

New valve will improve the performance of struggling water reticulation systems

Providing and maintaining a secure, reliable reticulated potable water supply has long been a problem for the local councils that serve rural and regional communities throughout Australia. Smaller townships in particular all too often have a system that is unable to deliver a consistent flow to houses because mains are under-sized or have low pressure problems. As a result water flow at peak periods can reduce to a trickle.

In many such communities residents rely on water from their rainwater tanks to augment the town supply and to help sustain an acceptable flow over the day however the success of this measure requires regular rainfall to keep tanks topped up.

Product design specialists, Applidyne Australia have come up with an answer in the form of a unique pressurised valve that can be easily and cheaply fitted to the pipe that delivers water from the mains to the home.

Developed in conjunction with Salisbury Council in South Australia, a local authority renowned for its proactive water solutions, the valve allows a regulated “slow” fill from the town supply into residents’ rainwater tanks at a rate the town system can sustain. Readily adjustable set-points control the ingress of town water, cutting off the flow when it reaches the desired level within the tank. This level can be set to provide sufficient for daily needs while still leaving space to collect rain.

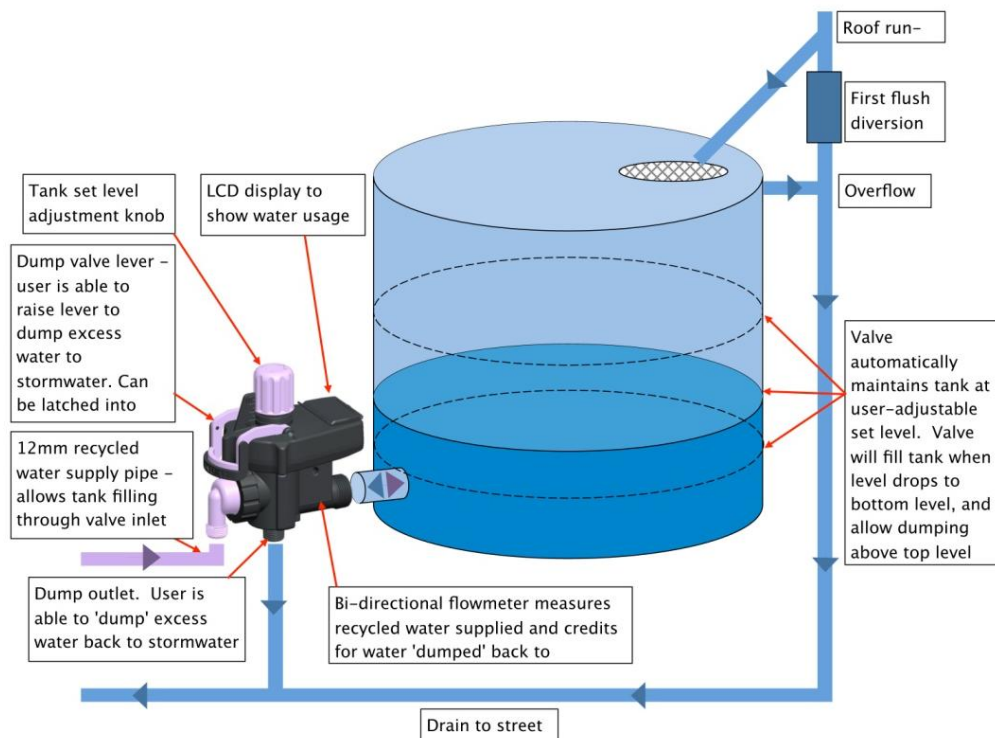


The whole system ensures households always have sufficient water at reasonable pressure for their daily requirements.

“Our development means the efficiency of local reticulation systems can be substantially enhanced without a major investment in infrastructure such as a full size new water main and pump stations. The valves essentially “shave” demand from peak periods by flattening out the supply curve. They are not costly (we estimate around \$200 each) and are easy to install,” says Paul van de Loo, managing director of Applidyne Australia.

According to Paul, the valve also has a role in reuse applications, particularly the collection and distribution of stormwater. He says local government authorities throughout Australia are actively pursuing schemes to promote the reuse of stormwater. These include the provision of treated stormwater to homes through a small- diameter reticulation system which is of course far less expensive than a full flow system.

A disadvantage however is that small bore systems do not provide sufficient flow rate for many domestic purposes such as running a garden sprinkler or washing a car. One solution is to provide each home with a rainwater tank to receive the recycled water and a pressure pump to provide required flow rates. The Applidyne valve can be fitted to the tank inlet pipe allowing a slow fill to an agreed cut-off point, again leaving room for stormwater in the event of a downpour. When the tank overfills, water is dumped into the stormwater system. A two-way flow meter on the valve registers the volume of recycled water accepted by the householder from the reticulation system and also that of stormwater dumped from the tank.



It is anticipated that as prices for potable water continue to rise substantially, householders will seek to reduce their bills by maximising their rainwater harvest and utilising recycled water. By detaining stormwater and releasing into road drains, householders are aiding the performance of their council's often over-stretched stormwater handling facilities. This local detention can assist in increasing regional level stormwater harvesting. Less water flows to sea, more is available for reuse.

Following the principle under which householders receive payment for excess electricity produced from solar panels on their homes and fed back into the grid, in future councils may choose to utilise the dual metering function of the valve to reward those householders who 'help out' by reducing the load on drainage infrastructure.

Applidyne Australia has developed the valve to advanced prototype level and is currently seeking parties who can assist in both an extended trial and product commercialisation.

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