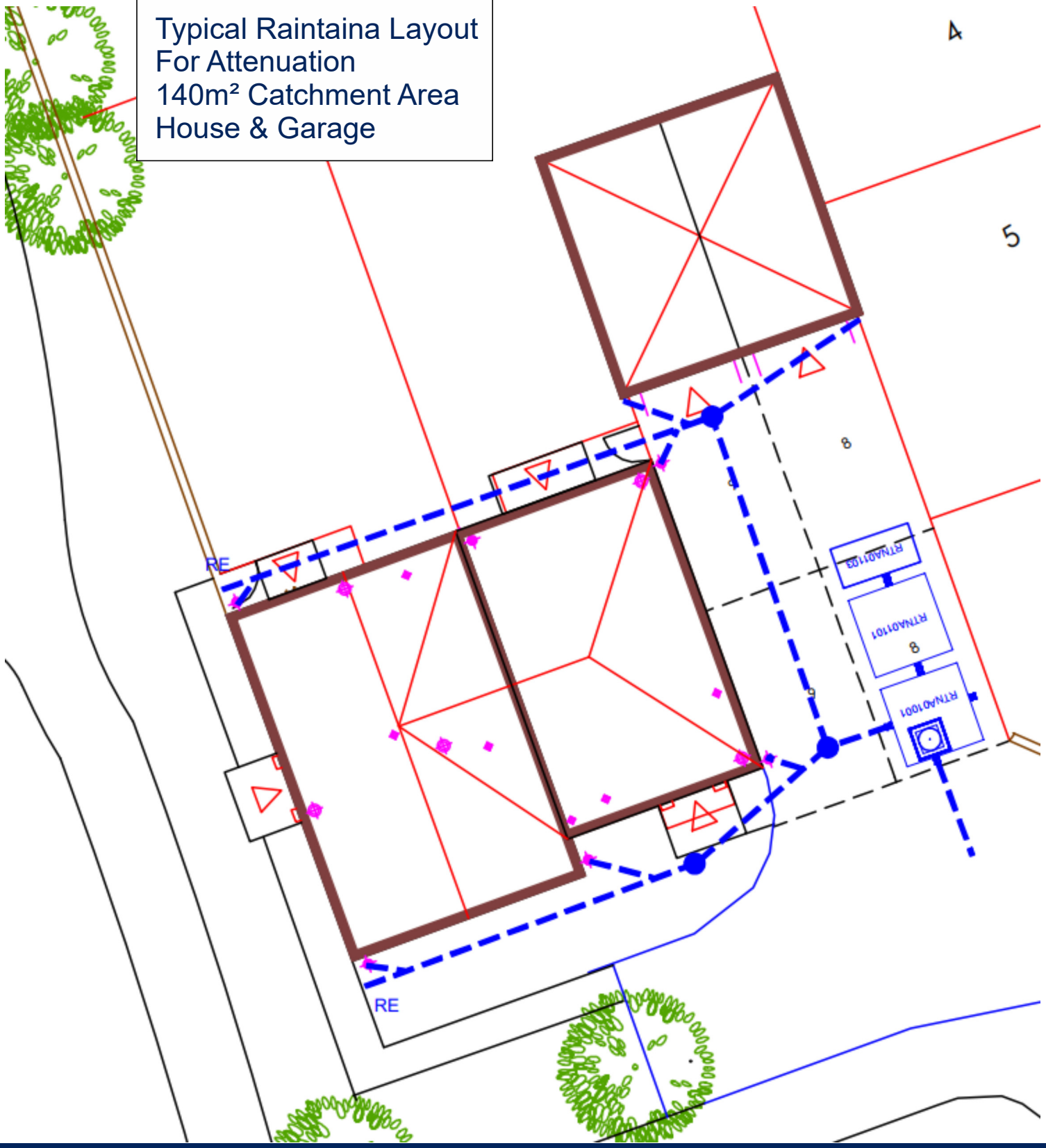
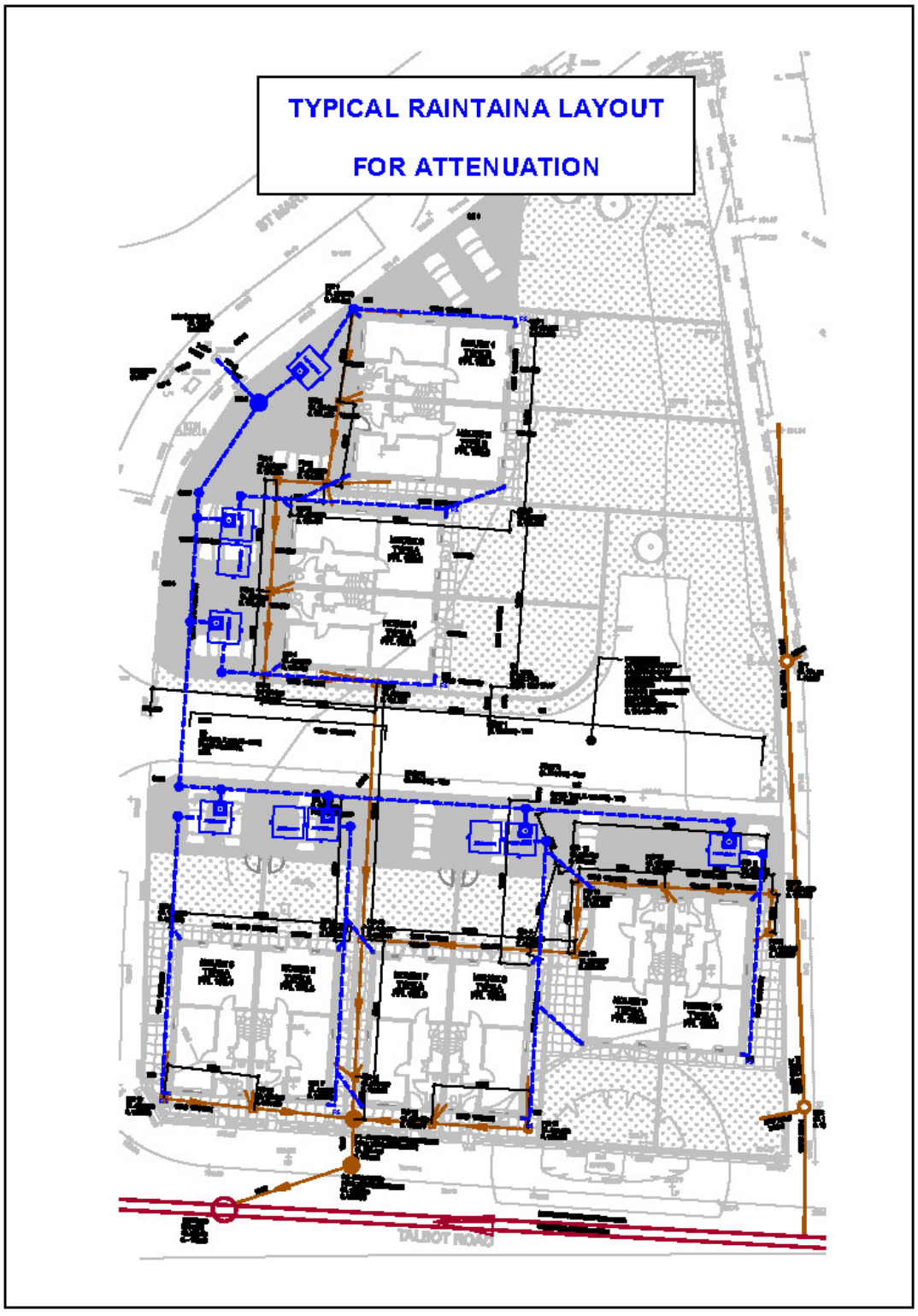
Typical Raintaina Layout
For Attenuation
140m² Catchment Area
House & Garage





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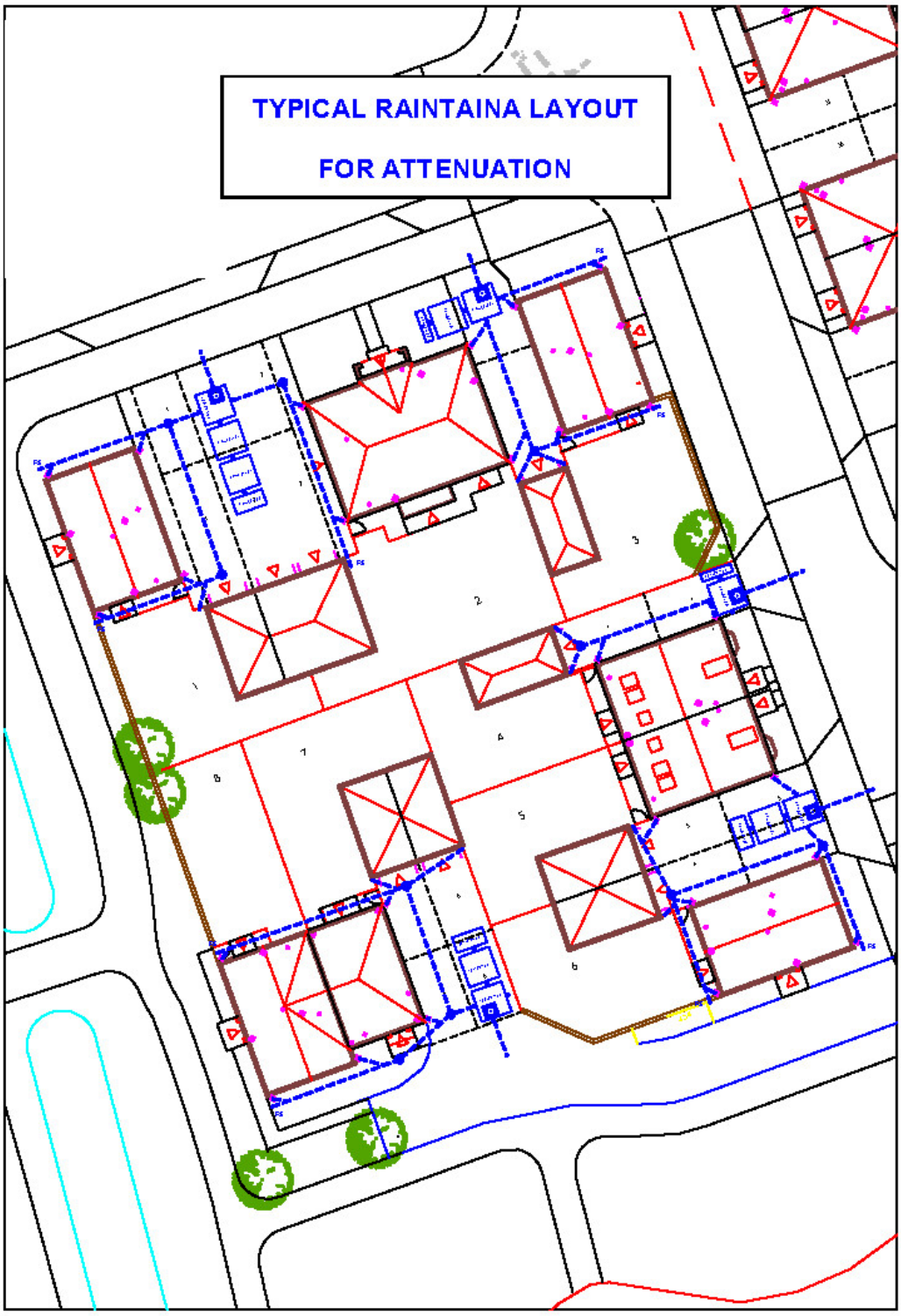

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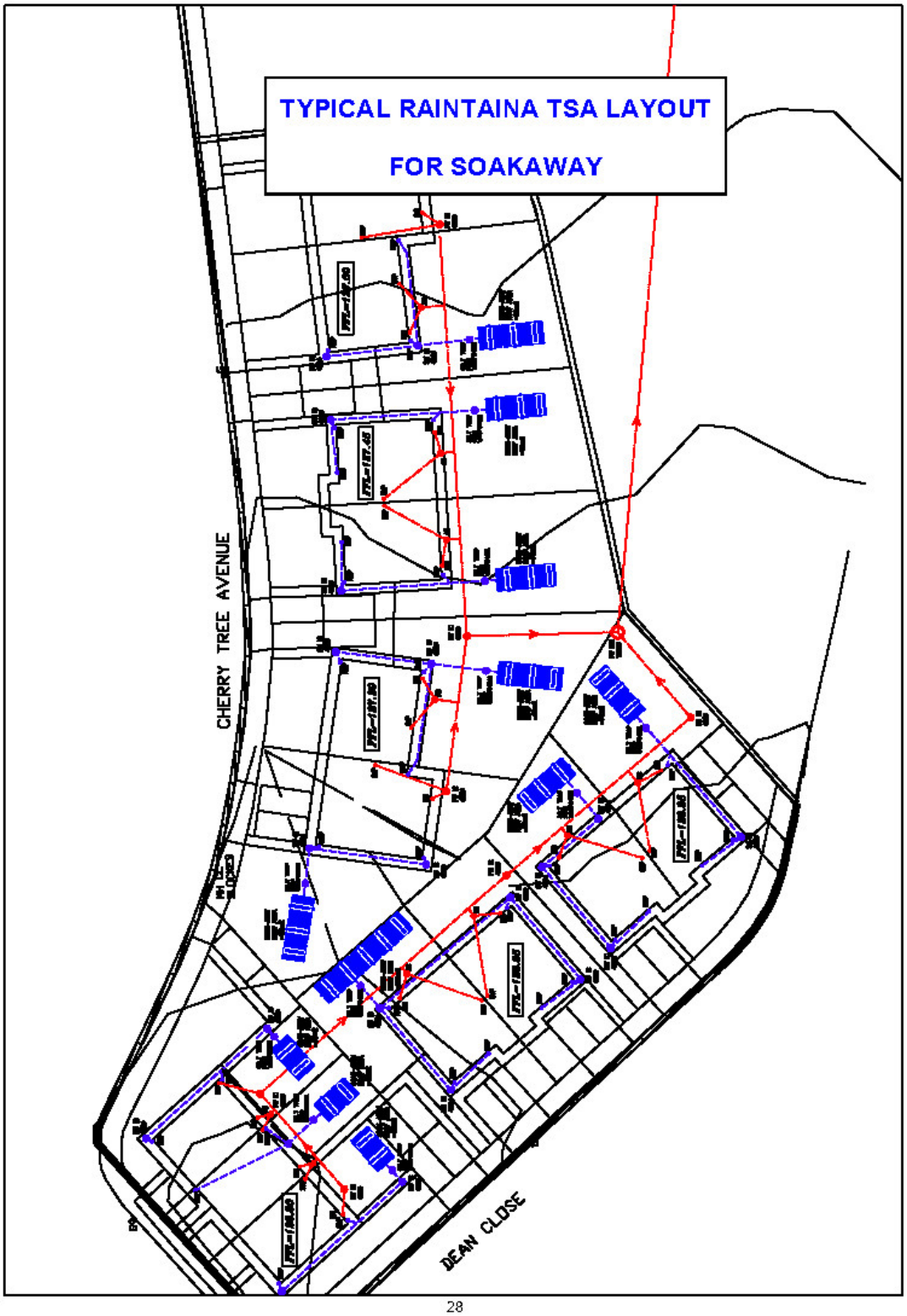
TYPICAL RAINTAINA TSA LAYOUT
FOR SOAKAWAY
CHERRY TREE AVENUE
DEAN CLOSE

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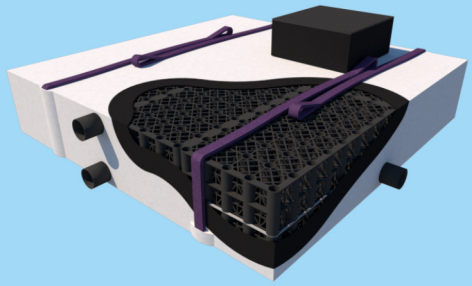
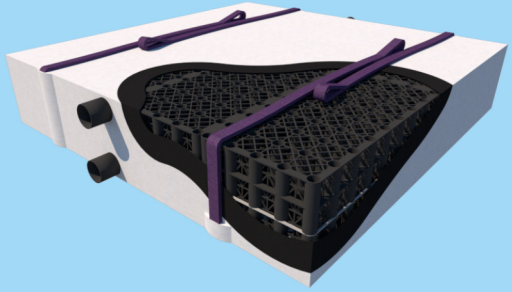
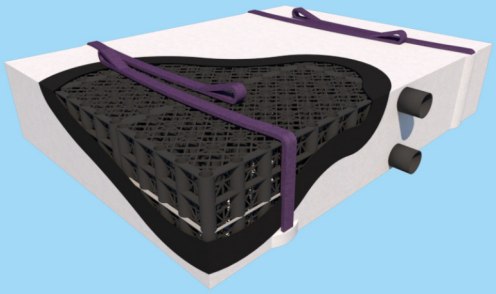
Raintaina for Attenuation



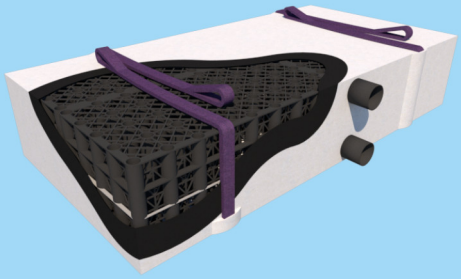
RTNA01001 Raintaina 1.6 FC
2m x 2m x 0.4m deep
with internal flow control chamber
and 1600 litres of storage



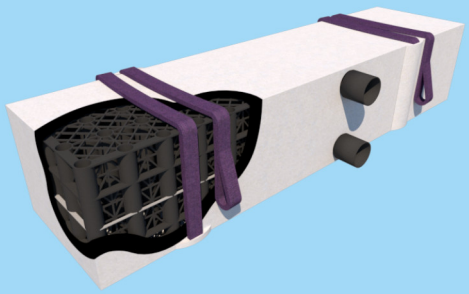
RTNA01101 Raintaina 1.6
2m x 2m x 0.4m deep
with 1600 litres of storage



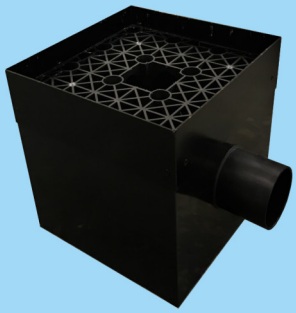
RTNA01102 Raintaina 1.2
2m x 1.5m x 0.4m deep
with 1200 litres of storage



RTNA01103 Raintaina 0.8
2m x 1.0m x 0.4m deep
with 800 litres of storage

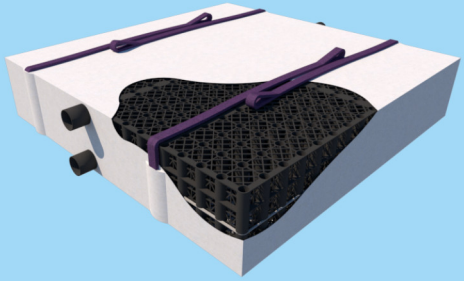


RTNA01104 Raintaina 0.4
2m x 0.5m x 0.4m deep
with 400 litres of storage

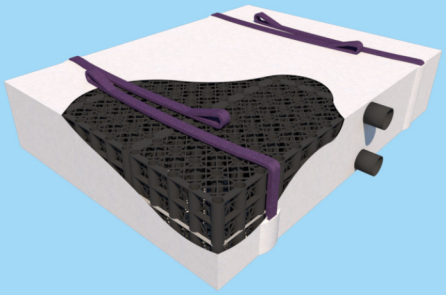


RTNA05001 Raintaina
RWP Base Unit
375mm x 375mm x 341mm deep

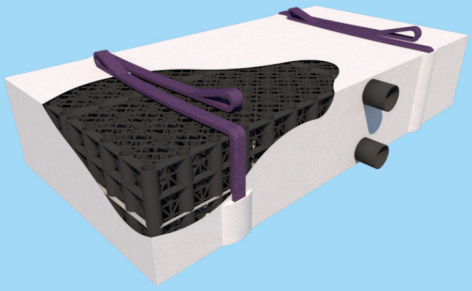
Raintaina for Infiltration



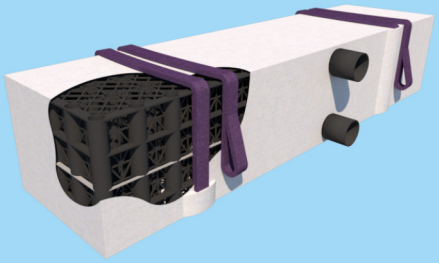
RTNA02101 Raintaina 1.6 TSA
2m x 2m x 0.4m deep
with 1600 litres of storage



RTNA02102 Raintaina 1.2 TSA
2m x 1.5m x 0.4m deep
with 1200 litres of storage

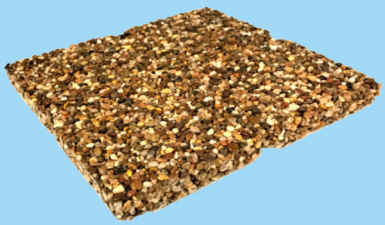


RTNA02103 Raintaina 0.8 TSA
2m x 1.0m x 0.4m deep
with 800 litres of storage



16 RTNA02104 Raintaina 0.4 TSA
2m x 0.5m x 0.4m deep
with 400 litres of storage

RTNA05002 Raintaina
RWP Diffuser Base Unit
361mm x 361mm x 270mm deep



RTNA06001 Raintaina
RWP Filter Cover
Southern Gold Colour
(Other colours available)

Raintaina

Pre-formed, fully sealed attenuation module with integrated flow control. Developed as a 'within curtilage' SuDS solution.

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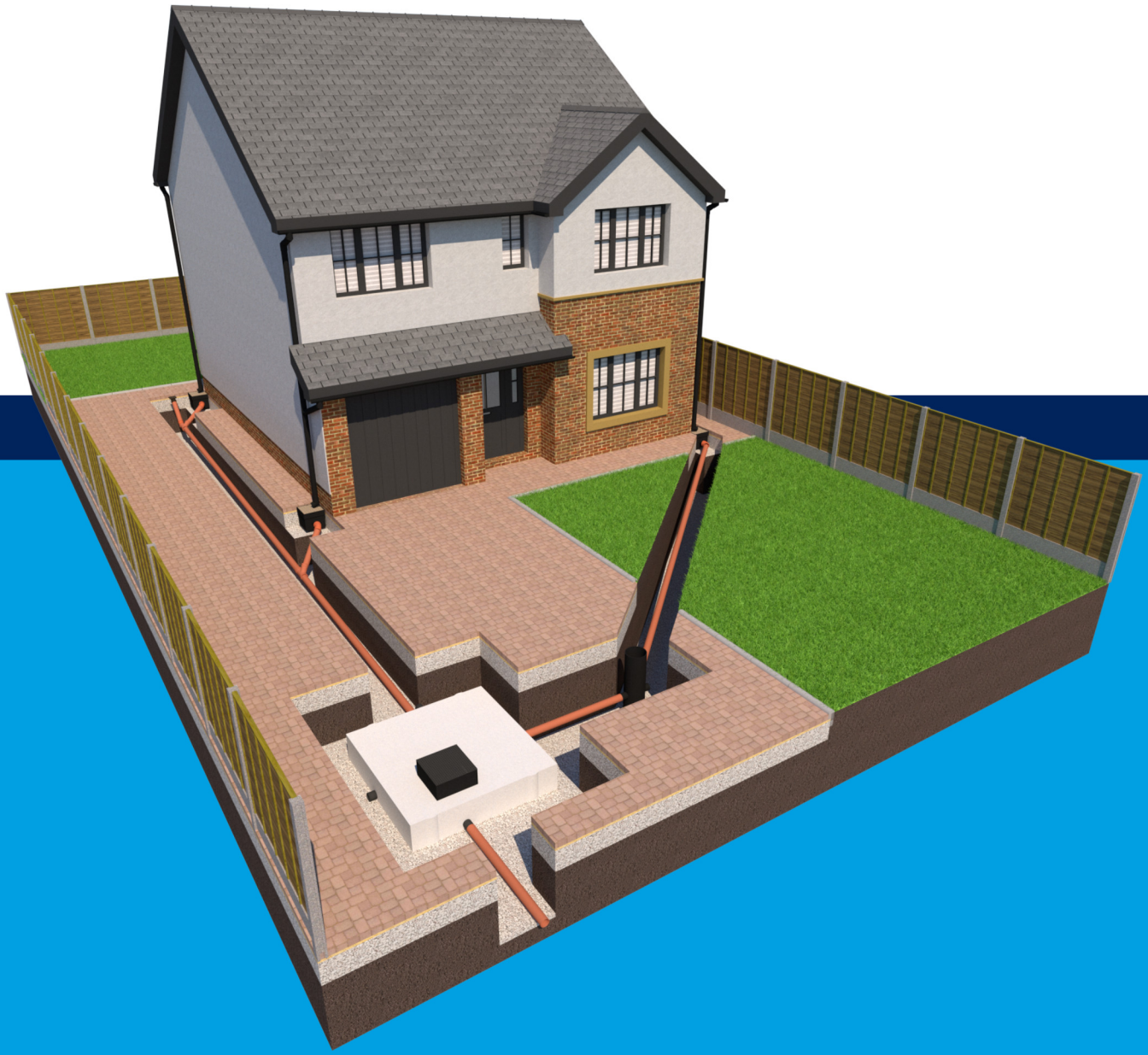

Combined Attenuation & Flow Control

www.raintaina.co.uk