BACFREE®

RAINWATER HARVESTING SYSTEM

PRODUCT BOOKLET &
TECHNICAL SPECIFICATIONS

COMPANY PROFILE

BACFREE®

Water Solutions Transforming Lives

BACFREE® was established in 1982 by Mr Chee Sze Hsien as the pioneer distributor of potable water filters with proven British Technology. Today, we are the premier water filtration service and system provider in the region. Our expertise involves design engineering and consultation in water and wastewater solutions for domestic, commercial and industrial applications. Continuous technological development, innovative products and commitment to customer satisfaction are the cornerstones that distinguish BACFREE® in the industry.

Water & Wastewater Solutions

- Water filtration
- Water treatment
- Disinfection
- Rainwater Harvesting

Water is our passion

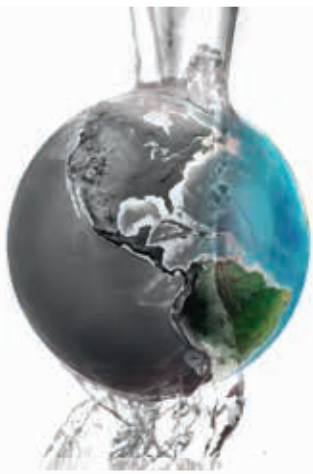
- We provide our customers with ***Innovative*** and ***Sustainable Water Solutions.***
- Continuously, we are adopting ***Industry Best Practices*** to ensure ***Operational Excellence.***
- We improve the well-being of our employees through ***Continuous Talent Development.***

What can you expect from doing business with BACFREE® ? Experience our core values :

B eing Passionate
A ccountability
C ustomer focused
F orward Thinking
R espect & Teamwork
E xcellence in Performance
E thical Business Practices

Our Vision :

BACFREE® will become the leader in Water Solutions for South East Asia.



BACFREE® is the ***sole distributor in Malaysia*** for rainwater harvesting products manufactured by ***the German industry leader WISY AG.*** Additionally, we are the first water filtration company to achieve ISO 9001:2009 under SIRIM/United Kingdom Accreditation Service (UKAS). Our customers not only benefit from the ***Quality, Durability and Reliability*** of our products but also from ***over 35 years of experience*** in the water and wastewater solutions industry.

SYSTEM PARTNERS

Rainwater Harvesting Systems – German Engineering at its finest

WISY ***AG Germany*** has its company headquarters in Hitzkirchen, a small town surrounded by meadows and forest within the boundaries of the Vogelsberg nature recreation area in Hesse, Germany. The company was founded in 1989 by Norbert Winkler ***(WISY – Winkler Systems)***, who laid the foundation for the emergence of rainwater harvesting by inventing and patenting the filter collector with the unique filtration technique.

Norbert Winkler, founder of Wisy AG

Ever since, the company has undergone tremendous growth and transformation continuously and has strengthened the position as the ***leading manufacturer of high quality rainwater harvesting products*** and accessories in the world with partners in over 40 countries.

The ***unique filtration concept*** of the filter collector with a vertical filter mesh ensures efficient cleaning and collection of rainwater. Due to its unique design and construction, it operates easily and cannot be blocked at any time. Beside the filter collector system, WISY AG provides nowadays also a ***large range of system components for rainwater harvesting systems*** of varying size and areas of applications.

Quality, Durability & Reliability – for these attributes the German company is well appreciated by their customers all over the world:

Throughout his lifetime, Norbert Winkler had a deep passion and interest in environmental protection. Driven by this passion, WISY became not only a manufacturer of ***innovative rainwater harvesting products*** but also one of the ***pioneer and industry leaders*** of the rainwater harvesting industry in Germany and Europe.

Over the years, WISY AG has contributed tremendously towards the ***formulation of the German and European Guidelines*** for the promotion and implementation of rainwater harvesting systems which has provided an impetus for the rapid adoption of rainwater harvesting systems as an integral part of housing design across Germany and Europe. Moreover, the company is ***a founding member of the German Rainwater Association.***

TABLE OF CONTENT

RAINWATER HARVESTING

Why Rainwater Harvesting?

We can no longer assume that there is an endless supply of water even in a country with high average annual rainfall like Malaysia, especially when taking into account:

Global Warming

Change In Weather Patterns

Increasing Water Consumption

Therefore, we have to find new ways of how to reduce, reuse and retain water. This is where rainwater harvesting and recycling comes into the picture.

Advantages of Rainwater

Rainwater harvesting systems allow us to achieve a sustainable future with a better environment. Collected and filtered rainwater can be safely used for e.g.:

Toilet Flushing & Urinals

Irrigation

Laundry Washing

Vehicle Washing & General Cleaning

Livestock Breeding & Farming

Industrial & Commercial Application

When substituting municipal water with rainwater for non-potable usage the amount of municipal water used can decrease by

up to 50% ⬇

and by this, the water bill is reduced greatly with the usage of rainwater. Moreover, a rainwater harvesting system is a good form of water supply during water rationing or interruption of water supply. By harvesting rainwater, chances of flash flood are reduced as rainwater run-off and thus the system can be formed as part of the rainwater management scheme.

Catchment Areas

Rainwater can be harvested from:

Roof Areas

Podium

Surface Runoff

The catchment area is very dependable on the usage of harvested rainwater and also the local council's requirements. The quality of harvested rainwater is affected by the catchment area as well. Rainwater harvested from roof catchment will be of higher quality compared to surface run-off, due to lower human activity.

Rainwater Harvesting with WISY Products – Made in Germany

Our German system partner WISY is the pioneer and one of the leading suppliers of rainwater harvesting systems. The beauty of WISY's system is that it emphasizes on minimal and optional maintenance, minimal or no power consumption and efficient rainwater collection and management by using the ***BACFREE® WISY 4-Step Rainwater Harvesting System.***

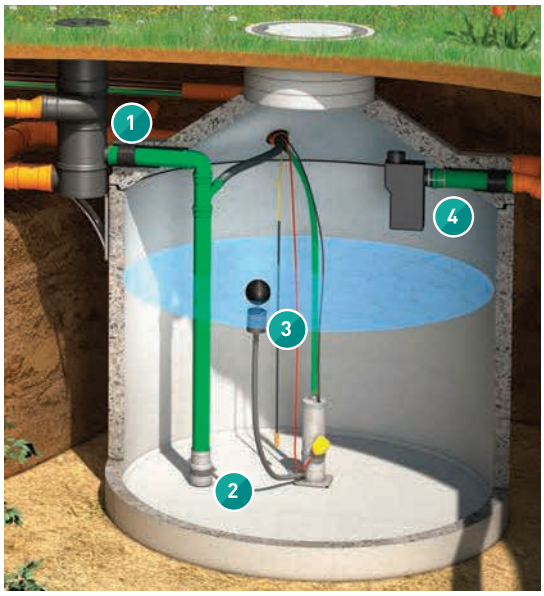
4-STEP RAINWATER HARVESTING SYSTEM

Why using a 4-Step Rainwater Harvesting System?

The **BACFREE® WISY 4-Step Rainwater Harvesting System** ensures that your rainwater is clean enough to store. By using the 4-step system you will:

- Reduce the amount of particulates that enters the rainwater tank and as a result
- Prolong the life of your pump and filtration equipment
- Oxygenate the water to inhibit growth of anaerobic bacteria
- Create a higher and better water quality for your system
- Ensure a calmed inflow and distribution of the water without re-suspending sediments
- Prevent formation of a surface barrier layer and therefore ensure optimum exchange of oxygen between air and water
- Extract clear rainwater from the cleanest water layer
- Eliminate the need to clean debris from your tank
- Minimize system maintenance due to unique pre-filtration technique

"Only four easy steps to keep your rainwater clean for a long time"



How does it work?

1 STEP 1: PRE-TANK FILTRATION

During the first step of the filtration process up to 90 % of rainwater is filtered and diverted to the rainwater tank. The remaining 10 % are used to ensure the self-cleaning effect of the filter. WISY filters operate as a first flush device, directing leaves, dirt and debris to drainage or On-Site Detention tank (OSD). Therefore, large particulates are removed. Due to the increasing oxygen saturation during the filtration process, the amount of harmful bacteria in the rainwater tank is greatly reduced.

Diversion & Filtration | 90 % Efficiency | First Flush | Self-Cleaning | Oxygenation | Remove Particulates larger than 0.28 mm

2 STEP 2: SMOOTHED INFLOW & DISTRIBUTION

While filtration removes most of the sediments, a small quantity will settle at the bottom of the tank. This biofilm layer is beneficial for the tank since it removes additional bacteria and metals from the water. The smoothing inlet is designed to direct incoming water upwards. This prevents rainwater from stirring up the healthy biofilm layer and also ensures the distribution of oxygen-rich water throughout the tank.

Calmed Inflow | Maintain Healthy Biofilm Layer | Even Oxygen Distribution

3 STEP 3: FLOATING SUCTION FILTER

The floating suction filter ensures the intake of the cleanest water from just below the water surface.

Extract water from cleanest layer

4 STEP 4: MULTISIPHON OVERFLOW

By skimming floating particulates on the surface of the water the multisiphon prevents the formation of a surface barrier layer and ensures an optimum exchange of oxygen between air and water.

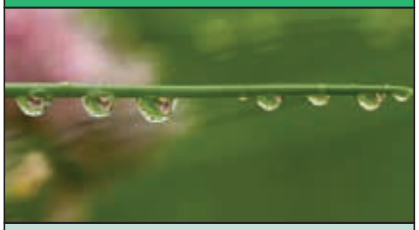
Skimming-Effect | Ensure Oxygen Exchange | Backflow Prevention | Vermin guard | Odour Seal

UNIQUE FILTRATION TECHNIQUE

A vertical filter mesh – How does that work?

The **WISY filter collector** has an almost vertical stainless steel filter mesh and maintains the cross-sectional diameter of the rainwater downpipe. But how is it possible to **collect up to 90 %** of the rainwater using such a construction? By using the **unique filtration technique –** invented and patented by WISY and applied for more than 28 years in over half a million rainwater filters. The filtration technique utilizes the natural forces that are applied to water **– Adhesion, Cohesion & Gravity.**

Adhesion



Adhesion : Water is attracted to other substances. Adhesion is the stickiness that water molecules have for other substances. As in the picture, water sticks to the plant although gravity is pulling it down.

Cohesion

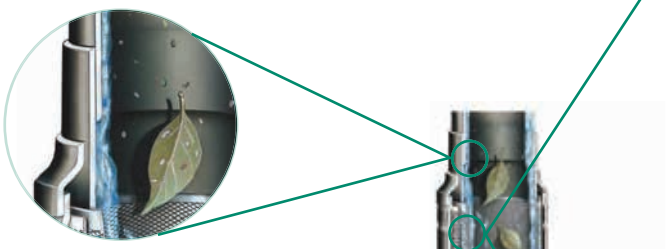
Cohesion : Water is attracted to water. Cohesion is the stickiness that water molecules have for each other. Only due to cohesion, water forms into waterdrops.

Gravity

$$F = G \frac{m_1 \times m_2}{d^2}$$

Gravity : Force by which a planet or other body draws objects towards its centre. As Isaac Newton once discovered, an apple will always fall down due to gravity. The same phenomenon applies for all things on earth – water included.

How can we utilize these natural forces for our unique filtration technique?



1 Due to ***Adhesion*** the water sticks to the inner surface of the tube. Solids do not behave this way, they just fall straight down.

= Adhesion
= Cohesion
↓ = Gravity

stainless steel behind filter mesh

filter mesh

2 Adhesion

Since the water is attracted to the stainless steel behind the filter mesh ***(Adhesion)***, the water gets drawn through the filter mesh.

3 Cohesion & Gravity

As soon as the first water drops passed the filter mesh, these drops attract others which have not passed the mesh. ***Cohesion*** starts to apply and more water is drawn through the filter mesh. As in the entire process, ***Gravity*** directs the water downwards.

↓

Rainwater Harvesting System – Standards & Guidelines

The implementation of a rainwater harvesting system is **compulsory for all new constructions in Malaysia**. When implementing a rainwater harvesting system, commonly known international standards like DIN 1981-1:2001-10 (EU/Germany) or BS 8515:2009 (Great Britain) advise to incorporate filtration and treatment of the collected rainwater before it enters the main body of the storage tank. As the BSI British standards states, the filter system should include a filter which is **water and weather resistant**, is **removable** and **readily accessible for maintenance** purposes, has an **efficiency of at least 90 %** and passes a maximum **particle size of < 1.25 mm**. Furthermore, the storage tank should be fitted with a **calmed inlet** and a **floating extraction** 100 mm – 150 mm below the surface of the water should be used.
By using the **BACFREE® WISY 4-Step Rainwater Harvesting System** that relies on the **unique filtration technique of the WISY filter**, all of the above mentioned requirements are not only fulfilled but more over exceeded. Also local guidelines such as DID/NRE, MSMA, KPKT and DBKL will be fulfilled by using the 4-step system and the WISY filter technique.

BACFREE WISY PRODUCT DESIGN GUIDELINES

Based on Rainwater Downpipe Size	Rainwater Filter Collector & Fine Filter					
	GRS	FS	FS-P	WFF100	WFF150	WFF300
Residential landed projects (Terrace, Superlink, Semi-D, Bungalow etc.)						
ø100mm rainwater downpipe (Vertical)	●	●	●			
ø100mm rainwater downpipe (Horizontal)				●		
ø150mm rainwater downpipe (Vertical / Horizontal)					●	
Commercial / Industrial projects (Condominium, Office Tower, Factory etc.)						
ø100mm rainwater downpipe (Vertical)	●	●	●			
ø100mm rainwater downpipe (Horizontal)				●		
ø150mm rainwater downpipe (Horizontal)					●	
ø200mm rainwater downpipe (Horizontal)					●	●
ø300mm rainwater downpipe (Horizontal)					●	●

Based on Catchment Area	Rainwater Filter Collector & Fine Filter					
	GRS	FS	FS-P	WFF100	WFF150	WFF300
Residential landed projects (Terrace, Superlink, Semi-D, Bungalow etc.)						
⩽100m² Roof area	●	●	●	●		
⩾300m² Roof area					●	
Commercial / Industrial projects (Condominium, Office Tower, Factory etc.)						
⩽100m² Roof area				●		
⩾300m² Roof area					●	
⩾1,750m² Roof area					●	●

Note:
- System design guideline above applies only for conventional rainwater downpipe projects.
- For any projects with the following criteria, please contact BACFREE:
  - Kuala Lumpur projects (under DBKL municipal council)
  - Syphonic rainwater downpipe projects
  - GBI certified projects

STEP 1 : RAINWATER FILTER COLLECTOR (RESIDENTIAL)

Model		FS First flush rainwater filter collector	GRS First flush rainwater filter collector	FS-P First flush rainwater filter collector
Model code		FS	GRS	FS-P
Material	Body	SUS304 stainless steel	SUS304 stainless steel	Polyethylene (PE)
	Cover	SUS304 stainless steel	SUS304 stainless steel	Polyethylene (PE)
	Mesh	SUS304 stainless steel	SUS304 stainless steel	SUS304 stainless steel
Dimension	Size (mm)	ø100 x 352 (H)	ø100 x 335mm (H)	ø100 x 335 (H)
	Inlet (mm)	ø100	ø100	ø100
	Outlet (mm)	ø50	ø50	ø50
	Drain (mm)	ø100	ø100	ø100
Capacity	Flow rate (L/s)	6.0	6.0	6.0
	Velocity (M/s)	0.7	0.7	0.7
	Efficiency (%)	≥80	≥80	≥80
	Filtration size	0.28mm	0.44mm	0.28mm
Country of origin		Germany	Germany	Germany
Features		• Stainless steel construction – corrosion resistant • Dual function – filter & first flush • 0.28mm vertical filtration provides effective separation of collected rainwater from sediment, leaves, moss & insects • Fine filtration prevents mosquito breeding • Maintains full cross section of downpipe – no obstruction of rainwater flow • Low maintenance – once every 4 - 6 months • Fully mechanical – no energy consumption • Can be easily connected to round or other type of rainwater downpipe • Include customized DN50 outlet connection adapter	• Stainless steel construction – corrosion resistant • Dual function – filter & first flush • 0.44mm vertical filtration provides effective separation of collected rainwater from sediment, leaves, moss & insects • Fine filtration prevents mosquito breeding • Maintains full cross section of downpipe – no obstruction of rainwater flow • Low maintenance – once every 4 - 6 months • Fully mechanical – no energy consumption • Can be easily connected to round or other type of rainwater downpipe • Include customized DN50 outlet connection adapter	• Polyethylene (PE) construction – matches downpipe colour • Dual function – filter & first flush • 0.28mm vertical filtration provides effective separation of collected rainwater from sediment, leaves, moss & insects • Fine filtration prevents mosquito breeding • Maintains full cross section of downpipe – no obstruction of rainwater flow • Low maintenance – once every 4 - 6 months • Fully mechanical – no energy consumption • Can be easily connected to round or other type of rainwater downpipe • Include customized DN50 outlet connection adapter

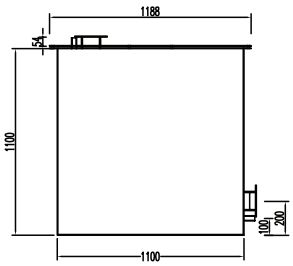
STEP 1 : RAINWATER FINE FILTER (COMMERCIAL / INDUSTRIAL)

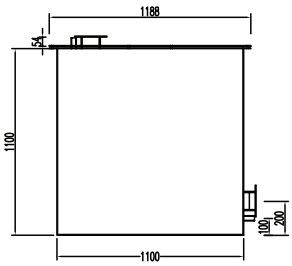
Model		Vortex WFF300	Vortex WFF300 (short)
Model code		WFF300	WFF300SH
Material	Body	Polypropylene (PP)	Polypropylene (PP)
	Cover	Plastic / Steel	Plastic / Steel
	Mesh	SUS304 stainless steel	SUS304 stainless steel
Dimension	Size (mm)	ø912 x 1,030 (H)	ø912 x 939 (H)
	Inlet (mm)	ø300	ø300
	Outlet (mm)	ø200	ø200
	Drain (mm)	ø300	ø300
Capacity	Flow rate (L/s)	185.0 (max.)	185.0 (max.)
	Velocity (M/s)	2.0 (max.)	2.0 (max.)
	Efficiency (%)	≥90	≥90
	Filtration size	0.38	0.38
Country of origin		Germany	Germany
Features		• Polypropylene (PP) construction – corrosion resistant • 0.38mm vertical filtration provides effective separation of collected rainwater from sediment, leaves, moss & insects Fine filtration prevents mosquito breeding • Maintains full cross section of downpipe – no obstruction of rainwater flow • Inlet & outlet can be freely rotated – easier installation based on site condition • Oxygen enrichment – filtering process produces oxygen rich water which enhances water quality & inhibits growth of anaerobic organisms • Low maintenance – once every 4 - 6 months • Fully mechanical – no power consumption	• Polypropylene (PP) construction – corrosion resistant • Short version – easier installation based on site condition • 0.38mm vertical filtration provides effective separation of collected rainwater from sediment, leaves, moss & insects Fine filtration prevents mosquito breeding • Maintains full cross section of downpipe – no obstruction of rainwater flow • Inlet & outlet can be freely rotated – easier installation based on site condition • Oxygen enrichment – filtering process produces oxygen rich water which enhances water quality & inhibits growth of anaerobic organisms • Low maintenance – once every 4 - 6 months • Fully mechanical – no power consumption

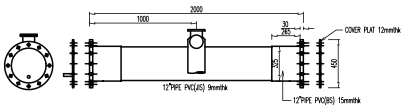
STEP 1 : RAINWATER FINE FILTER (COMMERCIAL / INDUSTRIAL)

		Vortex WFF150	Vortex WFF100
Model code		WFF150	WFF100
Material	Body	Polypropylene (PP)	Polypropylene (PP)
	Cover	Polypropylene (PP)	Polypropylene (PP)
	Mesh	0.28mm SUS304 stainless steel	0.28mm SUS304 stainless steel
Dimension	Size (mm)	ø315 x 780 (H)	ø315 x 433 (H)
	Inlet (mm)	ø150	ø100
	Outlet (mm)	ø100	ø100
	Drain (mm)	ø150	ø100
Capacity	Flow rate (L/s)	15.7 (max.)	5.1 (max.)
	Velocity (M/s)	1.3 (max.)	1.0 (max.)
	Efficiency (%)	≥90	≥90
	Filtration size	0.28	0.28
Country of origin		Germany	Germany
Features		• Polypropylene (PP) construction – corrosion resistant • 0.28mm vertical filtration provides effective separation of collected rainwater from sediment, leaves, moss & insects Fine filtration prevents mosquito breeding • Maintains full cross section of downpipe – no obstruction of rainwater flow • Inlet & outlet can be freely rotated – easier installation based on site condition • Oxygen enrichment – filtering process produces oxygen rich water which enhances water quality & inhibits growth of anaerobic organisms • Low maintenance – once every 4 - 6 months • Fully mechanical – no power consumption	• Polypropylene (PP) construction – corrosion resistant • 0.28mm vertical filtration provides effective separation of collected rainwater from sediment, leaves, moss & insects Fine filtration prevents mosquito breeding • Maintains full cross section of downpipe – no obstruction of rainwater flow • Inlet & outlet can be freely rotated – easier installation based on site condition • Oxygen enrichment – filtering process produces oxygen rich water which enhances water quality & inhibits growth of anaerobic organisms • Low maintenance – once every 4 - 6 months • Fully mechanical – no power consumption

RAINWATER FIRST FLUSH DIVERTER







Model		First flush diverter 1,000L	First flush diverter 500L	First flush diverter (Customized)
Model code		F/F1000L	F/F500L	F/F(C)
Material		Fibre-reinforced Polymer (FRP)	Fibre-reinforced Polymer (FRP)	Polyvinyl chloride (PVC)
Dimension	Size (mm)	1,100 (W) x 750 (L) x 1,100 (H)	1,100 (W) x 700 (L) x 650 (H)	
	Inlet (mm)	ø100 / 200mm	ø100 / 200mm	ø100 / 200mm
	Drain (mm)	ø12.5	ø12.5	ø12.5
Capacity		1,000L	500L	
Country of origin		Malaysia	Malaysia	Malaysia
Features		• Divert initial rainfall to drain by constant flow valve • Improve rainwater quality • Reduce tank maintenance	• Divert initial rainfall to drain by constant flow valve • Improve rainwater quality • Reduce tank maintenance	• Divert initial rainfall to drain by constant flow valve • Improve rainwater quality • Reduce tank maintenance

STEP 2 : SMOOTHING INLET

		Smoothing inlet 200mm	Smoothing inlet 100mm
Model		Smoothing inlet 200mm	Smoothing inlet 100mm
Model code		SI-0303	SI-0300
Material		SUS304 stainless steel	SUS304 stainless steel
Dimension	Size (mm)	ø306 x 180 (H)	ø130 x 180 (H)
	Inlet (mm)	ø200	ø100
Country of origin		Germany	Germany
Features		• Stainless steel construction – corrosion resistant • Installed on rainwater tank inlet pipe • Reduce velocity of incoming filtered rainwater • Fine debris sedimentation – avoid stirring of sediments • Aeration in rainwater tank – oxygenate rainwater by directing water upward & outward • Cleaner water – Creates layer of biofilm which removes additional metals & harmful bacteria	• Stainless steel construction – corrosion resistant • Installed on rainwater tank inlet pipe • Reduce velocity of incoming filtered rainwater • Fine debris sedimentation – avoid stirring of sediments • Aeration in rainwater tank – oxygenate rainwater by directing water upward & outward • Cleaner water – Creates layer of biofilm which removes additional metals & harmful bacteria

STEP 3 : RAINWATER FLOATING SUCTION FILTER

Model		Floating suction filter 2" (Fine)	Floating suction filter 1" (Fine)
Model code		SAFF2	SAFF1
Material	Mesh	SUS 304 stainless steel	SUS 304 stainless steel
	Ball float	Polyethylene (PE)	Polyethylene (PE)
	Hose	Food-grade	Food-grade
Inlet (mm)		ø50	ø25
Filtration size (mm)		0.3	0.3
Country of origin		Germany	Germany
Features		• Stainless steel & PE construction – corrosion resistant • Connected to the outlet of rainwater tank • Variable suction point based on water level due to ball float • Draws water from the cleanest point – 100mm from surface • Act as secondary filtration with 0.3mm mesh • Optimum efficiency due to large surface area – ensures free, unhindered water inflow • Protect pumps & seals • Integral non-return check valve	• Stainless steel & PE construction – corrosion resistant • Connected to the outlet of rainwater tank • Variable suction point based on water level due to ball float • Draws water from the cleanest point – 100mm from surface • Act as secondary filtration with 0.3mm mesh • Optimum efficiency due to large surface area – ensures free, unhindered water inflow • Protect pumps & seals • Integral non-return check valve

STEP 3 : RAINWATER FLOATING SUCTION FILTER

Model		Floating suction filter 2" (Coarse)	Floating suction filter 1" (Coarse)
Model code		SAGF2	SAGF1
Material	Mesh	SUS 304 stainless steel	SUS 304 stainless steel
	Ball float	Polyethylene (PE)	Polyethylene (PE)
	Hose	Food-grade	Food-grade
Inlet (mm)		ø50	ø25
Filtration size (mm)		1.2	1.2
Country of origin		Germany	Germany
Features		• Stainless steel & PE construction – corrosion resistant • Connected to the outlet of rainwater tank • Variable suction point based on water level due to ball float • Draws water from the cleanest point – 100mm from surface • Act as secondary filtration with 1.2mm mesh • Optimum efficiency due to large surface area – ensures free, unhindered water inflow • Protect pumps & seals • Integral non-return check valve	• Stainless steel & PE construction – corrosion resistant • Connected to the outlet of rainwater tank • Variable suction point based on water level due to ball float • Draws water from the cleanest point – 100mm from surface • Act as secondary filtration with 1.2mm mesh • Optimum efficiency due to large surface area – ensures free, unhindered water inflow • Protect pumps & seals • Integral non-return check valve

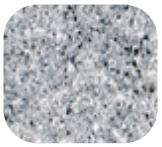
STEP 4 : RAINWATER MULTISIPHON OVERFLOW

Model		Multisiphon overflow 200mm	Multisiphon overflow 100mm
Model code		MS-US2000	MS-US1002
Material	Body	ABS plastic	ABS plastic
	Ball Float	Polyethylene (PE)	Polyethylene (PE)
Dimension	Size (mm)	230 (W) x 1,067 (L) x 762 (H)	140 (W) x 325 (L) x 475 (H)
	Inlet (mm)	ø200	ø100
Country of origin		Germany	Germany
Features		• Connected to rainwater tank overflow • Includes vermin trap – prevent rats & rodents from entering rainwater tank • Skims water surface – siphon debris, oil, grease & detergent • Function as non-return check valve – avoid backflow from drain • Odour trap – act as water seal against drain odours	• Connected to rainwater tank overflow • Includes vermin trap – prevent rats & rodents from entering rainwater tank • Skims water surface – siphon debris, oil, grease & detergent • Function as non-return check valve – avoid backflow from drain • Odour trap – act as water seal against drain odours

RAINWATER TOP-UP VALVE

Model		BigBoy 2"	BigBoy 1½"	RainAid ¾"
Model code		BB50MM	BB40MM	RV20MM
Material	Body	Acetal M90	Acetal M90	Acetal M90
	Weight	Acetal M90	Acetal M90	Acetal M90
	String	Food-grade	Food-grade	Food-grade
Inlet (mm)		ø50	ø40	ø20
Capacity	Flow rate (L/m)	1,200 @ 8B	800@8B	60@8B
	Working pressure (p.s.i.)	8 - 175	8 - 175	8 - 175
Country of origin		New Zealand	New Zealand	New Zealand
Features		• Back-up source from municipal water supply • Fully mechanical – no energy consumption • Variable adjustment of min. & max. water levels • Diaphragm activated – full flow valve • Soft closing – no water hammering • Patented self-cleaning mechanism to minimise blockage • Maintains regulatory "air-gap" – separate rainwater from municipal water supply	• Back-up source from municipal water supply • Fully mechanical – no energy consumption • Variable adjustment of min. & max. water levels • Diaphragm activated – full flow valve • Soft closing – no water hammering • Patented self-cleaning mechanism to minimise blockage • Maintains regulatory "air-gap" – separate rainwater from municipal water supply	• Back-up source from municipal water supply • Fully mechanical – no energy consumption • Variable adjustment of min. water level • Maintains regulatory "air-gap" – separate rainwater from municipal water supply

RAINWATER TANK

Model		BFE Slimline 900	BFE Slimline 500
Model code		RWT-SL900	RWT-SL500
Material		High quality linear polyethylene (PE)	High quality linear polyethylene (PE)
Dimension	Size (mm)	700 (W) x 1,200 (L) x 1,120 (H)	650 (W) x 1,150 (L) x 1,025 (H)
	Inlet (mm)	50mm	50mm
	Overflow (mm)	50mm	50mm
	Outlet (mm)	25mm	25mm
	Drain (mm)	25mm	25mm
	Manhole (mm)	250mm	250mm
Capacity		900 (Nominal)	500 (Nominal)
Thickness (mm)		8mm	8mm
Weight (kg)		39kg	34kg
Country of origin		Malaysia	Malaysia
Colours		 White marble (white & black fleck)	 Sandstone (mottled)
Features		• Linear polyethylene construction with compounded ICORENE 9068 (Density: 0.938) – longer lifespan • UV stabilised with black fleck colour design – avoids moss & fungus • Features external bracing – added strength & impact resistance • Slim width – ideal for fitting under eaves • Coloured tanks design - blend in aesthetically with premise	• Linear polyethylene construction with compounded ICORENE 9068 (Density: 0.938) – longer lifespan • UV stabilised with black fleck colour design – avoids moss & fungus • Features external bracing – added strength & impact resistance • Slim width – ideal for fitting under eaves • Coloured tanks design - blend in aesthetically with premise

RAINWATER TANK

Model		BFE SLEEK	BFE SLAX
Model code		RWT-SLEEK	RWT-SLAX
Material		Fibre-reinforced Polymer (FRP)	Fibre-reinforced Polymer (FRP)
Dimension	Size (mm)	590 (W) x 840 (L) x 835 (H)	350 (W) x 1,200 (L) x 900 (H)
	Inlet (mm)	50mm	50mm
	Overflow (mm)	50mm	50mm
	Outlet (mm)	25mm	25mm
	Drain (mm)	25mm	25mm
Capacity		414 (Nominal)	350 (Nominal)
Thickness (mm)		4-5	4-5
Weight (kg)		20	25
Country of origin		Malaysia	Malaysia
Colours		White (Other colours customizable)	White (Other colours customizable)
Features		• Comes with top tank cover • Slim width - ideal for fitting under eaves • Louvers design - blend in aesthetically with premise	• Comes with top tank cover • Slim width - ideal for fitting under eaves

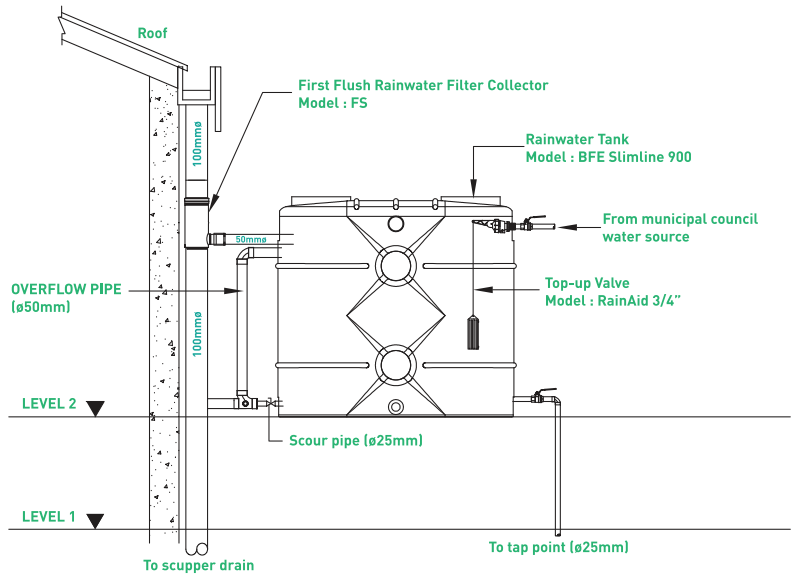
RAINWATER PUMP

Model		DAB Divertron X 1000M	EBARA Multigo M40/08
Model code		DX1000M	MULTIGO M40/08
Material	Casing	Technopolymer	AISI 304 stainless steel
	Shaft	AISI 303 stainless steel	AISI 303 stainless steel
	Mechanical seal	Carbon / Ceramic / NBR	Carbon / Ceramic / NBR
	Impeller & Diffuser	AISI 304 stainless steel / Technopolymer	Technopolymer
Dimension	Size (mm)	ø150 x 450 (H)	ø150 x 547 (H)
	Inlet (mm)	ø25	ø25
	Outlet (mm)	ø25	ø25
Capacity	Flow rate ($m^{3/h}$)	2.7m3/hour @ 23m (H)	3.6m3/hour @ 26m (H)
	Working pressure (p.s.i.)	145 (max.)	145 (max.)
	Power (kW)	0.65	0.6
	Horse Power	0.88	0.8
	Suction depth (m)	12 (max.)	6 (max.)
Country of origin		Italy	Japan
Features		• Multi-stage submersible pump with built-in integrated electronics • Automatic start & stop pump • Built-in electronic boards, pressure switch, flow sensor & non-return valve • Anti-corrosive	• Multi-stage vertical submersible pump • Low noise due to flowing liquid around motor • Motor cooling by water flow passing the motor • Double mechanical seal with interposed chamber containing lubrication fluid – longer lifespan

DESIGN DRAWING

RESIDENTIAL

ABOVE GROUND SYSTEM WITH GRAVITY FEED

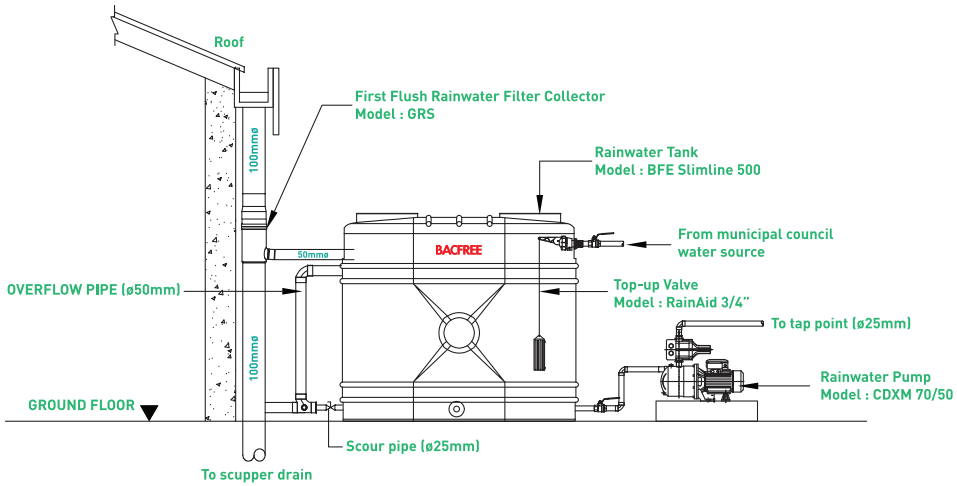


First Flush Rainwater Filter Collector
Model : FS
- Filter & First Flush diverter
- sediment, leaves, moss & insects
- Vertical filtration (0.28mm)
- Low maintenance

Rainwater Tank
Model : BFE Slimline 900
- UV stabilised to avoid moss & fungus
- External bracing for added strengh & impact resistance
- Slim width

Top-up Valve
Model : RaindAid 3/4"
- Fully mechanical, no power consumption
- Variable adjustment of min. water level
- Maintains regulatory "air gap"

ABOVE GROUND SYSTEM WITH PUMP

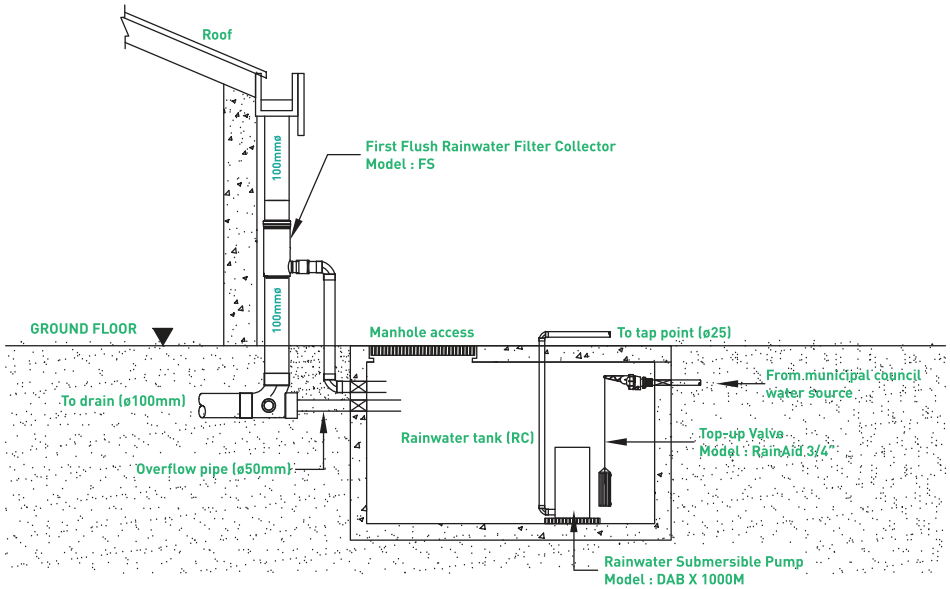


First Flush Rainwater Filter Collector
Model : GRS
- Filter & First Flush diverter
- sediment, leaves, moss & insects
- Vertical filtration (0.44mm)
- Low maintenance

Rainwater Tank
Model : BFE Slimline 500
- UV stabilised to avoid moss & fungus
- External bracing for added strengh & impact resistance
- Slim width

Top-up Valve
Model : RaindAid 3/4"
- Fully mechanical, no power consumption
- Variable adjustment of min. water level
- Maintains regulatory "air trap"

UNDERGROUND SYSTEM WITH SUBMERSIBLE PUMP



First Flush Rainwater Filter Collector
Model : FS
- Filter & First Flush diverter
- sediment, leaves, moss & insects
- Vertical filtration (0.28mm)
- Low maintenance

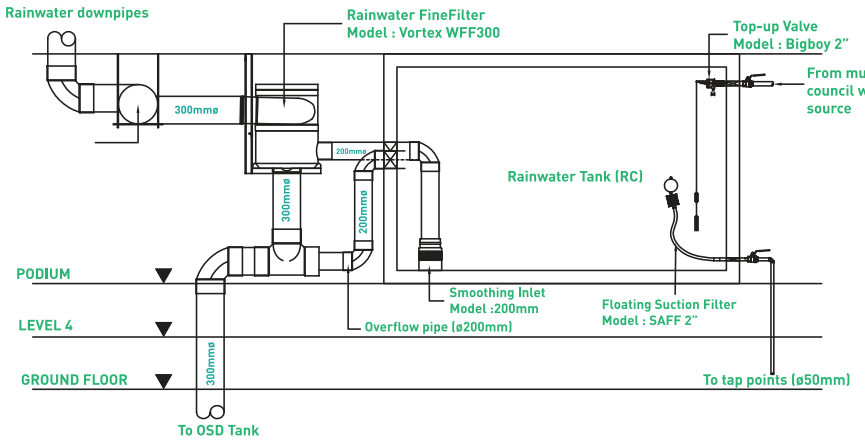
Top-up Valve
Model : RainAid 3/4"
- Fully mechanical, no power consumption
- Variable adjustment of min. water level
- Maintains regulatory "air-gap"

Rainwater Submersible Pump
Model : DAB X 1000M
- Automatic start & stop pump
- Built-in electronic boards, pressure switch, flow sensor & non-return valve

DESIGN DRAWING

COMMERCIAL

ABOVE GROUND SYSTEM WITH GRAVITY FEED



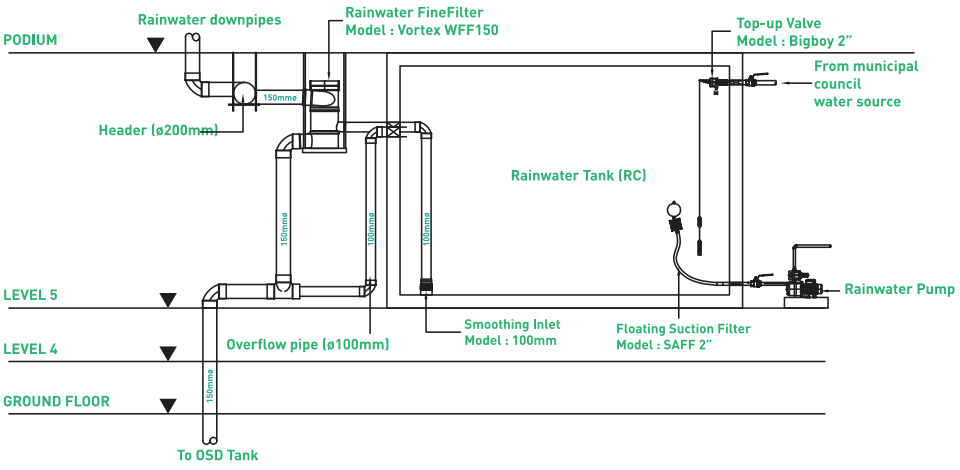
Rainwater Fine Filter
Model : Vortex WFF300
- Filter rainwater from sediment, leaves, moss & insects
- Vertical filtration (0.38mm)
- Oxygen enrichment
- Low maintenance

Smoothing Inlet
Model : 200mm
- Reduce velocity of filtered water
- Fine debris sedimentation
- Rainwater tank aeration

Floating Suction Filter
Model : SAFF 2"
- Variable suction point based on water level
- Draws water from cleanest point,100mm from surface
- Act as secondary filtration (0.28mm)
- Protect pumps & seals

Top-up valve
Model : Bigboy 2"
- Fully mechanical, no power consumption
- Variable adjustment of min. & max. water level
- Diaphragm activated, full flow valve
- Soft closing, no water hammering
- Maintains regulatory "air-gap"

ABOVE GROUND SYSTEM WITH PUMP



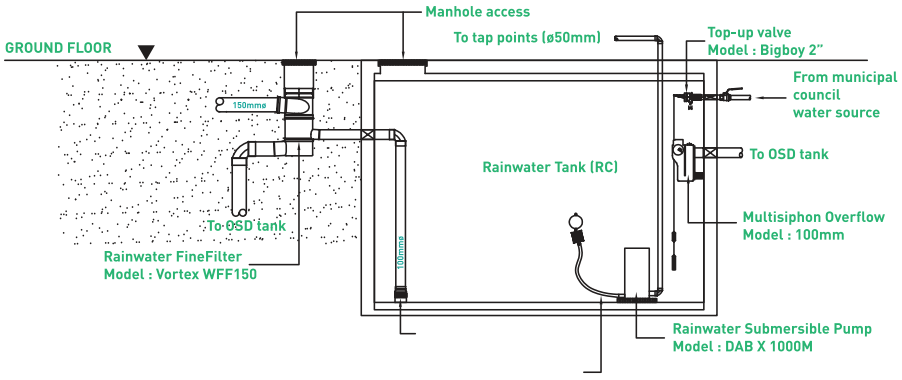
Rainwater Fine Filter
Model : Vortex WFF150
- Filter rainwater from sediment, leaves, moss & insects
- Vertical filtration (0.28mm)
- Oxygen enrichment
- Low maintenance

Smoothing Inlet
Model : 100mm
- Reduce velocity of filtered water
- Fine debris sedimentation
- Rainwater tank aeration

Floating Suction Filter
Model : SAFF 2"
- Variable suction point based on water level;
- Draws water from cleanest point, 100mm from surface
- Act as secondary filtration (0.28mm)
- Protect pumps & seals

Top-up valve
Model : Bigboy 2"
- Fully mechanical, no power consumption
- Variable adjustment of min. & max. water level
- Diaphragm activated, full flow valve
- Soft closing, no water hammering
- Maintains regulatory "air-gap"

UNDERGROUND SYSTEM WITH SUBMERSIBLE PUMP



Rainwater Fine Filter
Model : Vortex WFF150
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- Oxygen enrichment
- Low maintenance

Smoothing Inlet
Model : 100mm
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- Fine debris sedimentation
- Rainwater tank aeration

Floating Suction Filter
Model : SAFF 2"
- Variable suction point based on water level;
- Draws water from cleanest point, 100mm from surface
- Act as secondary filtration (0.28mm)
- Protect pumps & seals

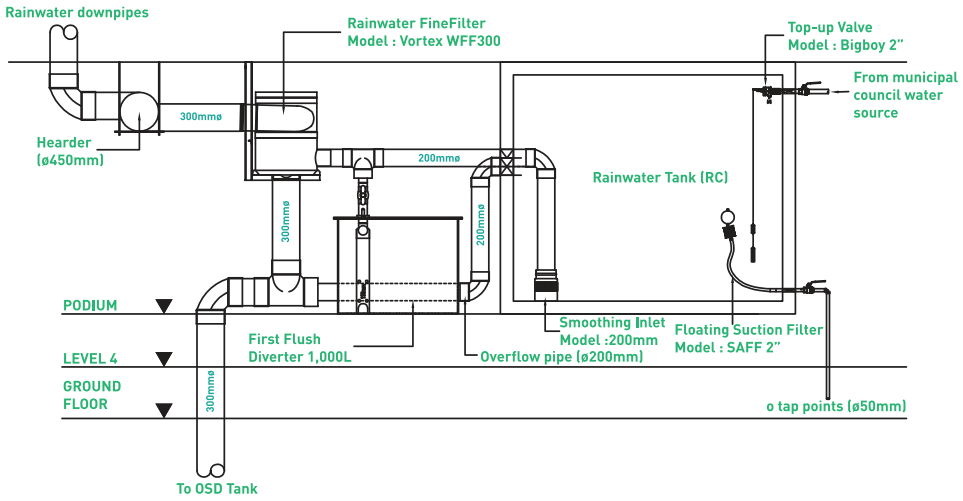
Multisiphon Overflow
Model : 200mm
- Skims water surface
- Siphone debris, oil, grease & detergent
- Function as non-return check valve
- Odour trap - water seal against drain odours
- Vermin trap - avoid rats from entering rainwater tank

Top-up valve
Model : Bigboy 2"
- Fully mechanical, no power consumption
- Variable adjustment of min. & max. water level
- Diaphragm activated, full flow valve
- Soft closing, no water hammering
- Maintains regulatory "air-gap"

DESIGN DRAWING

COMMERCIAL SYSTEM WITH FIRST FLUSH

ABOVE GROUND SYSTEM WITH GRAVITY FEED



Rainwater Fine Filter
Model : Vortex WFF300
- Filter rainwater from sediment, leaves, moss & insects
- Vertical filtration (0.38mm)
- Oxygen enrichment
- Low maintenance

First Flush Diverter
- Divert initial rainwater consisting sediment, dust & insects
- Improves water quality
- DBKL approved

Smoothing Inlet
Model : 200mm
- Reduce velocity of filtered water
- Fine debris sedimentation
- Rainwater tank aeration

Floating Suction Filter
Model : SAFF 2"
- Variable suction point based on water level;
- Draws water from cleanest point,100mm from surface
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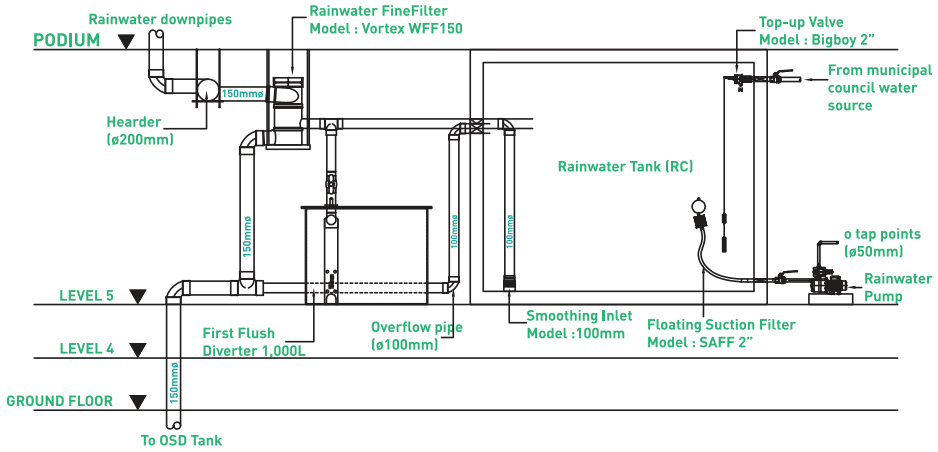
Multiphon Overflow
Model : 200mm
- Skims water surface - siphon debris, oil, grease & detergent
- Function as non-return check valve
- Odour trap - water seal against drain odours
- Vermin trap - avoid rats from entering rainwater tank

ABOVE GROUND SYSTEM WITH PUMP



Rainwater Fine Filter
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Smoothing Inlet
Model : 100mm
- Reduce velocity of filtered water
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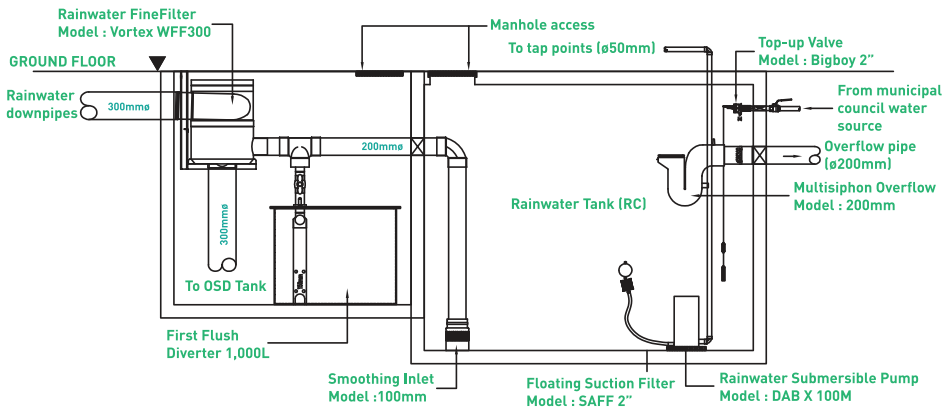
- Rainwater tank aeration

Floating Suction Filter
Model : SAFF 2"
- Variable suction point based on water level;
- Draws water from cleanest point, 100mm from surface
- Act as secondary filtration (0.28mm)
- Protect pumps & seals

Top-up valve
Model : Bigboy 2"
- Fully mechanical, no power consumption
- Variable adjustment of min. & max. water level
- Diaphragm activated, full flow valve
- Soft closing, no water hammering
- Maintains regulatory "air-gap"

UNDERGROUND SYSTEM WITH SUBERSIBLE PUMP



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First Flush Diverter
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- Improves water quality
- DBKL approved

Smoothing Inlet
Model : 200mm
- Reduce velocity of filtered water
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- Rainwater tank aeration

Floating Suction Filter
Model : SAFF 2"
- Variable suction point based on water level;
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- Protect pumps & seals

Top-up valve
Model : Bigboy 2"
- Fully mechanical, no power consumption
- Variable adjustment of min. & max. water level
- Diaphragm activated, full flow valve
- Soft closing, no water hammering
- Maintains regulatory "air-gap"

PROJECT REFERENCE

COMMERCIAL BUILDINGS

OFFICES

- SP Setia HQ, Setia Alam
- Standard Chartered Building, Teknologi Park Malaysia
- Starpac Point, KL
- PAM Centre, KL
- Brunei Embassy. Cyberjaya
- Centrus CBD31B, Cyberjaya
- Nadayu 28 Shoplot, Sunway
- Menara Mudajaya, Mutiara Damansara
- Sime Darby Brunsfield Oasis, Ara Damansara

SHOPPING MALLS

- Melawati Mall, KL
- South Gate, KL
- Quill City Mall, KL

SUPERMARKETS

- Giant Setapak, KL
- AEON Shah Alam
- AEON Big Ipoh, Perak
- AEON Klebang, Ipoh
- Mydin Taman Pelangi Indah, Johor
- Mydin Taman Rinting, Johor

CONVENTION CENTRES

- SP Setia Penang International Convention Centre, Penang

HOTELS / RESORTS

- Four Seasons Place, KL
- Stripes Hotel, KL
- Sheraton, PJ
- Cititel, Ipoh

F&B

- McDonald's, Putrajaya
- Starbucks Bandar Seri Alam, Masai, Johor Bahru

MEDICAL BUILDINGS

- Ramsay Sime Darby Medical Centre, Subang Jaya
- KPJ Sri Manjung Specialist Centre, Perak

EDUCATIONAL BUILDINGS

- Lai Meng Primary School, KL
- St Joseph Institution International School, PJ
- Epsom College, Bandar Enstek
- Raffle's American School, Nusajaya
- Reading University, Johor

RELIGIOUS BUILDINGS

- Masjid Baitul Aman, KL
- Masjid Agama, KL
- Masjid Jamek Alam Shah, KL
- Masjid Terminal Bersepadu Selatan, KL

TRANSPORT BUILDINGS

- Eco Majestic Toll Plaza, Semenyih
- Petronas Petrol Station, Sg Besi Highway
- MRT Ampang Extension Line
- Sultan Abdul Halim Mu'adzam Shah Bridge, Penang
- Alor Pongsu Plus Toll Plaza, Perak
- LRT Extension Line
- Petronas, Batu Pahat

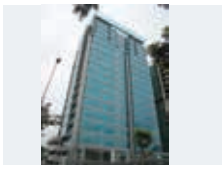
INDUSTRIAL BUILDINGS

- Panasonic Warehouse, Shah Alam
- Autoways Factory, Bukit Jelutong
- CS Yap Metalparts Industries Factory, Bandar Parkland
- Vitagen Factory, Klang
- UEM Nusajaya Technical Park, Johor
- ASCENDAS Nusajaya Technical Park, Johor


SP Setia HQ


PAM Centre


Standard Chartered Building


Menara Mudajaya


Melawati Mall


South Gate


Quill City Mall


Penang International C. Centre


Penang Second Bridge

Giant Setapak


Four Seasons Place


Sheraton Hotel


Ramsay Sime Darby Medical Centre


Lai Meng Primary School


Reading University


St Joseph Institution International School


Masjid Jamek Alam Shah


CS Yap Metalparts Factory


Masjid Terminal Bersepadu Selatan


UEM Nusajaya Technical Park

PROJECT REFERENCE

COMMERCIAL BUILDINGS

HIGH RISE RESIDENTIAL

- Amprojek Paragon Residence, Johor
- Austin Heights Manhattan, Johor
- Berinda Molek Pine, Johor
- Country Garden Danga Bay, Johor
- Emerald Bay Puteri Harbour, Johor
- Exsim The Leafz, KL
- Eco World Eco Sky, KL
- Feringghi Residence Condo Villa, Penang
- IJM Light Collection 1, Penang
- IJM Light Collection 2, Penang
- IJM Light Linear, Penang
- IJM Light Point, Penang
- IJM Riana South, Bukit Manda'rina
- Gamuda Jade Hills Jadite Suites, Kajang
- Gamuda The Robertson, KL
- Kiara Seleksi, The Signature, Desa Sri Hartamas
- Liberty Park 3 Elements, Sri Kembangan
- Mah Sing I-Parc @ Tanjung Pelepas, Johor
- Mah Sing South Ville City
- MKH Saville @ The Park, Bangsar
- Nadayu 28 Sales Gallery, Sunway
- Nadayu 28 Condominium, Sunway
- Nadayu 62, Melawati
- Pinnacle, Sri Petaling
- Sime Darby The Glades, Putra Heights
- Solid Promenade Damai 88, KL
- SP Setia Sky 88, Johor
- Sunway Damansara Nexis
- Sunway Lacosta, Sunway
- Titijaya 3 Elements, Sri Kembangan
- UEM Land & Sunrise MK20
- UEM Land & Sunrise MK22
- UEM Imperial Harbour, Johor
- YTL The Capers, Sentul
- YTL Midfields, KL
- Desa Park City Perdana Park Breezeway Condo, Kepong

COMMERCIAL BUILDINGS

LANDED RESIDENTIAL

- BBN Nilai Springs Villa Alpha, Nilai
- BBN Nilai Springs Villa Beta, Nilai
- BBN Nilai Springs Heights Signature Bungalow, Nilai
- BBN Cluster Homes, Nilai
- Bertam Alliance Casabella.Kota Damansara
- BRDB Senja Residence, Sri Kembangan
- DRB-HICOM Glenmarie Cove, Klang
- Eco World Eco Majestic, Semenyih
- Eco World Eco Sanctuary, Canal City
- Gamuda Jade Hills The Hills, Kajang
- Hong Bee Land Anggun 3, Rawang
- Hamton Realty Suria Saujana, Kajang
- IJM Bandar Rimbayu, Canal City
- IJM Sh'ng Villa, Cheras
- I&P Seri Beringin, Damansara Heights
- Lum Chang Twin Palms Kemensah, Sungai Long
- Mah Sing Garden Residence, Cyberjaya
- Mah Sing Hijauan Residence, Cheras
- Mah Sing Kinrara Residences Phase 1, Bandar Kinrara
- Mah Sing Kinrara Residences Phase 2, Bandar Kinrara
- Mah Sing M Residence, Rawang
- Mah Sing 1 Lagenda, Cheras
- Mitraland 16 Quartz Melawati
- Paramount Sejati Residence, Cyberjaya
- Putrajaya Perdana Desiran Bayu, Putrajaya
- Reka Asset Ventures Lake Heights, Seremban
- SDB Laman & Bayu, Puchong
- Sierramas 41, Sungai Buloh
- Sime Darby USJ Heights
- Sime Darby USH Heights
- Sime Darby Denai Alam
- Sime Darby The Glades, Putra Heights
- SP Setia Eco Glade, Cyberjaya
- SP Setia Eco Hill, Semenyih
- SP Setia Bandar Setia Alam
- Tropicana Aman, Kota Kemuning (Phase 3)
- UEM Land East Ledang, Nusajaya
- UM Land Seri Austin Residence, Johor
- WCT Laman Greenville, Klang
- YTL The Dale, Sungai Besi
- YTL The Reed, Sungai Besi


Country Garden


The Leafz


The Light Waterfront


The Roberston


The Capers

South Ville City


Nadayu 28


Sunway Nexis


Eco Majestic


Eco Sanctuary


Jade Hills


Bandar Rimbayu

ACTUAL SYSTEM INSTALLATION

ACTUAL SYSTEM INSTALLATION

WARRANTY

All BACFREE® rainwater harvesting systems come with comprehensive warranties on casing, performance and electrical components.

Our Commitment

BACFREE® is committed to ensuring your experience with our products and organization exceeds your expectations. WISY have manufactured your rainwater harvesting system to the highest quality standards. Should you need any support or have questions about your system, please contact our Technical Support team at (+603) 5633 8281 or enquiry@bacfree.com.my and we will be happy to assist you. We sincerely hope you enjoy the benefits of clean and clear, harvested rainwater water after the installation of your BACFREE® rainwater harvesting system.

Specific Warranty Coverage

Warranty coverage is subject to the conditions and limitations outlined under the heading "General Conditions and Limitations" below. Please see specific product manuals for details.

Two-Year Limited Warranty for Casing and Performance

BACFREE® warrants the casing of WISY product to be free from defects in material and workmanship for a period of two (2) years from the date of purchase. During this time, BACFREE® will repair or replace, at its option, any defective or non-performing product. Please return the defective part to BACFREE® who will process your claim.

Two-Year Limited Warranty for Electrical and Hardware Components

BACFREE® warrants the electrical (controller) and hardware components to be free from defects in material and workmanship for a period of two (2) years from the date of purchase. During this period, BACFREE® will repair or replace, at its option, any defective parts covered by the warranty. Please return the defective part to BACFREE® who will process your claim.

Two-Year Warranty for Water Quality

BACFREE® warrants the water quality for the clarity of the harvested rainwater to be less than 5NTU (Nephelometric Turbidity Unit) for a period of two (2) years from the date of purchase. Warranty is only applicable provide that the recommended and necessary maintenance is performed.

General Conditions and Limitations

None of the above warranties cover damage caused by improper use or maintenance, accidents, acts of God or minor scratches or imperfections that do not materially impair the operation of the product. The warranties do not cover products that are not installed as outlined in the Operation Manual.

Parts repaired or replaced under these warranties will be covered under warranty up to the end of the warranty period applicable to the original part.

The above warranties do not include the cost of shipping and handling of returned items.

The limited warranties described above are the only warranties applicable to the BACFREE® products listed in the "Specific Warranty Coverage" section. These limited warranties outline the exclusive remedy for all claims based on a failure of or defect in any of these products, whether the claim is based on contract, tort (including negligence), strict liability or otherwise. These warranties are in lieu of all other warranties whether written, oral or statutory. Without limitation, no warranty of merchantability or of fitness for a particular purpose shall apply to any of these products.

BACFREE® does not assume any liability for personal injury or property damage caused by the use or misuse of any of the above products. BACFREE® shall not, in any event, be liable for special, incidental, indirect or consequential damages. BACFREE®'s liability shall, in all instances, be limited to repair or replacement of the defective product or part, and this liability will terminate upon expiration of the applicable warranty period.

APPENDIX

CERTIFICATES

FS FIRST FLUSH RAINWATER FILTER COLLECTOR

DIN CERTCO
Gesellschaft für Konformitätsbewertung mbH

REGISTRIERBESCHEID

Die Firma

WISY AG
Oberdorfstraße 26
63699 Kefenrod

ist berechtigt
für das folgende Produkt

Regenwassernutzungsanlagen: Filter

vom Typ

Filtersammler FS

die Konformität mit

DIN 1989-2:2004-08

eigenverantwortlich zu erklären und das Zeichen

DIN

in Verbindung mit der unten genannten Registernummer zu nutzen.

Registernummer: RD016

Dieser Registrierbescheid ist unbefristet gültig.

DIN CERTCO Gesellschaft für
Konformitätsbewertung mbH
Alboinstraße 56, 12103 Berlin

GESELLSCHAFT FÜR KONFORMITÄTSBEWERTUNG MBH
DIN CERTCO

2009-06-10
Dipl.-Ing. Dipl.-Wi.-Ing. Sören Scholz

CERTIFICATES

VORTEX RAINWATER FINE FILTER

DIN CERTCO
Gesellschaft für Konformitätsbewertung mbH

DIN

REGISTRIERBESCHEID

Die Firma

WISY AG
Oberdorfstraße 26
63699 Kefenrod

ist berechtigt
für das folgende Produkt

Regenwassernutzungsanlagen: Filter

vom Typ

Wirbel-Fein-Filter WFF

die Konformität mit

DIN 1989-2:2004-08

eigenverantwortlich zu erklären und das Zeichen

DIN

in Verbindung mit der unten genannten Registernummer zu nutzen.

Registernummer: RD015

Dieser Registrierbescheid ist unbefristet gültig.

DIN CERTCO Gesellschaft für
Konformitätsbewertung mbH
Alboinstraße 56, 12103 Berlin

GESELLSCHAFT FÜR KONFORMITÄTSBEWERTUNG MBH
DIN CERTCO

2009-06-05

Dipl.-Ing. Dipl.-Wi.-Ing. Sören Scholz

CERTIFICATES

FS FIRST FLUSH RAINWATER FILTER COLLECTOR

MyHIJAU • MARK

This is to certify that

BACTERIA FREE WATER ENGINEERING SDN. BHD. (156116-A)

No. 7, Jln SS13/3F
Subang Jaya Industrial Estate
47500 Subang Jaya
Selangor

has the rights to use the MyHIJAU Mark label on the following item:

Rainwater Harvesting System: Filter

(Refer to Schedule Page for more details)

Compliance:

Performance Standard Compliance

Certificate no.	**: MyHP 00154/16**
Issue date	**: 29 February 2016**
Expiry date	**: 28 February 2019**

Green Tech Malaysia

Malaysian Green Technology Corporation
(660257-T)

No.2, Jalan 9/10, Persiaran Usahawan
Seksyen 9, 43650 Bandar Baru Bangi
Selangor Darul Ehsan
Malaysia

T : 603 8921 0800
F : 603 8921 0801

www.greendirectory.my
www.greentechmalaysia.my

IR. AHMAD HADRI HARIS
Chief Executive Officer
Malaysian Green Technology Corporation

This Certificate is granted subject to the terms and Condition of usage of MyHIJAU Mark certificate and label.

Printed on FSC® Certified paper

RECYCLED
FSC® C104284

CERTIFICATES

VORTEX RAINWATER FINE FILTER

MyHIJAU • MARK

This is to certify that

BACTERIA FREE WATER ENGINEERING SDN. BHD. (156116-A)

No. 7, Jln SS13/3F
Subang Jaya Industrial Estate
47500 Subang Jaya
Selangor

has the rights to use the MyHIJAU Mark label on the following item:

Rainwater Harvesting System: Filter

(Refer to Schedule Page for more details)

Compliance:

Performance Standard Compliance

Certificate no.	**: MyHP 00155/16**
Issue date	**: 29 February 2016**
Expiry date	**: 28 February 2019**

Green Tech Malaysia

Malaysian Green Technology Corporation
(461237-T)

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IR. AHMAD HADRI HARIS
Chief Executive Officer
Malaysian Green Technology Corporation

This Certificate is granted subject to the Terms and Condition of usage of MyHIJAU Mark certificate and label.

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2010 Best Brand in Water Filtration Technology

2011 Best Brand in Water Filtration Technology
Rain Water Harvesting System

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Rain Aid Valve

HOMEDEC® 2011 Quality Award
Rain Water Filter Collector

ARCHIDEX® 2012 Green New Product Award
Vortex Fine Filter

ARCHIDEX® 2012 New Product Award
Pump Buddy

A Member of Water Quality

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CERT. NO. AR6185