classy green DESIGN

There are many lifestyle changes we can make that will benefit the environment

PHOTOS: PETER CLARK

Knowing were to start making your home and garden more water wise can be daunting. Luckily there are people like Luke Middleton, a Melbourne-based designer with a talent for ecodesign, who can help guide you to the right solution. He is especially interested in creating smart water-saving ideas for homes and gardens. Many of his designs are so creative that the Smart Water Fund, a government body set up to reduce Victoria's demand on water, is financing some of his projects.

Going green doesn't mean you have to settle for second-rate style. Luke is adept at marrying good design with sustainable principles, describing his designs as "classy green". But before agreeing to take on a client, he insists they install a water tank.

"They're there, but no-one sees them. You don't want water-saving devices to be dominant. It's the garden and home that should be centre stage," he says as we survey the site of one of his projects: an inner city Melbourne home with the tiniest of backyards. Unaware of it, I am standing on a 5,000L tank.

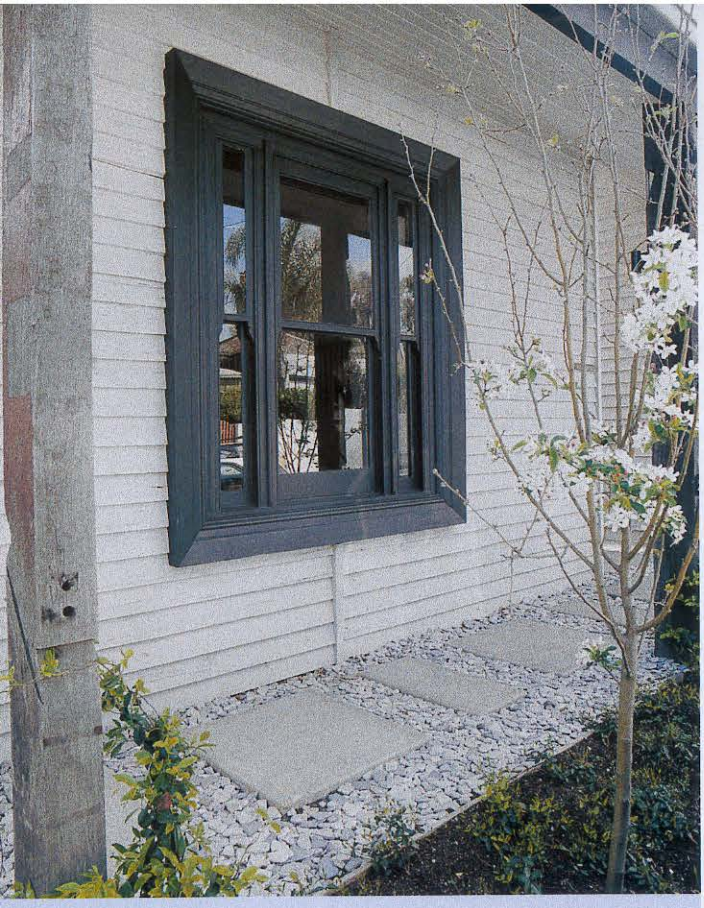
If you are in the process of designing a home, ask your architect (and landscaper if using one) to look at water-smart options that can be incorporated at the planning stage of the design. Doing this early in the planning process saves time, money and future troubles. In this instance, Luke's client asked Paul Bangay to design the garden, with Luke having an input into water conservation ideas as well as designing the home.

Planning tank installation up-front

After the old house was demolished, Luke had the water tank and its plumbing system installed. This occurred well before work began on the new home or the landscaping. Once the new house was completed all access to the rear would be cut off, and only by using a crane could anything large be installed—an expensive exercise. By getting in early, all Luke had to do was roll the tank and slip it into the hole dug by the contractor who had just demolished the old dwelling.

Luke worked out the roof area to determine the size of the tank. He had to ensure that the downpipes into, and out of, the tank would be able to handle a torrential downpour. If they couldn't, there was a chance the pipes would fill up and flow over the gutters, causing water damage to the house.

Once the new house was completed, garden designer Paul Bangay set about installing the garden. To hide the tank, Paul used wooden decking over the 4m x 8m courtyard with large built-in planter boxes along the perimeter. The decking meant that the yard remained permeable to water and the



ABOVE: The large granite-like stones allow water to penetrate the soil profile instead of the stormwater system; BELOW: The raised garden beds are watered via a tank connected to an electric pump and then drippers.

opening of the tank was accessible. Paul wanted a simple contrast between the timber and the stone rendered walls so the plants would be the focus and able to survive on minimal water, in this case *Acmena smithii*. In the front, Paul used chunky granite-like stones (Indo Flat Grey from Decor Pebble) instead of hard paving. They allow water to penetrate the soil profile to be returned to its natural environment, and they don't shift around like smaller stones often do when driven or walked on.

Under the Council residential code, you only need to have 20 per cent of the block permeable (the area in which water must drain into the soil). The result is that 80 per cent of rainwater from the block disappears as run-off from gutters or hard surfaces like concrete and paving. If you can, reduce run-off by making it possible for more water to soak into the soil. Less run-off results in less stormwater being discharged into rivers and bays, at the same time replenishing the underground water table. With the decking, stones and tank, the amount of run-off from this property is being reduced by 70 per cent.

"Did you know that 90 per cent of urban rainfall is not collected? Instead it runs along gutters taking in pollutants that then find their way into our natural waterways. If we can reduce this by a small percentage the effect is astounding."

Long-term water management

The water collected from the roofline is held in the underground tank and used to water the garden and flush the toilets. With the help of the tank, this home and garden uses 100L per person, per day of paid mains water, whereas a normal house uses 380L. This saves the household a staggering 4000L per month.

Watering the garden is the same as a normal irrigation system that has solenoids connected to an automated timer. The only difference being that when a tap or solenoid is turned on (or a toilet flushed) a pressure pump is activated and delivers the water from the tank. While it's not essential, Luke has also added a water meter to the pressure pump. He finds people like to see the facts rather than just hear about them. Being able to see the meter clicking over helps them to become more aware of water usage and even more water savvy.

"If people understand how much water they save, it will help convince others," says Luke. If the tank is empty, the pump switches off and the system automatically diverts back to being supplied by mains water. If the tank is full, a 100mm PVC pipe quickly channels the excess water back to the stormwater.

Luke believes we also need to look at tank installation as an environmental asset. Owning a tank puts you more in tune with nature and offers a long-term strategy for water management. Country people understand this first-hand, whereas many city people are still oblivious. Seeing a tank emptying in summer makes you realise what a precious commodity water is.

"If you need a monetary excuse then speak with a real estate agent. They say a tank adds value to the home. My ethos is to make the water-saving features have a minimal impact on the building, but maximum usability."

Story: Peter de Waart

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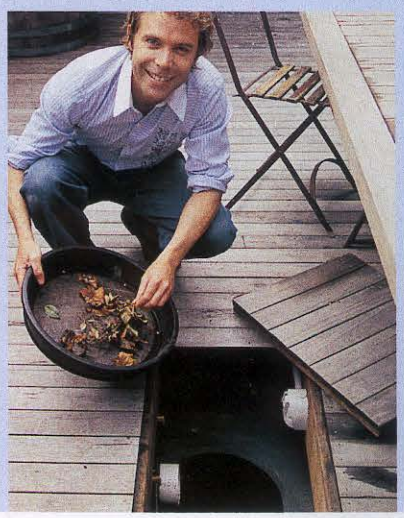
Getting clever

Luke's ideas are not restricted to water saving. He has created a visually attractive body of water at the front entrance, but its role is more important than being pleasing to the eye. The shallow reservoir cools the house in summer. It acts on the principle of the Coolgardie safe or waterbag used by people living in dry parts of Australia. This canvas bag is usually attached to the front of a car or suspended from a shady tree. As water seeps through the material, it evaporates and cools the water in the bag. In this case as the water evaporates, the cool breeze it creates enters via windows positioned just above the waterline.



All about water tanks

It makes financial and water-saving sense to consider using the largest tank possible. The cost per litre of installing a 10,000L tank compared to a 1000L tank is much the same. The hole still needs to be dug and all the necessary plumbing, including the pump, is identical. As a guide for tank size, a medium house with a 100sqm roofline in an average rainfall area will collect almost all of the water, so you'll need a 5,500L tank. If you live in an area which experiences a one-in-five-year dry spell, then a 7,500L tank for the same house is more suitable. If, as in this case, the tank is to be submerged, Luke says you need to buy a tank with thicker-than-normal walls because there is a huge load bearing down on the sides when the soil is backfilled.