RAINWATER

TITLE SLIDE

Rainwater Collection Systems are like PV Sytems in that

1.The first step is to reduce your use.

2.Match your system to your needs. Eg TPF/ 21

3.Capacity depends on available collection roof space.

4.Use small scale decentralized systems to collect an untapped resource to reduce load on larger centralized systems.

5. You can “Grid connect “ your water. (more on that later.)

6. Currently undercoing change of Technology and Legislation.

Unlike PV System in that due to costs of water/infrastructure and rebates currently no economic beneffit

AREAS COVERED

COLLECTION

Elements of the Collection part of the system are

Roof. (How does the water got from the front corner out to the tanks at the back?)

Gutters, gutter guards, under gutter guards

Leaf eaters

First flush diverters

Silt trap

Top of tank filter

ROOF COLLECTION FORMULA

GUTTERS

Gutters. Ive used smoothline gutters with an increased angle of incline. Have found all gutter guards to be ineffectual. Better to design to avoid leaves.

Undergutter outlets

SMARTFLOW GUTTERS

LEAF EATER

FIRST FLUSH DIVERTERS

Recommended between 0.5 to 2 liters per sq/m of roof area depending on level of pollution. Some designs capture this water for nonpottable uses.

STORAGE ABOVE GROUND

Above ground – plastic, galv with aquaplate, concrete. Cheaper and can be gravity feed.

BELOW GROUND Below ground – concrete, plastic (partially submerged) atlantis. More expensive however in areas where land costs a lot it can be like buying your land back. Sandy soils.

BLADDERS ETC

Bladders , water walls, slimline tanks. Smaller or non circular tanks more expensive per/ liter.

DELIVERY

Gravity feed. Cheap and uses no power. Only use on garden or ponds.

Header tanks. Heavy and not enough pressure to run most appliances.

Constant pressure pumps.

When the tanks run out…Manual taps, Float system to run mains into tank, Water Switch.

In-line filter ( disc filter more robust)

Backflow prevention device.

WATERBOY

STORAGE

How long is a piece of string? Perth actually has a fair bit of rain but all over winter with long summer so STORAGE is the problem.

Average Fremantle household uses aprox 300 000litres per year of which half is used on the garden …so to be self contained you could need to store 225 000litres.

That would require a 400sq/ m roof and a tank bigger than the average freo house.

S and T use only about 40 000 l/ per year so for us 30 000 liter storage would meet our needs completely.

That’s assuming that we are happy to use rainwater for drinking, showering etc. And that we have our tanks pumped and plumbed.

A 3000 to 6000 liter tank, if its connected to mains water supply should meet a reasonably conservative households needs for all of winter and some of spring. This means over winter they don’t use any mains water….Dams currently about 18% full….so its using existing storage infrastructure a bit like grid connect solar.

IS IT SAFE TO DRINK? – quote one

Chlorine is banned in some European countries due to its links to birth defects and brain cancer.

Remember the Guardia outbreak in Sydney's water supply?

IS IT SAFE TO DRINK – quote two

WATER A VALUABLE RESOURCE