

Natural swimming pools

Dive into crystal-clear, chemical-free pools



BIONOVA NATURAL POOLS AUSTRALIA

There are few things better than diving into some cool water on a hot summer's day, but with water an increasingly scarce commodity in Australia, home pools are increasingly controversial. Pools are notorious for losing water from evaporation, not to mention the volume of water lost through backwash discharge via filtration systems, leakage, cleaning and so on. Some estimates have pools losing from four to five times their volume each year. Pools are also energy guzzlers, with the average pool's pumps and filters chewing through 2,200 kW per year.

Installing a pool is something not to be done lightly, but not every part of Australia is water-stressed and if you do want to install one, there are plenty of things you can do to minimise its impact on the environment.

For existing pools you should have a good pool cover, which can help to reduce evaporation by up to 90%. Installing a cartridge filter instead of a

sand filter, which uses a lot more water, will also help. And installing a rainwater tank to top up your pool is of obvious benefit. To save energy, solar pumps are available, as are solar pool heaters.

If you're in the market for a new pool, there is even more you can do – such as installing a chemical-free pool.

European countries have been installing natural pools for years. Now a handful of pool design companies have brought the technology to Australia, and are adapting it to Australian conditions.

What is a natural pool?

Natural pools mimic the biological "filter systems" you'd find in a natural stream and pool. As long as you create the right environment, nature – supported by pool system technology – will take care of the rest. Impurities like decomposing plants and bacteria are filtered out by plants and by a specially designed, multilayered gravel filtration system.



AQUAVIVA AUSTRALIA

other to bathe with and they were more than happy with that, so it is amazing what adjustments people are willing to make."

James reports most visitors come from Sydney and Melbourne or Europe, and the average length of stay is about two to four days. "People really want to be as close to nature as they can without roughing it too much.

"We supply breakfast, so you come here with a bit of food for your other meals and you don't have to go anywhere for the time you stay. You can completely relax away from all the mod cons of the rest of society," he says. ☑

- Designer:** Paradigm Architects www.paradigmarchitects.com.au
Builder: Owner Builder
Location: Broome, WA
Photography: Tim Silbert
- Features:**
- Stand-alone photovoltaic power system
 - 3000L Solahart solar hot water system
 - R2.5 Albany wool batt roof insulation
 - Steel portal frame with large recycled content
 - Light-weight materials to minimise heat load
 - Recycled jarrah and sustainably sourced western red and pacific cedar timber
 - Recycled karri flooring
 - Locally sourced concrete aggregates
 - Minimal glazing – use of timber shutters/ louvres
 - Predominantly fluorescent lighting
 - Cross-ventilation, high ceilings and ceiling fans for cooling
 - Thermal mass for cooling
 - Waste Water Gardens International grey and blackwater treatment systems
 - 4-star WELS-rated Pacific Premier and Fowler toilets
 - Minimum 3-star WELS-rated water fixtures
 - Low-VOC paints
 - Livos floor oils
 - Organoil timber sealing
 - Revegetation of site with native species



Australian natural pool designers adopt a two-pool system, where one pool is for swimming and the other is for regenerating the water via the biological filter. You can have the two pools merged in the one body of water or two separate pools – it depends on what you like and how much space you've got to work with.

Choosing the right size and depth for the biological filter pool is critical. Make it too small and shallow and temperature fluctuations will unbalance the equilibrium in the ecosystem. There's some difference of opinion between pool designers on what size biological filter pool is best to keep your swimming pool clean and healthy, but a rule of thumb is the bigger and deeper, the better.

If you are building an average-sized pool, say 36 metres square, you could need at least the same area for the biological filter pool. It seems a lot, especially for those with limited space, but think about how you could incorporate the filter pool creatively into the design of your garden. A filter pool needn't be one large body of water, like your conventional pool. It could consist of a waterfall, small ponds dotted throughout the garden, habitat for frogs, fish, birds. A good pool



designer can help you create an effective and beautiful filter pool that will be the feature of your garden. You can even have your filter pool in the front of the house and your swimming pool out the back.

Maintaining your natural pool

You maintain your natural filtration system the same way you'd maintain any garden: if plants die, you replace them. Key to keeping the water clean is to keep the water circulating, as, like any living body of water, it must be oxygen-rich to support the plants.

The circulation system is similar to what you'd have in a conventional pool. A skimmer takes out large leaves and other biomass, before the water flows through a secondary smaller filter. The pumps circulate the water, which helps keep the plants healthy.

Occasionally you need to check the pH and nutrient levels of the water to ensure the nitrate and phosphate levels are under control (high levels of nitrates and phosphates can cause algae blooms if left unchecked). Occasionally you will also need to clean out any debris with a pool vacuum and net.

Retrofitting an existing pool

Retrofitting a conventional pool to make it chemical-free is easier said than done. If you have enough room for the biological filter system you're halfway there, but to do the job properly you need to know about mechanical filters and pumps, plant ecology and so on. Be mindful that much of the available literature has been written with European conditions in mind, where chemical-free pools have been used for many years. It's a challenge for a DIY-type person, but not impossible.

For more information:

Water saving
www.savewater.com.au/how-to-save-water/in-the-home/pools-and-spas

Pool designers
www.bionovanaturalpools.com.au
 Australian chemical-free pool designer.
 Also www.mynaturalpool.com.au

Natural Swimming Pools: A guide for building
 by Michael Littlemore, Agrimedia, Germany, 2008

"Swimming pond" enthusiast
 Dave Keenan has a yahoo group where you can go for more information:
www.groups.yahoo.com/group/swimming-ponds