

SYNERGY

THE TERRACOTTEM ADVANTAGE

PLANTING
AT THE

RED CENTRE



Arnold Baird (Horticulturist) and Ashley Swan (apprentice Horticulturist) working out in the Desert Rivers habitat of the Alice Springs Desert Park.

If you assume that managing landscapes in a place like Alice Springs is a challenge, you'd be right. The extremes in temperature and low rainfall must be factored in, or as Gary Dinham puts it, "If you try to work against nature, it will knock you down." Having said that there's also a fair share of fun to be had when working with desert plants... [Read on >>>](#)

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TERRACOTTEM
Soil Conditioner

Gary is the assistant botanical curator at Alice Springs Desert Park - a zoo, cultural museum and fully fledged botanical gardens rolled into one. It's almost unique (there is only one other like it, the Sonora Desert Museum in Tucson, Arizona) and its aim is simple: to present the plants, animals and culture of central Australia. "Deserts are full of life and are worth preserving. If people walk out of here understanding this, we've had a win. Our exit becomes their entrance to the real desert."

Working with 1300 hectares set aside near Alice Springs, 54 of these were developed under a master plan drawn up in the early 1990s. Works were completed in '96 and after eight months of intense landscaping, the Desert Park was officially opened. Arranged around a walking circuit, the plant and animal species are exhibited not by species but in recreated habitat groupings. Animal exhibits merge into the landscapes and the aim is to immerse people in as realistic a series of settings as possible. Exit surveys consistently rate the experience at 95% and over, so the Park's team of keepers, cultural guides and horticulturalists is obviously dedicated and skilled. "There's always a better way of doing something - the hard part is just working out what that is."

Before joining the Desert Park, Gary was already familiar with the desert, creating and later managing the landscape at the Yulara Resort at Uluru - something quite different from recreating nature. "Some of the fundamentals go out the window - we prune with our boots at Desert Park." And they do, literally, because there are no neat saw marks in nature. They'll also carefully document a piece of fallen timber in the wild - literally, how it's resting - so that they can arrange it again when they've brought it into the Park. And that's not all. Where most landscape managers would source their plants with an order form, in the case of the Desert Park, staff head out with a collector's licence.

Armed with collecting gear and a GPS, living and herbarium specimens are collected over an area just north of Tennant Creek and out to all the Northern Territory borders. This is true botanical work, carried out in taxonomic best practice, so that each plant collected brings with it data on its exact location in the wild, planting densities, other plant associations and more. These plants are then used to propagate stock for planting out into the park - 15,000 were needed for that initial planting - and the information brought back from collecting trips plays a key role in establishing the Park's sub-habitats. "You need to have a bit of an idea and an eye for the structure of habitats: how plant groupings sit; how seed is carried. We've discovered that the more random your plant placement, the more authentic it looks."

Behind the scenes, or rather, beneath the soil, a mix of horticultural and agricultural irrigation delivers water in a regimen of infrequent but deep waterings. Wildflower seed is broadcast by hand and their germination triggered by overhead deluges. Most other new plantings are timed to maximise their chances of surviving the summer - planted in autumn when the daytime temperatures don't go over 30 degrees and hardened up over winter.

And on top of this, up until two years ago, the planting regimen involved a series of products - water crystals and fertilisers - mixed together, with mixed results. "But now we use TerraCottem which has the water storage polymers, the fertilisers and the root growth promoters. It's a one stop shop. We want to give the collections every chance."

Strangely, Gary and the team also maintain what must be the antithesis of the Desert Park, the traditional-styled gardens of the Old Courthouse and Residency in the centre of Alice Springs. Here too TerraCottem is part of the planting to help the roses, lavenders and bulbs thrive in the hostile setting.

GREENING A RED TOWN

While the team are working hard to recreate a series of desert landscapes over at the Alice Springs Desert Park, people like Grant Ohlmus, a landscape contractor under government contract, is working to maintain the town's green asset.

"We make use of a lot of local species because they're designed to deal with our extremes - acacias, eucalypts, grasses - even other Australian species which can deal with similar rainfall and the heat and cold."

However a fair amount of planting goes into areas without irrigation - median strips and road sides - and this takes a lot of potential species out of the equation. A number of tree species like the napunyah (*Eucalyptus thozetiana*) have shown themselves to be fantastic performers which is no surprise since there are some very mature specimens found growing in and around town. "Over the last two or more years we've planted close to 600 of these trees."

Prior to TerraCottem arriving on the scene, the establishment watering regime involved a twice weekly watering for the first month, delivering 40 litres to each tree via a green well (the plastic rim is sunk at around 450 mm and mulched with rock). For the following six months this was backed off to once a week, then once a fortnight for the next 12 months. The trees were planted with the addition of organic matter into the soil to aid water retention, and a low phosphorous slow release fertiliser. "We weren't overly happy with the results as a lot of effort went into planting each tree. It's been difficult to control the volumes of additives, and there's been a noticeable difference in growth rates."

Enter TerraCottem, which was first trialled in the area about 160km to the north of town in a rest area. With once a fortnight watering the result was impressive. As a result, Grant recently planted a varied collection of 250 trees in a loose avenue planting. Most were planted with TerraCottem and, as an anecdotal control measure, some were planted without.

"We watered when the trees were planted, then again at both the start of the following week and at its end. Despite temperatures in the mid 30s, the soil moisture levels showed that it was wet enough not to water for another week. Checking again a week later we decided to establish a routine of watering every second week - in other words, following the establishment watering, we'd moved straight into fortnightly watering."

It's early days yet, but Grant is the man on the ground with an opinion. "The growth's been good and we've halved the water." He also has some advice on using TerraCottem. "It's critical that you use the stuff properly. It's not cheap but if you look at the cost of a \$14 tree on the day it's planted, and remember that it will be worth thousands in ten years, spending \$2 per tree once off - there's no need to reapply and there's less chance you'll have to replace the tree - is worth it."

A hole this size needs about 80 cents worth of TerraCottem, a small investment for success.



Left: Given climate change was a major conference theme, it was good to see steps had been taken to offset the carbon emissions generated by the conference itself. Here (L to R) Dr Graeme Pearman, Interim Director, Monash Sustainability Institute; Steve Mason, National President of the Parks and Leisure Australia and Councillor Tony Mooney, Mayor of the City of Townsville plant a tree as part of the Ross River Biosequestration project. And like everything planted in Townsville, they used TerraCottem.



Right: Enjoying the shade provided by the only mature tree at the Ross River Biosequestration project - a promise of things to come - are: (L to R) Ron Degenhart (City of Townsville), Garry Henshall (PLA), Steve Mason (PLA), Russell James (TerraCottem), Dr Graeme Pearman (Monash Sustainability Institute), and (with his back to camera) Colin Wise (TerraCottem).



Left: Tarrant Baguley and Julie Roach (Parks & Services, Townsville).



Right: Conferences are a great way to catch up with people and ideas. At the TerraCottem stand (L to R) Terry Herbert, Parks Manager, Coffs Harbour City Council, caught up with TerraCottem's Tarrant Baguley and Greg Plummer.



Here's a mini re-visit of the Parks and Leisure National Conference held in Townsville. For those who weren't able to make it, two key themes dominated: accepting and minimising climate change, and the benefits of investing in people. And while we all deal with our fair share of difficult projects, seeing what's been achieved in Townsville was an inspiration. We heard it like it is: a tough climate - hot, and not wet as most people assume - and with horrible soils. However, it's obvious that with the right knowledge and skills you can achieve world class results like those we saw at both the Riverway project in Thuringowa and Townsville's own Strand.

TOWNSVILLE ROUND-UP

Left: The conference wasn't all indoor presentations, and on the day filled with technical tours, delegates converged for lunch at the amazing Riverway waterfront development, at Thuringowa - another project which happens to have been planted with TerraCottem.



Right: It may not be too macho, but it's the way TerraCottem's Russell James travelled while on Magnetic Island.



USING WATER WISELY ON THE FORESHORE



There's no question endorsement by dollars counts for a great deal. Take a look at this press release issued by the City of Geraldton WA. We couldn't say it better...

The City of Geraldton will be using cutting edge technology to ensure that the redeveloped Foreshore area is water smart and efficient.

The City received a Community Water Grant of \$45,455 from the Federal Government for the purchase of a soil conditioner. This hydro-absorbent copolymer product called TerraCottem, will be added to the soil of the redeveloped Foreshore area, reducing the reticulated water requirement by a massive 50%.

Since the Foreshore Redevelopment is the biggest project the City of Geraldton has ever undertaken, the City has been very keen to make the development as environmentally friendly and sustainable as possible.

Mark Wong, City of Geraldton's Environmental Services Coordinator, said the use of a soil conditioner not only saved water but had many other benefits.

"Not only does the use of it mean greater water efficiency but it also improves plant and root growth. Trials have shown that less fertiliser is needed and it also helps in the survival rate of plants, which is particularly relevant with the new plantings that will occur in the foreshore area.

TerraCottem is a product that has been accredited by the Smart Approved Watermark Scheme, which is managed by Australia's peak water agencies, for a direct connection between use of the product and water savings

This is the second grant the City of Geraldton has received in relation to saving water on the redeveloped foreshore. In 2005 they were successful in gaining funding to create a process that will re-use storm water to irrigate the foreshore.

The storm water will be collected from an industrial site near Cream Street, and will be used to recycle and recharge a freshwater lens that overlays a brackish groundwater aquifer. A flow control has been installed on each bore depending upon the specific irrigation requirements. This initiative will further reduce the requirement to purchase valuable Water Corporation scheme water.

WHAT IS TERRACOTTEM?

TerraCottem is a tough one to understand, probably because it works on various fronts at the same time. So let's keep things simple,...

To start with, TerraCottem uses two main mechanisms to encourage substantial root development – polymers and root growth precursors.

Let's start with the polymers which are a little like water-holding crystals except that TerraCottem's hydroabsorbent copolymers have been carefully selected and well researched. This means that instead of just one polymer with a narrow water-holding and water-releasing ability, there is a group of them providing the same function over a wide range. To put it crudely, more water can be stored and released under a broader variety of conditions. (And for those who question toxicity, TerraCottem's co-polymers are potassium-based and non-toxic unlike sodium-based water crystal products which are most often used in nappies.)

Now, let's talk about the root growth precursors. By definition, a precursor is a chemical compound which leads to another. The precursors found in TerraCottem do exactly this, and for a very good reason. If you put growth hormones into soil, they rapidly biodegrade. But if you put precursors into the root zone, the plants get a kick-start by synthesising their own growth hormones. And this conducive environment – for optimum cell division and elongation – stays like this for 12 months.

Then there is a nicely varied collection of plant nutrients – soluble mineral fertilisers, in a format suited to the early growth phase of a plant; slow release fertilisers, designed to offer a constant source of food over many months; and synthesised organic fertilisers which focus on the soil, stimulating microbiological activity and general soil health.

Add this all together and the result, at least initially is fast and furious root establishment. And this means greater accessibility to water, fewer losses, and, given the reciprocal dynamic between roots and canopy, noticeably vigorous growth.

