

SYNERGY

THE TERRACOTTEM ADVANTAGE

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WHYALLA'S SMART GREEN PITS

Greening a city like Whyalla isn't for the faint-hearted. Sitting on the Spencer Gulf, it's described by the city's own Project Manager Landscape, as a desert. And Sam Bourne doesn't stop there. "It's very arid - we get around 270mm of rain a year, and there isn't any fresh ground water." He goes on encouragingly to say the soil is high in nitrogen, but then points out that it's sadly alkaline so the nutrient potential is locked away. Clearly this is a tough place to successfully establish plants.



You need to look twice to spot the clever thinking and engineering design behind the new plantings in and around Whyalla's rain pits with a difference.



Directing storm water into planting beds isn't a new idea, but it took some creative thinking to make it work in a city where umbrellas are rarely used. Note the seriously scaled rock mulch: it keeps the soil from blowing away and helps moderate the soil temperature beneath.

Not that Whyalla was settled with the aim of becoming the garden centre of South Australia's Eyre Peninsula. Its primary existence is due to the presence of iron ore at Iron Knob. In fact, until the blast furnace was built in the early 1940s, and a pipeline put in place to bring water in from the Murray River, Whyalla's municipal plantings featured no exotics such as maples and ash, but toughies from Western Australia out of necessity.

Then a waste-water recycling facility was commissioned a few years back, which has opened up the prospect for some serious greening – a timely co-incidence given many of the earlier street plantings were reaching the end of their lives. The Greening of Whyalla program has swung into action and over the past year or so, it's seen median plantings filled with Illawarra Flame (Brachychiton acerifolius), Jacarandas (J. mimosifolia) and Tuckeroos (Cupaniopsis anacardioides) among others. Irrigation is making this possible though it's still tough going, which is why Sam has made free use of thoughtful design and TerraCottem.

A rare shot of the these pit gardens in action during a rainfall event.



"I'd been given a couple of samples at a TREENET* symposium, and used them to re-pot a pair of junipers at home. Then I went away on holiday and when I came home I found them dry – one so light that it had blown over and it was baking on the paving." Without holding out much hope, Sam kept up the water for the next week or so and, as he puts it, they never looked back. "It made me think, and from that point on, I made sure we use TerraCottem in our plantings as an insurance policy, just in case something doesn't go to plan. It's a necessary step for us here, and it's proved highly worthwhile."

Appreciating TerraCottem's value as a buffer – a means to buy time till the next watering event – has led to a nifty less-orthodox approach to planting around the city. Using water-sensitive urban design principles, Sam and the team have created a modified version of the storm-water tree pit. Fifty or so have gone in during the last year, all including TerraCottem.

"Our pits are based on the usual design where the curb feeds water directly into a planting pit filled with a sand soil blended with TerraCottem. The pits are then capped with fist-sized rock ballast and when it does rain, the pits fill and the plants benefit. The TerraCottem hangs on to the water in the months between rainfall events – it gets them through between drinks. It has allowed us to put a greater volume of plant material, in more locations, with greater success." Whyalla's definitely looking greener.

*TREENET is the national urban tree research and education cluster, based at the University of Adelaide's Waite Arboretum, Urrbrae, South Australia.



Check out the unique formwork which aims to take in as much storm water runoff as possible: the TerraCottem in the soil mix stretches it as far as possible between showers.

IT'S ABOUT THE PEOPLE

Chris Fewster has been involved in constructing a fair share of Whyalla's planting pits, which isn't unexpected given he's a local lad who's been involved in a lot of the work that goes down around town generally. Almost born and bred (he arrived in Whyalla at the age of seven), he's been around long enough to know what needs to happen to produce a quality result. A self-professed plain speaker, Chris puts it out there, saying, "If there's no vision, no communication, and the decision is being made simply on a price basis, the outcome will be poor, especially in the longer term."

Having said that, he's quick to note the great relationship between Council, contractors like himself, and utilities such as SA Water, using one of the pit construction projects as an example. "We were working on Cudmore Terrace where the preform concrete islands were already in place. We'd checked with Dial Before You Dig, though in my experience I never rely on it, which is why we were digging down by hand. But we hit an old cast-iron water-pressure main running 600 down and parallel to the gutter. It cracked and sprang a leak. Now it would have been a different story if Sam Bourne from Council, John Coulter from SA Water and I didn't have the relationship that we do, but it was sorted. We all have the vision, so we worked together and we got the job done."

THE TC ADVANTAGE

TC Advantage is a package deal. It's about supplying TerraCottem (more about that in a minute), along with all the training, technical specification and compliance needed to turn a tricky project into a genuine long-term success. So when anyone has a turf, street tree, revegetation or whatever project to tackle, bringing in the TC Advantage expertise means you get: advice on which TerraCottem product to specify; training so that it's applied for maximum benefit; and monitoring to ensure compliance within the project's specs.

As for TerraCottem, it's a brilliant soil conditioning treatment because it works on various fronts at the same time...

To start with, it uses two main mechanisms to encourage substantial root development – polymers and root growth precursors. The polymers are a little like water-holding crystals except that TerraCottem's hydroabsorbent polymers 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, for years. To put it crudely, more water can be stored and released under a broader variety of conditions. (To put it precisely for specification purposes: TerraCottem has an absorption capacity of a minimum of 4500 g H₂O/100 g in distilled water using Method of Analysis CEN EN 13041, with a minimum of 90% of the water contained in the polymers being plant available.)

As for 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 is fast and furious root establishment. This means greater accessibility to water, fewer losses, and, given the reciprocal dynamic between roots and canopy, noticeably vigorous growth. In the longer term, the soil conditioning power of TerraCottem means that plantings are buffered from stress. It's great stuff.



TERRACOTTEM®

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