

This presentation premiered at WaterSmart Innovations

watersmartinnovations.com



Watersmart 08

The German Model

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Rainwater Utilization & Benefits



The German Model



RAINWATERHARVESTING

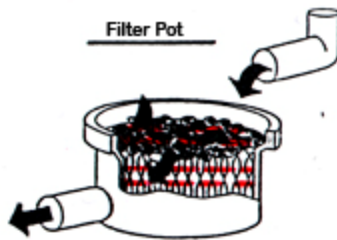
*The most natural resource -
directly from nature*



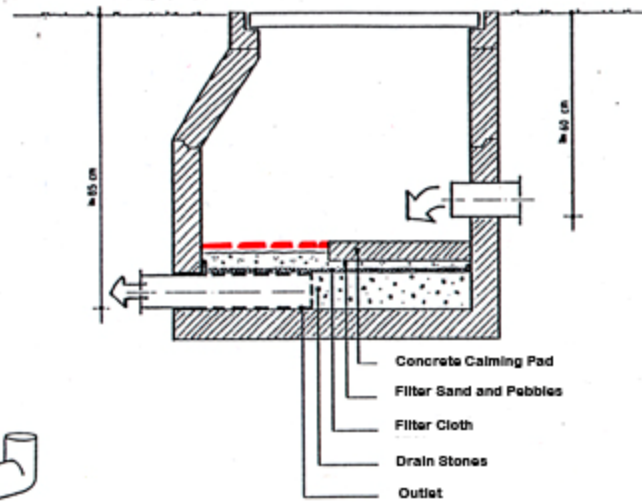
Basic filter design types. "First flush" type filters never "filter".

Marketplace Filter Systems

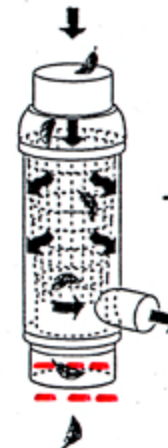
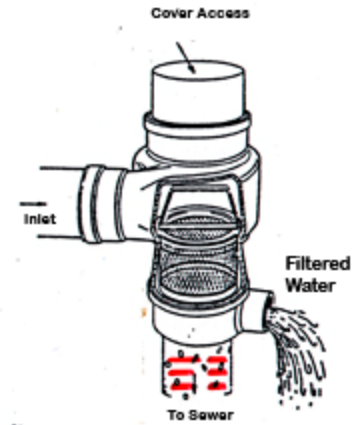
Downpipe with Shutter



Filter Basin

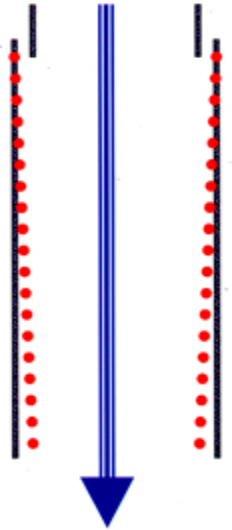


Vortex Fine Filter

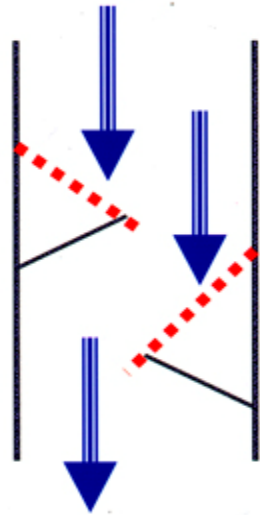


Downspout Filter

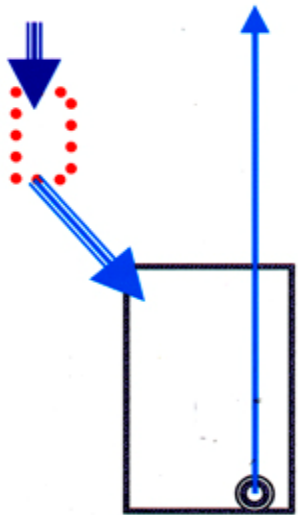
Open Drainage



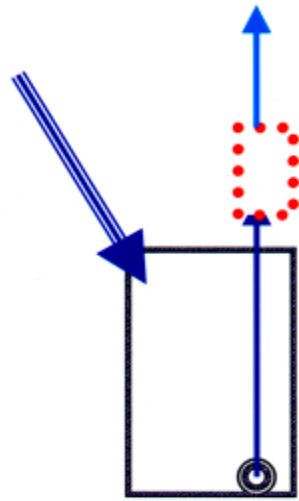
Restricted Drainage



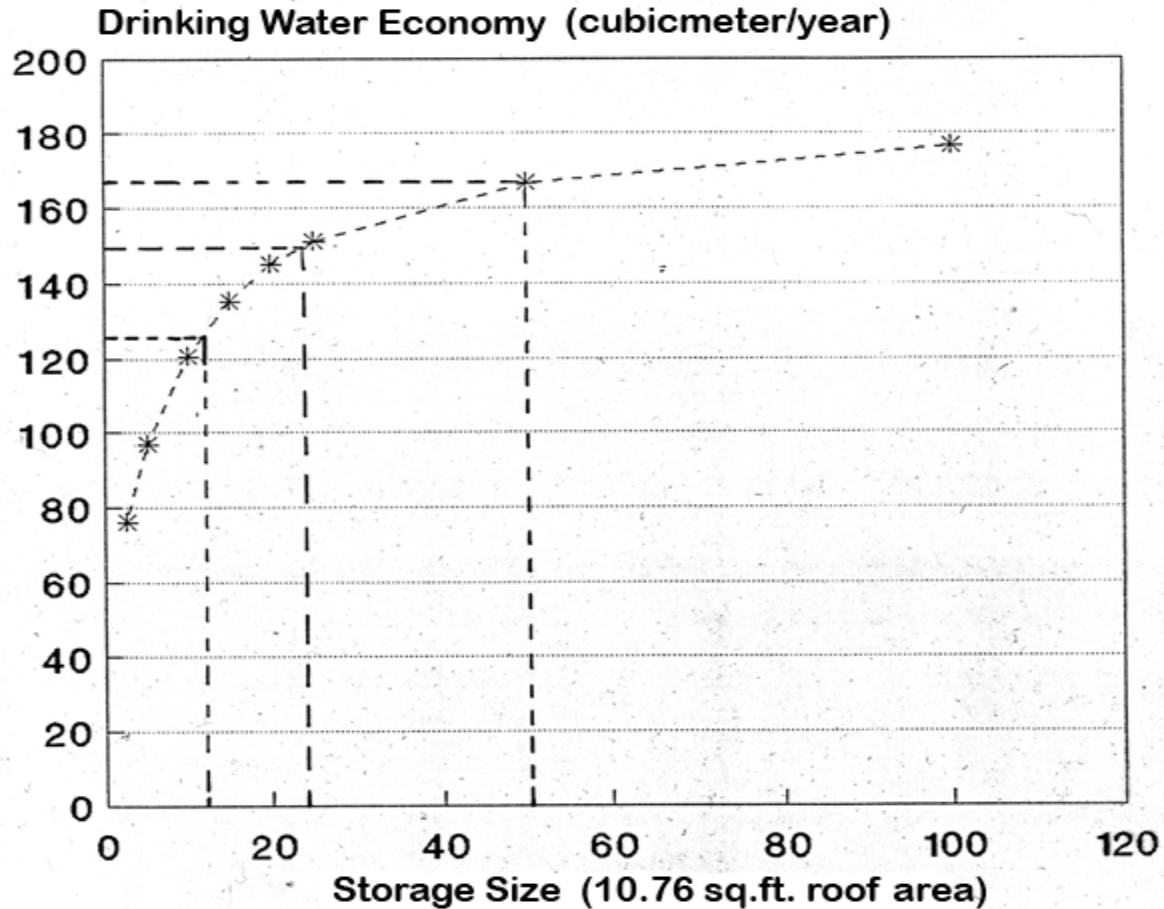
Filter before Storage



Filter after Storage



Drinking Water Economy and Storage Size



--*-- Average rain per year



**Engineering with
nature**

**Experienced in rainwater
harvesting since 1990**

**Leading developer and manufacturer of
rainwater filters and rainwater
harvesting systems**



**Worldwide unique self-cleaning filter
systems for a better water quality**

Rainfilters of Texas, LLC
PO Box 203113 Austin, TX 78720-3113 • 512 257-7986

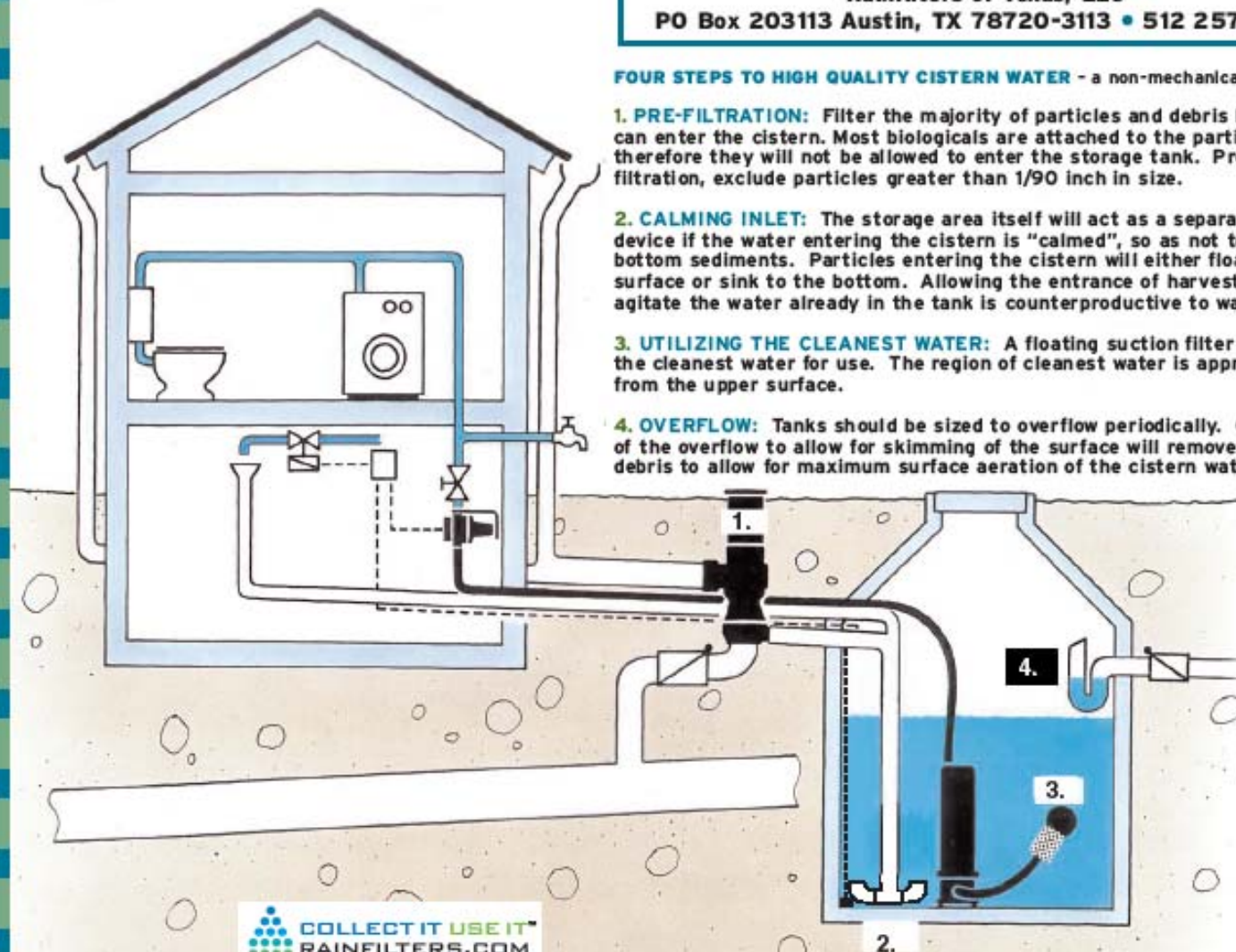
FOUR STEPS TO HIGH QUALITY CISTERN WATER - a non-mechanical process

1. PRE-FILTRATION: Filter the majority of particles and debris before they can enter the cistern. Most biologicals are attached to the particles and therefore they will not be allowed to enter the storage tank. Preferable filtration, exclude particles greater than 1/90 inch in size.

2. CALMING INLET: The storage area itself will act as a separation filtration device if the water entering the cistern is "calmed", so as not to disturb bottom sediments. Particles entering the cistern will either float to the surface or sink to the bottom. Allowing the entrance of harvested water to agitate the water already in the tank is counterproductive to water quality.

3. UTILIZING THE CLEANEST WATER: A floating suction filter will remove the cleanest water for use. The region of cleanest water is approximately 6" from the upper surface.

4. OVERFLOW: Tanks should be sized to overflow periodically. Construction of the overflow to allow for skimming of the surface will remove floating debris to allow for maximum surface aeration of the cistern water.



Properly Constructed Overflow

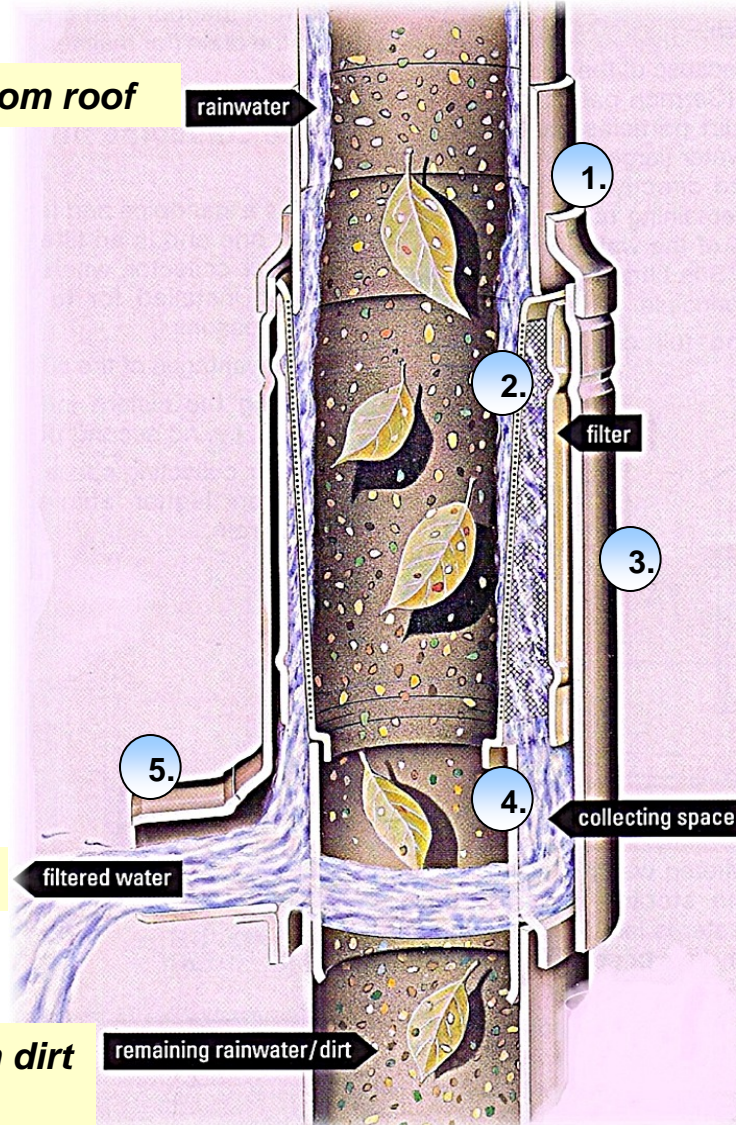


Filter Collector

installed in a downpipe, section view



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Rainwater from roof

rainwater

1.

upper housing

2.

filter insert

3.

Main housing

4.

Collecting space

5.

Filtered water

filtered water

5.

filtered water connection

Rinsing water with dirt and debris

remaining rainwater/dirt

collecting space

filter



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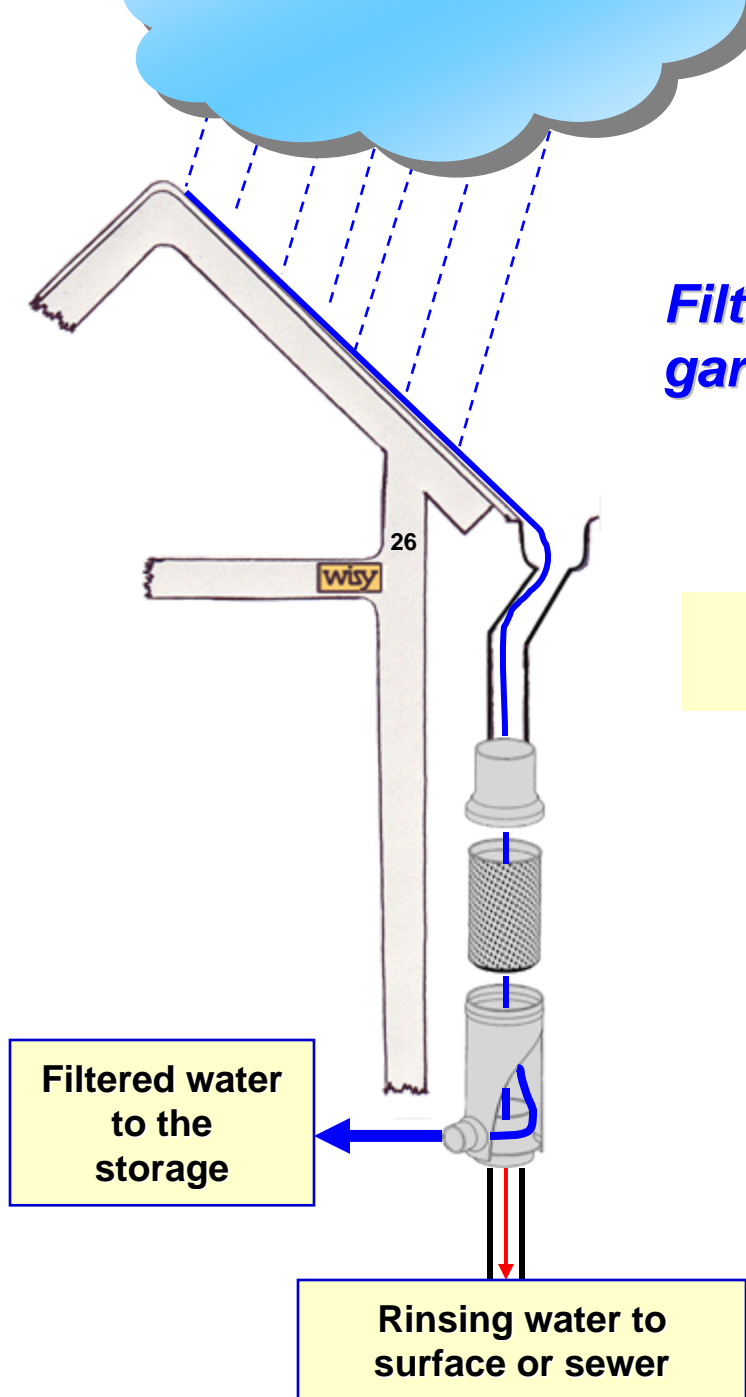
Filtered rainwater for home and garden.

WISY Filter Collectors

Integrated into the downpipes – filters and collects the rainwater

1. Fine filtering 0.28 or 0.44 mm
2. Collects up to 99% of rainwater
3. Self-cleaning, low maintenance
4. Absolutely safe function
5. Easy to fit and to maintain
6. Long life, 100% Recyclable-materials*

* Stainless steel, copper, zinc

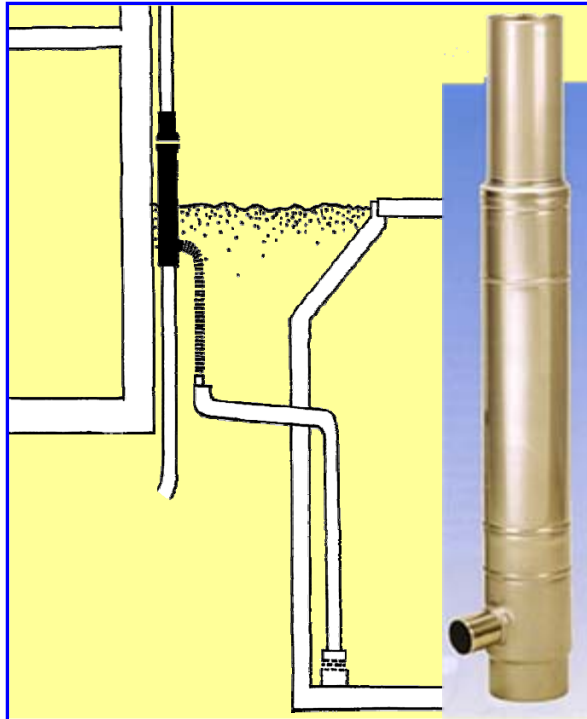


The patented, unique
WISY Filter Collectors



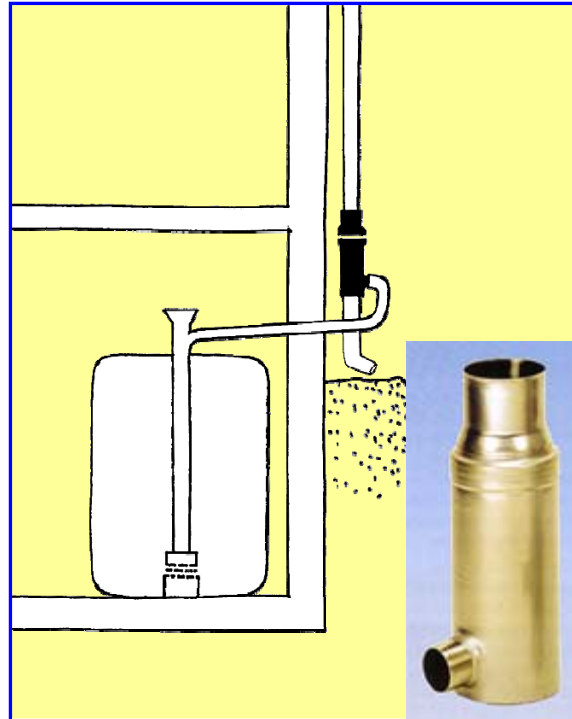
Engineering with nature

available for different styles and sizes of downpipes
 available for all kinds of metal or plastic pipes **



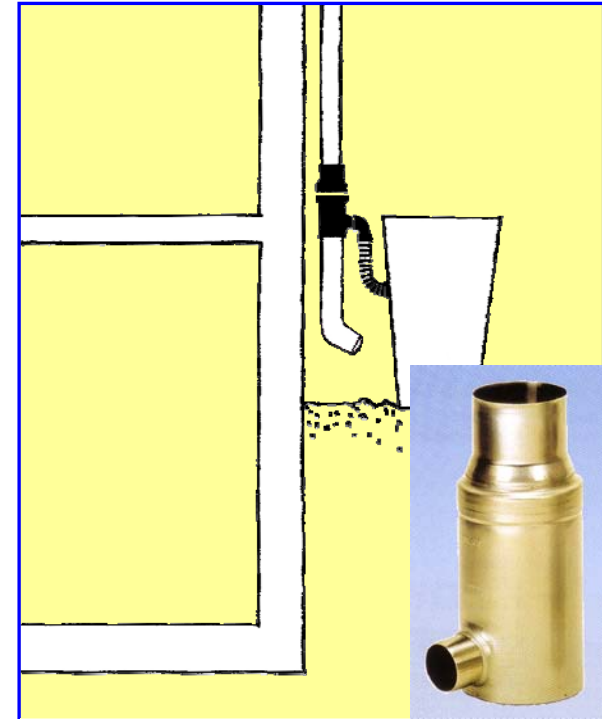
**Standpipe Filter Collector
 STFS**

household + irrigation /
 garden water, up to 2,153 ft² of
 roof surface area *



**Filter Collector
 FS**

household + irrigation /
 garden water, up to 1,614 ft²
 of roof surface area *



**Garden Filter Collector
 GRS**

irrigation / gardening water,
 861 ft² of roof surface area *

** Housing: Stainless steel, copper, zinc

* depends on local average rainfall



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Clean rainwater for residential,
public and commercial buildings

WISY Vortex Fine Filters

integrated into groundpipes - filter and collect the rainwater

1. fine filter sizes 0.28 / 0.38 / 0.44 m
2. Collect up to 99% of rainwater
3. Self-cleaning, low maintenance
4. Absolutely safe function
5. Up to 32,292 ft² for one filter
6. Long life, 100% Recyclable-materials *

* Stainless steel, Polypropylene

Rinsing water to
surface or sewer

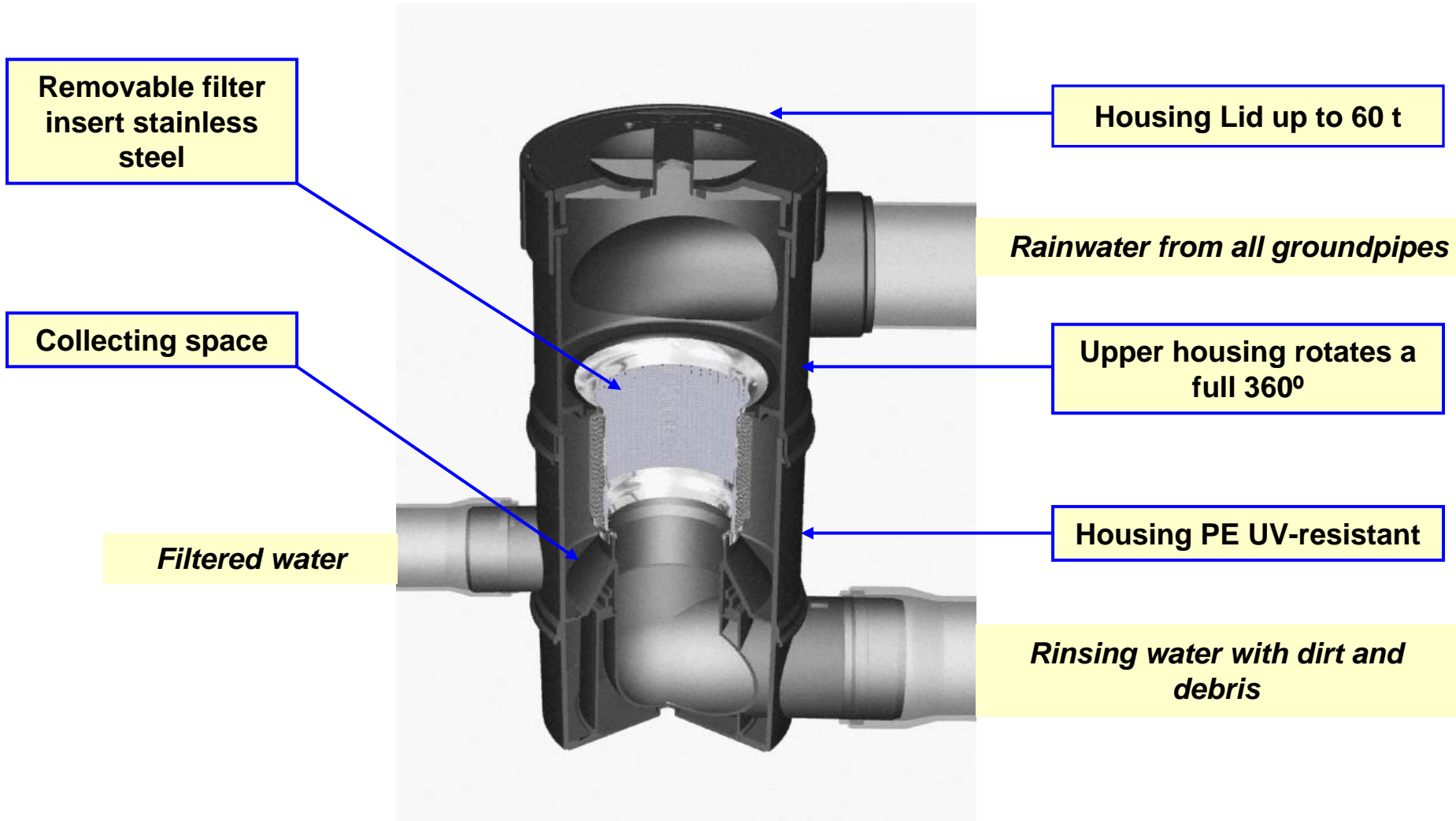
Filtered water
to the storage

Vortex Fine Filter

section and function view



Engineering with nature



The patented
WISY Vortex Fine Filters



Engineering with nature

are available with adapters for different styles, sizes and materials of pipes



ATV-certified
up to **30t**



WFF 100 for roof areas up to **2,153 ft²** *



WFF 150 for roof areas up to **5,382 ft²** *

ATV-certified
up to **60t**



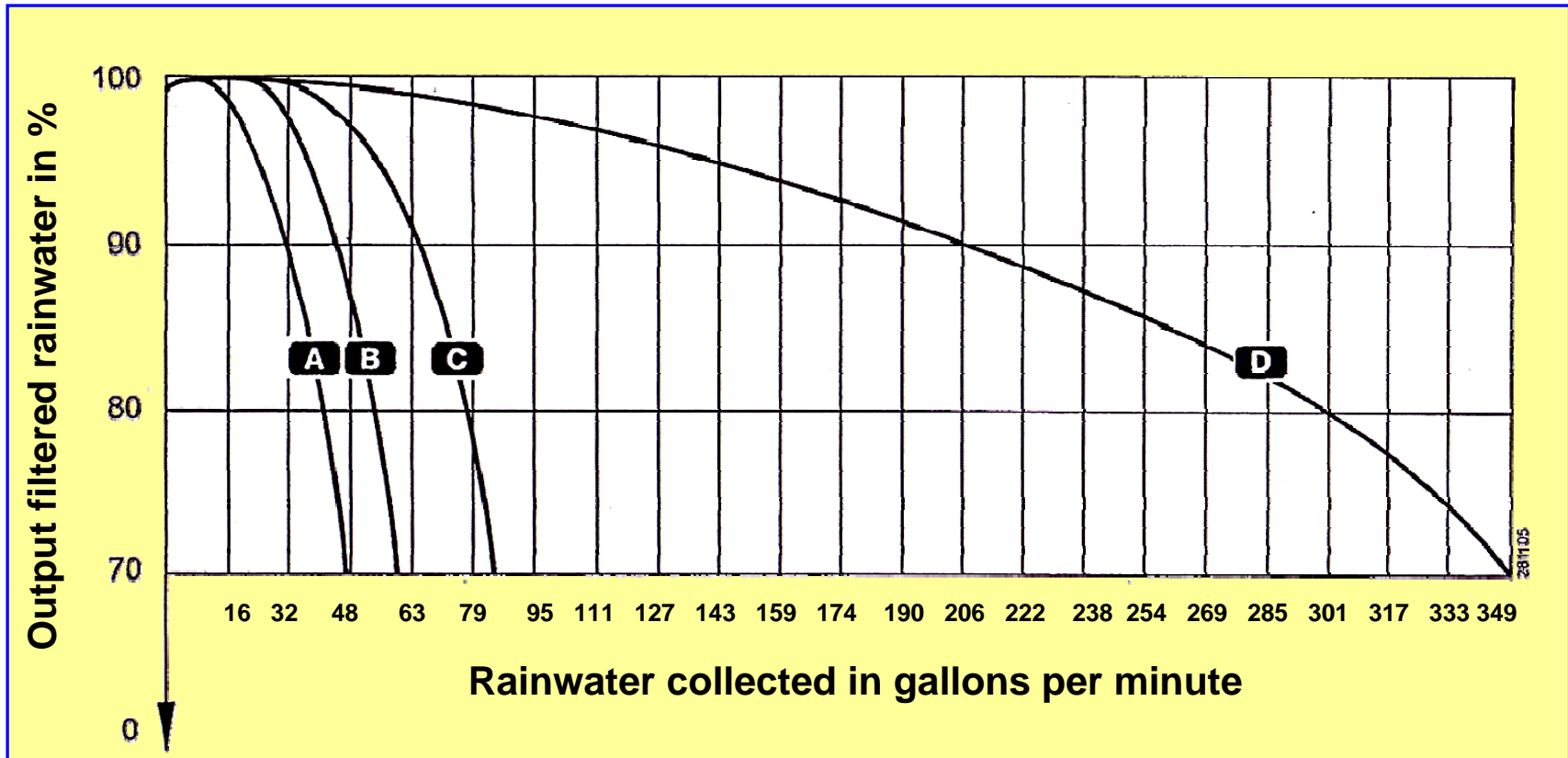
WFF 300 for roof areas up to **31,292 ft²** *

* depending on the average local rainfall

Collecting efficiency of *WISY - Filters*



Engineering with nature



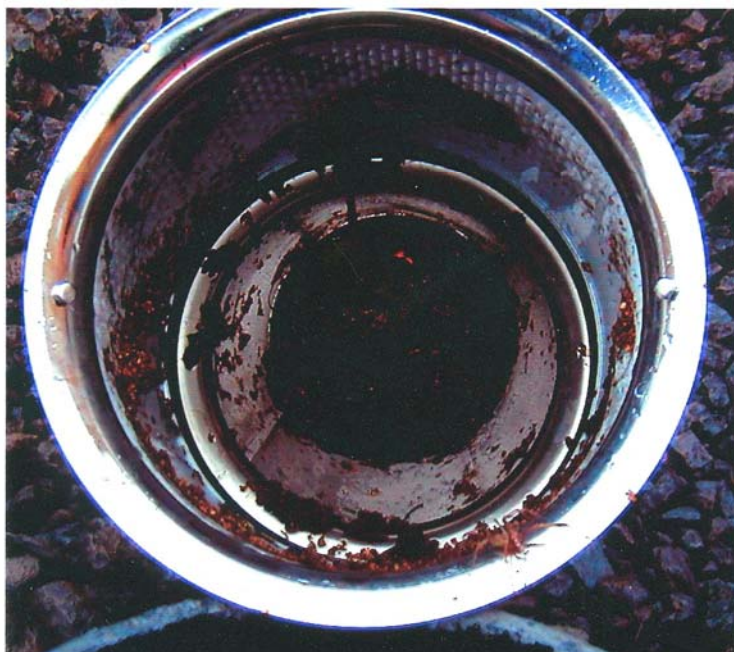
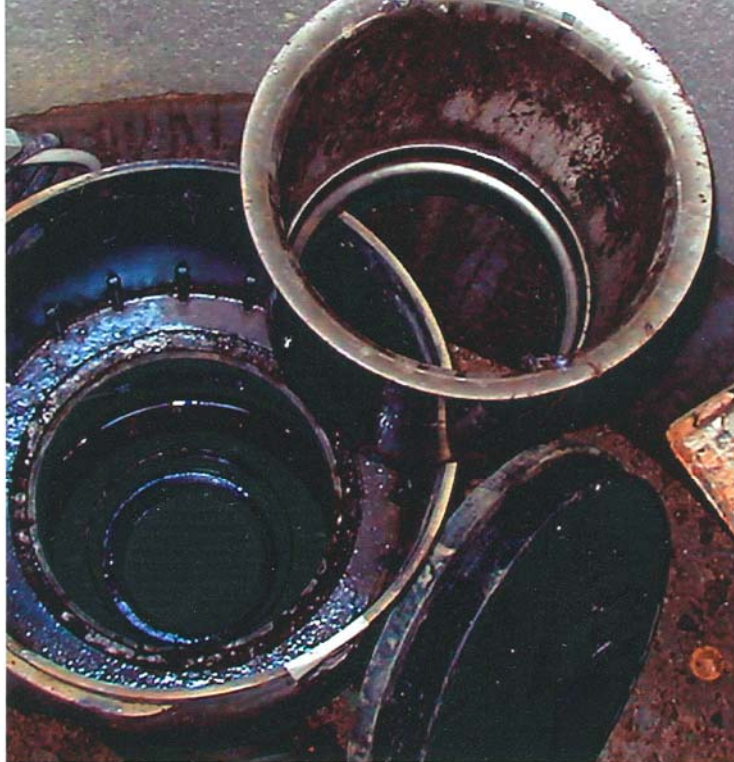
A Filter Collector FS

B Standpipe Filter Collector and
Vortex Fine Filter WFF 100

C Vortex Fine Filter WFF 150

D Vortex Fine Filter WFF 300

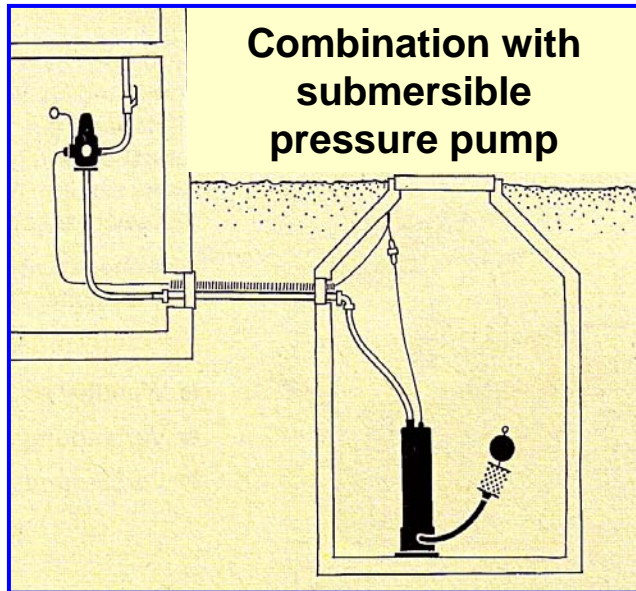
After 3 years, still
70% of original
efficiency



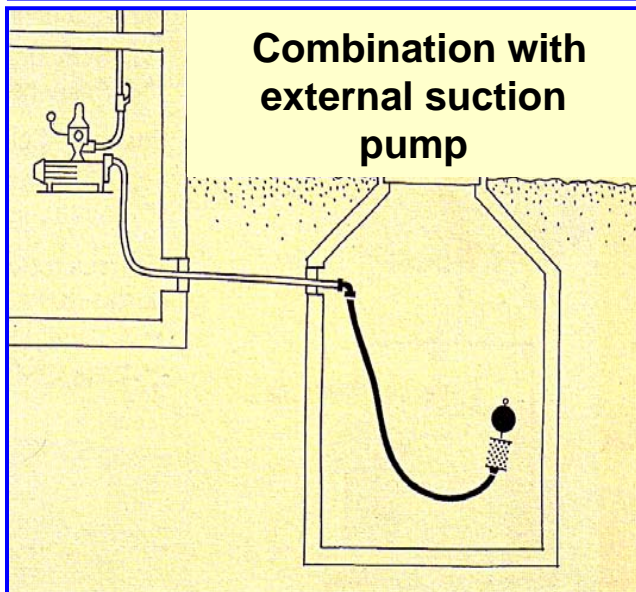
Drawing the cleanest water from the storage
WISY Floating Suction Filters



Engineering with nature



1. Harvesting water from the cleanest storage-zone
2. Fine or coarse filtering
3. Safeguards your pump



4. Low maintenance
5. For cisterns, tanks, ponds, wells

The patented
WISY Floating Suction Filters



Engineering with nature

available with fine or coarse filters, in different sizes
with different hose connections also connectable to
WISY's flexible hoses

Floating Suction **Fine** Filter

S A F F



normal size



Up to 2" intake

Floating Suction **Coarse** Filter

S A G F



for pre-filtered
water

Best practice
WISY Vortex Fine Filters



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Residential building, 6 persons – Hammerbach
Germany, 1,938 ft² of roof area

1 x WFF 100; Toilets / laundry / garden



City- and sports-hall, 2,000 persons
Altenstadt, Germany, 26,910 ft² of roof
area - **4 x WFF 150;** Toilets / irrigation



Monastery with church, 80 persons
Engelthal, Germany; 12,917 ft² of roof area

1 x WFF 300 + 1 x WFF 150; Toilets / garden



German Industry Lobby, 1,000 persons
Berlin, Germany, 43,056 ft² of roof

2 x WFF 300; Toilets / fire-fighting / irrigation







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