

eWi
enviro WASH international

**INTEGRATED OFF-GRID
SAFE WATER SUPPLY, HYGIENE AND SANITATION
EQUIPMENT AND SYSTEMS**

**MAKING A VALUABLE CONTRIBUTION TO
IMPROVEMENTS IN THE SUPPLY AND STORAGE OF
DRINKING WATER, AND IN HYGIENE AND SANITATION
AROUND THE GLOBE**



SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD

Goal 6: Ensure access to water and sanitation for all

Achieve, by 2030:

- ❖ **universal and equitable access to safe and affordable drinking water for all;**
- ❖ **access to adequate and equitable sanitation and hygiene for all, and end open defecation - paying special attention to the needs of women and girls, and those in vulnerable situations.**

- ❖ **WASH is the collective term for Water, Sanitation and Hygiene.**
- ❖ **Since 1990 UNICEF, together with WHO, have conducted a Joint Monitoring Programme (JMP) on WASH progress worldwide*.**

*their latest report is *Progress on Drinking Water, Sanitation and Hygiene, 2017.*

JMP PERFORMANCE LADDERS

- ❖ JMP has developed performance ‘ladders’ for drinking water, sanitation and hygiene.
- ❖ The further up a ladder a country, region, community, institution or household goes the better for its health, safety and prosperity.

DRINKING WATER	SANITATION	HYGIENE
SAFELY MANAGED	SAFELY MANAGED	BASIC
BASIC	BASIC	
LIMITED	LIMITED	LIMITED
UNIMPROVED	UNIMPROVED	NO FACILITY
SURFACE WATER	OPEN DEFICATION	

JMP PERFORMANCE LADDER

(A) DRINKING WATER

Note that improved sources include: piped water, boreholes or tubewells, protected dug wells, protected springs, and packaged or delivered water

SAFELY MANAGED

Drinking water from an improved water source that is located on premises, available when needed and free from faecal and priority chemical contamination

BASIC

Drinking water from an improved source, provided collection time is not more than 30 minutes for a round trip, including queuing

LIMITED

Drinking water from an improved source for which collection time exceeds 30 minutes for a round trip, including queuing

UNIMPROVED

Drinking water from an unprotected dug well or unprotected spring

SURFACE WATER

Drinking water directly from a river, dam, lake, pond, stream, canal or irrigation canal

JMP PERFORMANCE LADDER (B) SANITATION

Note that improved facilities include flush/pour flush to piped sewer systems, septic tanks or pit latrines; ventilated improved pit latrines, composting toilets or pit latrines with slabs

SAFELY MANAGED

Use of improved facilities that are not shared with other households, and where excreta are safely disposed of in situ or transported and treated offsite

BASIC

Use of improved facilities that are not shared with other households

LIMITED

Use of improved facilities shared between two or more households

UNIMPROVED

Use of pit latrines without a slab or platform, hanging latrines or bucket latrines

OPEN DEFECATION

Disposal of human faeces in fields, forests, bushes, open bodies of water, beaches or other open spaces, or with solid waste

JMP PERFORMANCE LADDER (C) HYGIENE

Note that handwashing facilities may be fixed or mobile, and include a sink with tap water, buckets with taps, tippy-taps, and jugs or basins designated for handwashing. Soap includes bar soap, liquid soap, powder detergent, and soapy water, but does not include ash, soil, sand or other handwashing agent

BASIC

Availability of a handwashing facility on premises with soap and water

LIMITED

Availability of a handwashing facility on premises without soap and water

NO FACILITY

No handwashing facility on premises

HOW **enviro WASH international** CAN CONTRIBUTE

eWi is a newly formed collaboration between three companies producing high quality products for the water industry, that have come together to develop complete off-grid WASH systems

WE CAN PROVIDE WASH SERVICES ON THE TOP RUNG OF EACH JMP LADDER!

**i.e, Safely Managed Drinking Water and Sanitation Services, and Basic Hygiene -
from any source of non-saline water**

Our systems can be customised to meet the particular WASH requirements of:

- ❖ **remote and difficult to access villages, schools, training centres and dormitories, community centres, medical clinics, police and military camps, hotels and resorts, etc; and**
- ❖ **refugee camps, displaced person settlements, and short-term facilities needed in disaster relief situations.**

eWi PARTNERS

❖ Enviro-Pure Foundation:

is a Netherlands based company whose compact *smart UF* units use ultrafiltration technology to filter and purify harvested rainwater, and water collected from surface and groundwater sources. *smartUF* units are automatically backwashed, and their membrane cartridges screen out all suspended solids and pathogenic micro-organisms, to meet and exceed WHO potable standards .

❖ GreenCo Water:

is an Australian company whose multi-award-winning *Pak Flat Tanks [PFT]* are 1,000 litre [264 gallon] tanks, that weigh just 26 kgs [57 lbs], and can be assembled on site in less than ten minutes. PFT can be coupled together to provide multiple thousands of litres of storage. Ultra-filtered water stored in the tanks remains contamination-free, mosquito-proof and protected against evaporation.

❖ Envorinex:

is another Australian company. Its *Bioremediation Infield Personnel Units [BIPU]* are mini septic tank chambers that are also flat-packed. Each chamber pack weighs less than 15 kgs [33 lbs], and can be easily assembled and installed manually. BIPU chambers can be linked to flushing toilets, and will successfully treat all human effluent. The residual grey water can be used for irrigation purposes.

PRINCIPAL PRODUCTS



Smart UF 5024 unit



Smart UF 4014 unit



Greenco Water PFT



Envorinex BIPU flat packs



Envorinex BIPU sewage treatment chambers



www.enviro-pure.nl

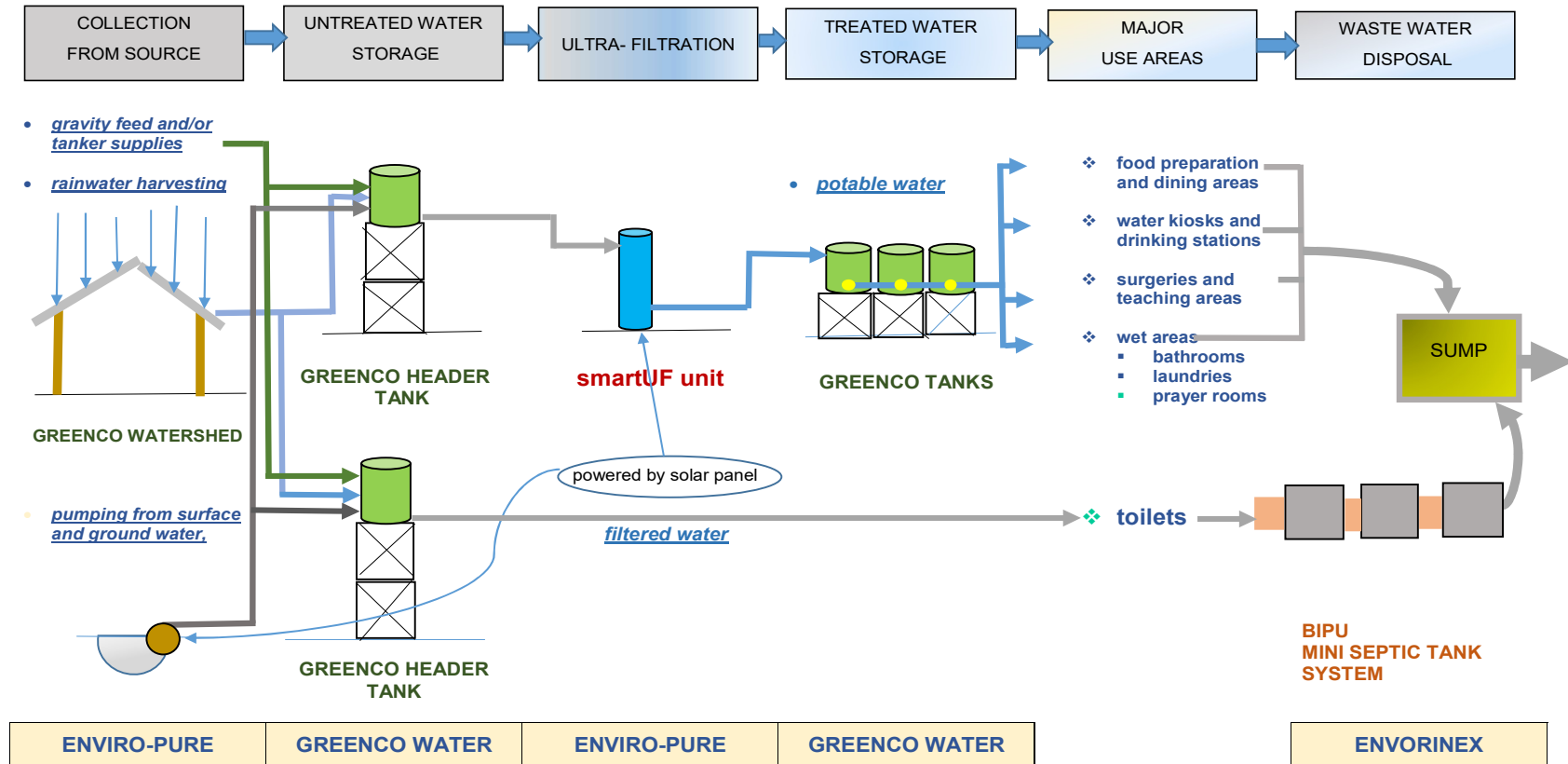
www.greencowater.com

www.envorinex.com

SCHEMATIC LAYOUT OF eWi WASH FACILITIES

LINKING OUR PRODUCTS TO OFFER COMPLETE OFF-GRID WASH SOLUTIONS

- ❖ for rural villages, schools and training centres, dormitories, clinics, community centres, police and military camps, longhouses, water kiosks, roadside service areas, hotels and resorts, etc; and
- ❖ plus
- ❖ disaster response programs, refugee camps and settlements.



OUR PRODUCTS HAVE THE CHARACTERISTICS THAT ENABLE THEM TO BE CUSTOMIZED TO MEET EVEN THE MOST DEMANDING OF CLIENT REQUIREMENTS:

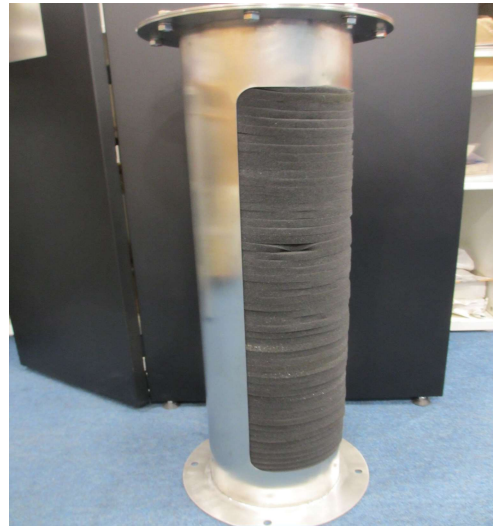
- ❖ **Portable, lightweight and compact** – ideal to warehouse and bulk transport, yet easy to deliver to almost any site, no matter what the location
- ❖ **Versatile and adaptable** – ideal for rapid response, can be installed almost anywhere, and cope with all types of non-saline water sources
- ❖ **Scalable** – can be tailored to everything from small dwellings to sizeable institutions and communities
- ❖ **Reliable** – require very low maintenance, and come with 10-year equipment guarantees
- ❖ **Environmentally sustainable** - no chemicals used, little need for electricity
- ❖ **Labour-saving** - especially for women and children
- ❖ **Local procurement, and up-skilling job-creation opportunities**
- ❖ **Value for money** – little or no operating costs, returns on initial outlays high
- ❖ **Demountable and recyclable, when no longer needed on site.**

ENVIRO-PURE FOUNDATION

- ❖ Enviro-Pure Foundation has thirty years experience of delivering water purification equipment across the globe – in Brazil, Burundi, Cambodia, Congo, Ecuador, India, Indonesia, Kenya, Malaysia, Nepal, Pakistan, Philippines, Sri Lanka, Suriname, Thailand, Vanuatu, Zimbabwe, etc
- ❖ smart UF technology is the culmination of that experience



smartUF 5024 unit in Cambodia



arsenic, fluoride and iron filter cartridge

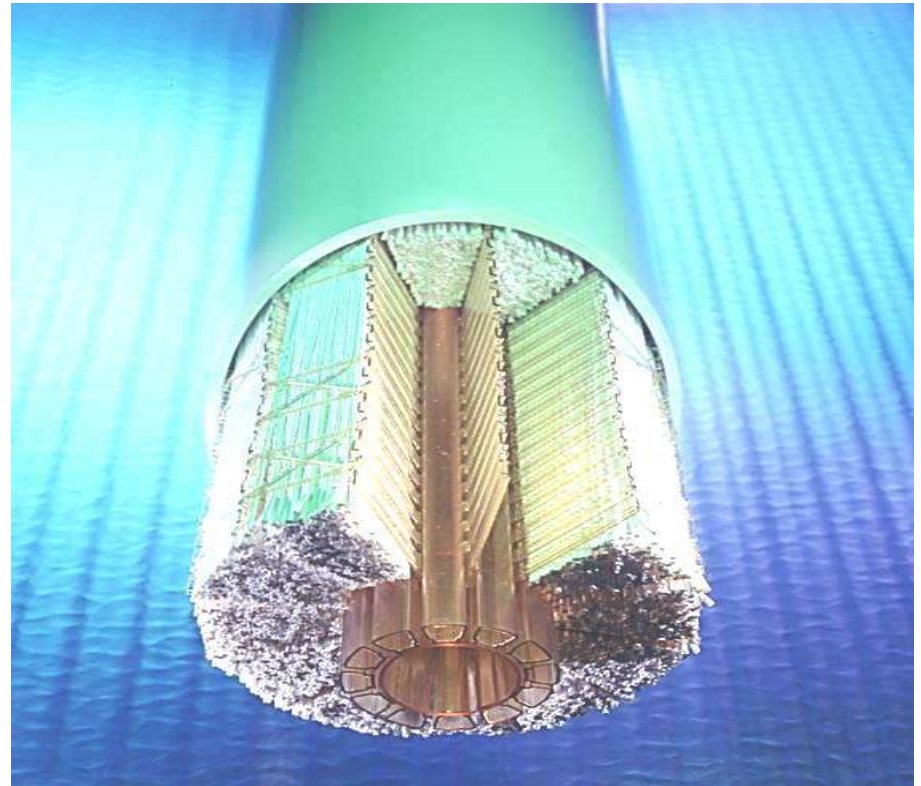


ultra-filtered water distribution, Cambodia

ENVIRO-PURE FOUNDATION smart UF

Ultrafiltration is 'state of the art'

- ❖ Bacteria are typically larger than 0.5 μm (microns)
- ❖ Viruses are larger than 0.05 μm
- ❖ Pores of UF membranes are between 0.01-0.03 μm
- ❖ No living or dead micro-organisms will be able to pass this "sieve", nor will small particles such as colloids



ENVIRO-PURE FOUNDATION

smart UF

- ❖ smartUF units deliver WHO standard potable water – depending upon the turbidity of the source water, 4014 smartUF units can deliver between 300 and 600 litres per hour, and smartUF 5024 units between 750 and 1300 litres per hour.
- ❖ All smartUF units automatically backwash – for 2 minutes every hour, using between 8 to 15 litres.
- ❖ If necessary, smartUF units can be combined with filters that also remove arsenic, fluoride and iron.

GREENCO WATER Pak Flat Tanks (PFT)

- ❖ in 2016, GreenCo Water's PFT won the 2016 Aidex Innovation Challenge: *"the next big invention in the delivery of aid"*.
- ❖ in 2017, PFT was a prize winner in the DFAT Humanitarian Supplies Challenge, and is now a component of their rapid response program for disaster relief.
- ❖ PFT have been supplied to disaster relief, humanitarian assistance and development programs in Fiji, PNG, Vanuatu, Indonesia, the Philippines and Yemen.



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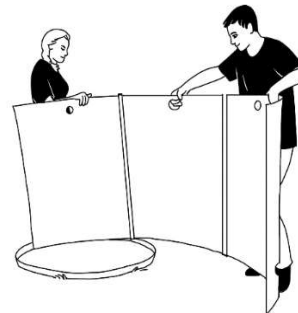
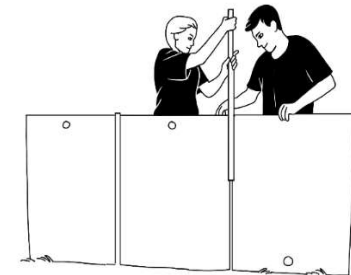
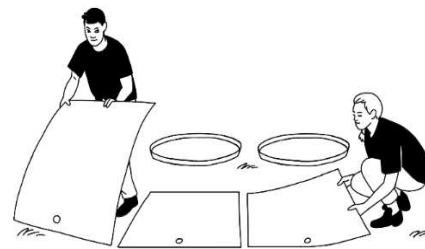
eWi systems and products



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GREENCO WATER Pak Flat Tanks (PFT)

- ❖ PFT are strongly built – each tank consists of a high density polypropylene outer casing and a sealed, BPA-free, polythene liner.
- ❖ The sealed polythene liners mean water is safely stored, virtually evaporation free, and is mosquito-proof.
- ❖ 14 PFT can fit on a pallet, 188 in a 20ft container, and 400 in a 40 ft container.
- ❖ PFT can be assembled on site in less than 10 minutes, by one or two people and with the aid of only a screwdriver.



ENVORINEX Bioremediation Infield Personnel Units [BIPU]

Envorinex BIPU septic systems were deployed in Banda-Aceh in Indonesia after the tsunami of 2006. Since then some 50,000 units have been installed across South-East Asia and the Pacific, including with the Australian and New Zealand Defence Forces, and with UN personnel, in East Timor.



Delivery of BIPU system for hospital in PNG



BIPU installation Fiji



UN East Timor

ENVORINEX

Bioremediation Infield Personnel Units [BIPU]

- ❖ **BIPU chambers are made from recycled plastic, and fit together Lego-style**
- ❖ **Chambers A and B are 205 litre primary treatment chambers, taking waste solids and liquids from either pour flush or cistern flush water seal seat or squat toilets.**
- ❖ **Chambers C and D are 205 litre liquid retention tanks, linked to chambers A and B, the grey water from which is drained into a sump, along with waste water from food preparation and personal hygiene zones.**

EXAMPLE 1 OF eWi WASH FACILITY LAYOUT.

Small household, small potable water station, single pour-flush toilet.

Suitable for up to 20 people

Supplied by eWi

- 1 smart UF 4014 unit and ancillary fittings
- 3 Pak Flat Tanks and ancillary fittings
- 2 BIPU chambers and ancillary fittings

Estimated cost, ex-factory – USD3,400*

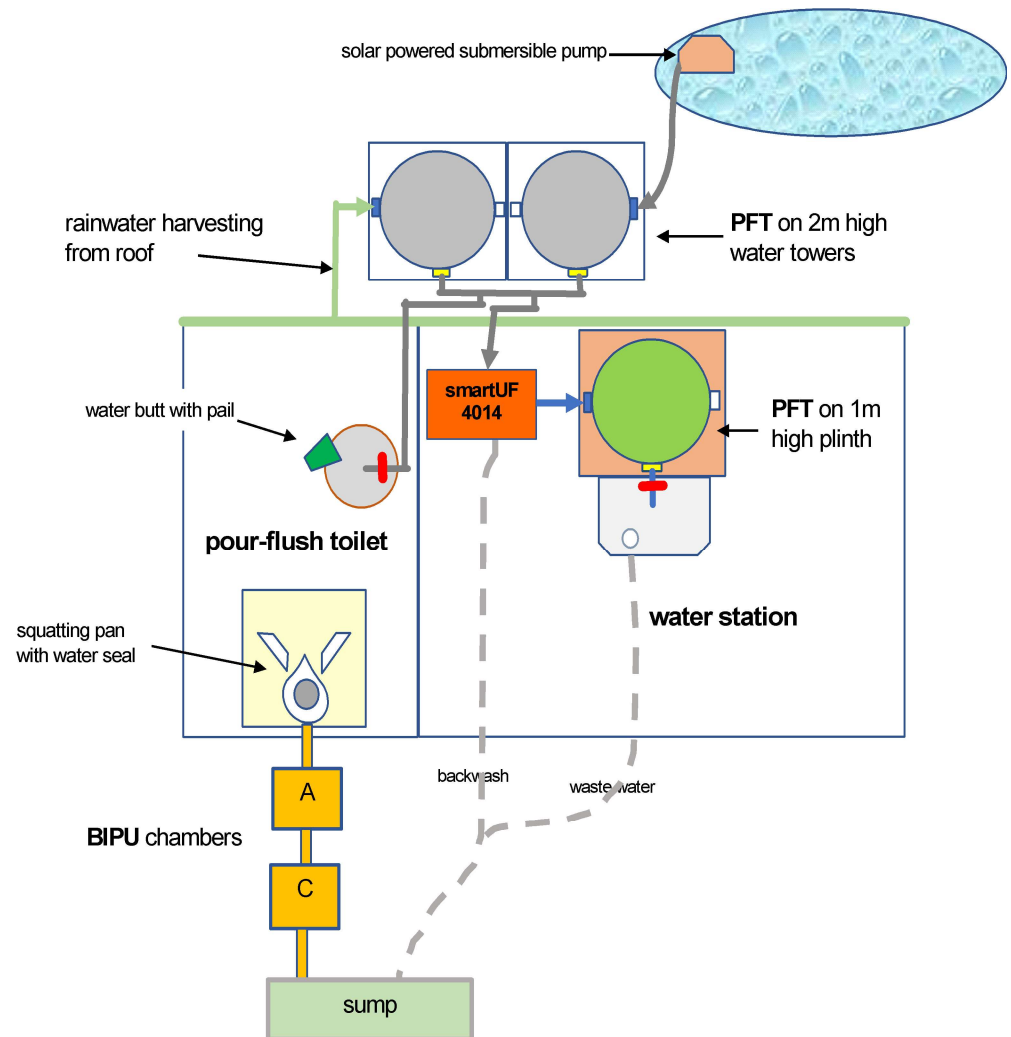
In-country supplies -

- Toilet units
- Submersible pump
- Solar panel and/or small petrol generator
- Plastic water butts and pails
- Metal roofing
- Cement
- All other plumbing and electrical materials

Locally supplied –

- All other construction material and labour

** Subject to change*



EXAMPLE 2 OF eWi WASH FACILITY LAYOUT

Larger household, small institution, water station plus hand basin, segregated pour-flush toilets

Suitable for up to 50 people

Supplied by eWI

- 1 smart UF 4014 unit and ancillary fittings
- 4 Pak Flat Tanks and ancillary fittings
- 3 BIPU chambers and ancillary fittings

Estimated cost, ex-factory – USD3,700*

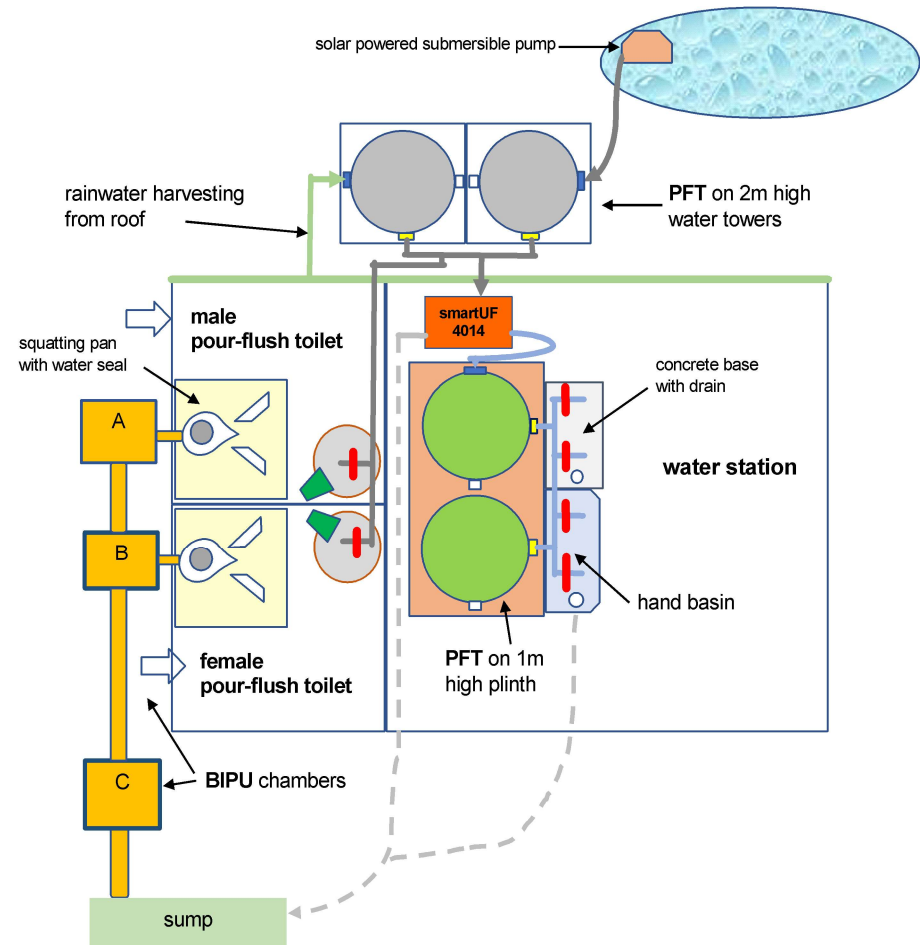
In-country supplies -

- Toilet units
- Submersible pump
- Solar panel and/or small petrol generator
- Plastic water butts and pails
- Metal roofing
- Cement
- All other plumbing and electrical materials

Locally supplied –

- All other construction material and labour

* Subject to change



EXAMPLE 3 OF eWi WASH FACILITY LAYOUT

Larger institution, water station and plus separate personal hygiene area, segregated pour-flush toilets.

Suitable for up to 150 people

Supplied by eWI

- 1 smart UF 5024 unit and ancillary fittings
- 9 Pak Flat Tanks and ancillary fittings
- 5 BIPU chambers and ancillary fittings

Estimated cost, ex-factory – USD7,250*

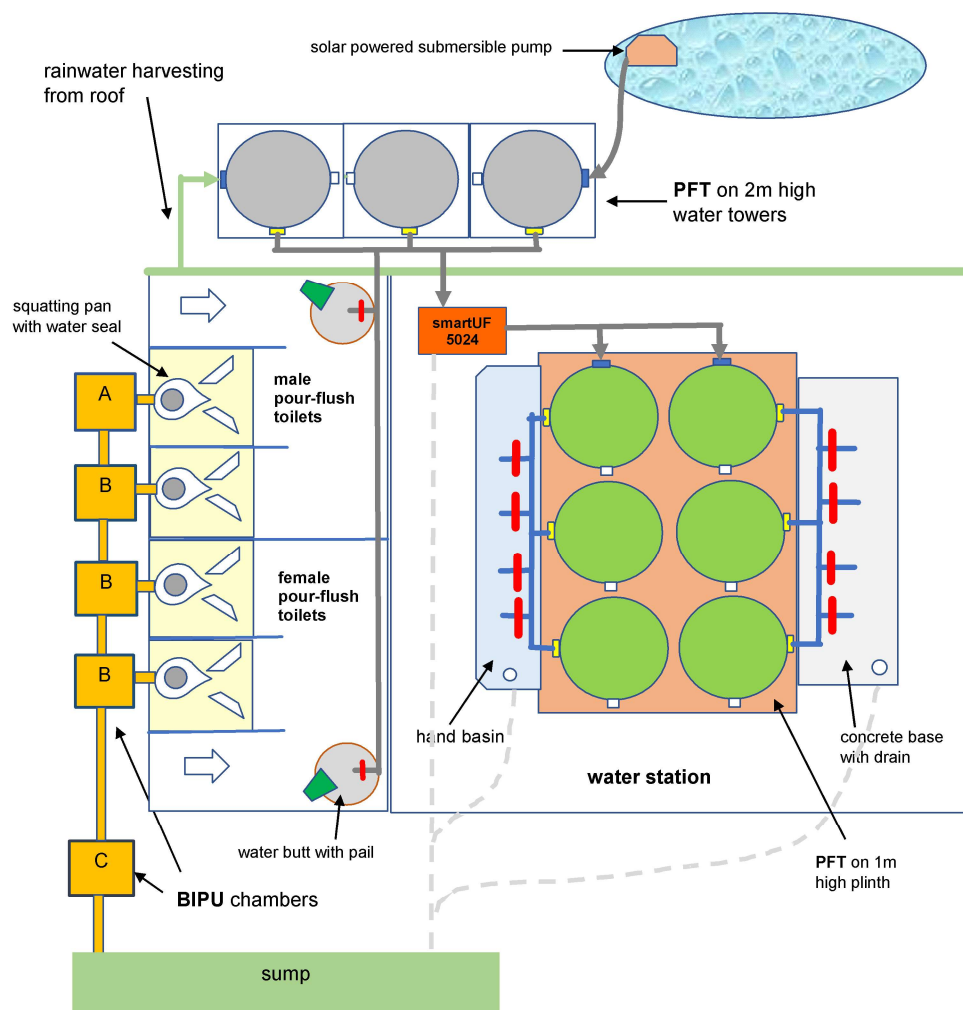
In-country supplies -

- Toilet units
- Submersible pump
- Solar panel and/or small petrol generator
- Plastic water butts and pails
- Metal roofing
- Cement
- All other plumbing and electrical materials

Locally supplied –

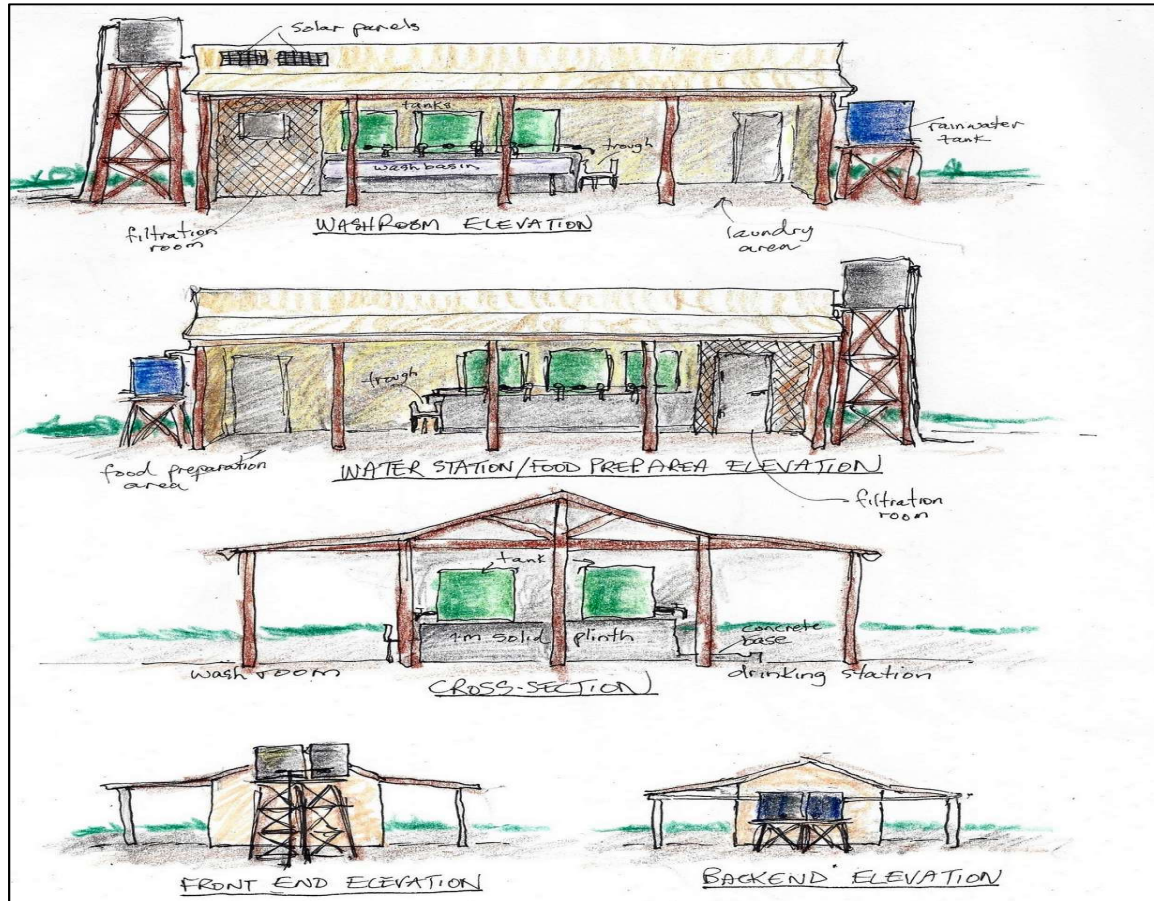
- All other construction material and labour

* Subject to change



IMPRESSION OF AN eWi WASH FACILITY

elevations of a water station catering for up to 150 users per day



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THANK YOU