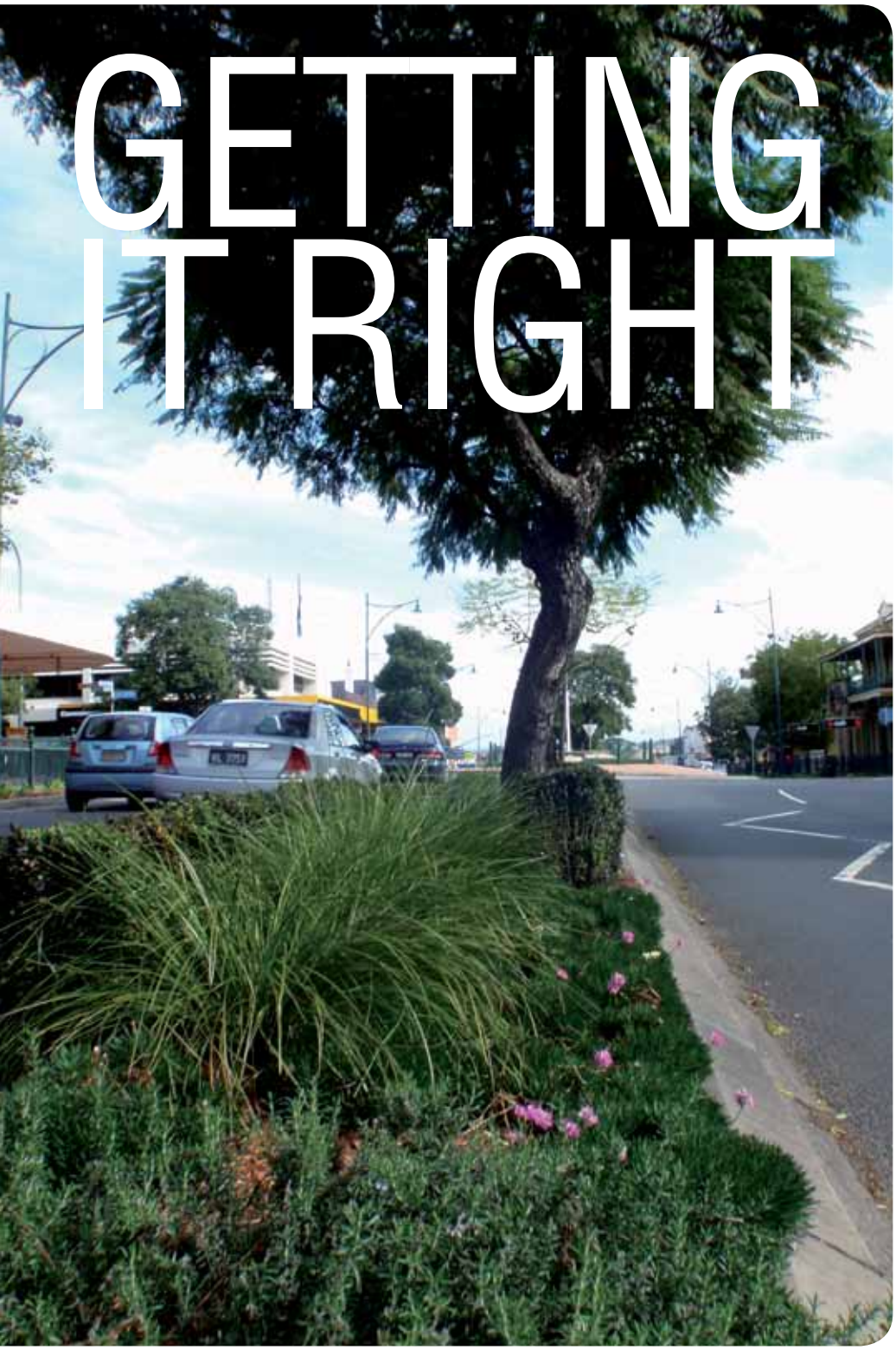
SYNERGY
THE TERRACOTTEM ADVANTAGE
ISSUE 9

Tucked away in Sydney's south west is Camden, the former 'seat' of one of Australia's founding fathers, John Macarthur, and thanks to the city's fair share of original buildings, it still has the character of a rural township complete with the classic Australian main street.

GETTING IT RIGHT



It's this street - Argyle Street - that was recently the focus of a major landscape project designed to accentuate the town's community hub. Landscape architect Derek Osborne of Arterra describes the brief.

"This was basically a turfed area, broken here and there by scrappy plantings of leggy, too-high shrubs and a loose avenue of old Jacarandas. Council wanted to give it a lift."

In the process of consultation other factors emerged which would ultimately influence the end design. "Council and the community wanted to retain the trees but they weren't in great health which is not surprising – it's a narrow area flanked with a road on each side - it wasn't the worst I've seen but not the best. Aesthetically turf can look very good under trees, but from a horticultural view-point there is a lot of competition and it was difficult to maintain in the middle of a busy street."

Prior to developing a concept, test holes were dug at intervals to assess the extent of the tree roots that would need to be negotiated during the works. Very few were found in the top 200mm of soil, the result possibly of a number of factors working together – compaction, turf, temperature extremes, dry conditions.

Despite the existing paved cross-over points, pedestrians were choosing their own way, a major source of the compaction.

The new design addressed all this. "We made use of blocks of planting, between five and ten metres long, broken in places so that as you drive slowly past a random pattern emerges. This massing has added dimension to what is a linear space, making use of highlight plantings – both in terms of flower and foliage colour – around the trees and at the newly-spaced cross-overs."

Another advantage to this design approach is that it has inbuilt flexibility. Any species that fail to perform as expected can be replaced with little disruption to the impact of the whole.

The responsibility of organising the contractors fell to Camden Council's Capital Works Engineer, Paul Fairweather. Turf removal, hard landscaping, soil remediation, irrigation and lighting – all were accomplished in a linear bed, with not much room to move around the existing trees.

Adam Beckingham of Lamond landscape contractors describes how it was done. "All existing turf was carefully stripped from around the advanced trees, this being done with a mini excavator and a very good operator."

At this point TerraCottem was added at the specified rate along with worm castings – "to create a biological base where microbial activity will be boosted which in turn improves nutrient availability" – and cultivated to a depth of 200mm.

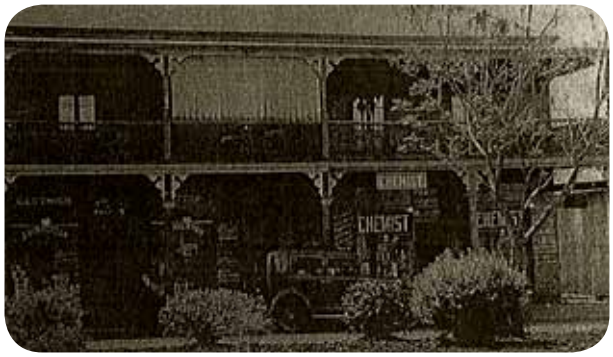
Things became more complicated when it was time to put in the conduits for the irrigation and lighting. Says Paul Fairweather, "We'd hoped to make use of the existing conduits but couldn't. Some, which weren't deep enough, we ended up encasing in concrete for safety. We also had to under-bore the road through the old macadam pavement. This is a section of the old Hume Highway and we were told that there'd be no way we'd get through, but we did, up and into the centre median without hitting the services." By the time all site preparation was done it was a little like the proverbial mad woman's knitting. "It didn't look like there was much room left for the plants." And in this case the planting density was high, with the sections of English Box sourced as advanced hedge almost 500 high.

As Adam explains, from go to whoa the project took three weeks. "Camden main street is busy, so we worked between six pm and six am the next day, five days a week, under lights." But the result has been worth it. "In the six months since planting the plants have established and are showing good signs of health."

Paul agrees. "We've had a minor loss here and there but otherwise it's looking good and the trees are looking much better." As for the community's response, "Apart from one crack about the caged tree lights looking like dingo cages, everyone has been really positive about the project. We've specified TerraCottem on other projects around Camden, and one in particular- the Narellan Urban Forest Cumberland Plain remnant woodland - has done really well with long periods without rain and no plant loss."

Adam's thoughts on TerraCottem are similar. "When we apply anything we use it as per manufacturer's instructions with no exceptions. It's a good product. It retains moisture in the soil – you can see it."

Camden's Argyle Street c 1935 with a young Jacaranda at right. (photo CHS)



STAT POWER

Anyone who was at last year's Parks and Leisure Conference will know that John Murray* won the TC sponsored award. John makes no secret that he thinks TerraCottem works, but that's not why he won.

Those people who heard him speak will know why. It's because he is worth putting up on a pedestal - an open space manager who deserves a closer look. His background, experience, methods and results are all good, and he's a no-nonsense person who is happy to share what he can with anyone, without a hint of smugness or self-promotion. He's also a record-keeper, so if you missed the chance to catch up with John at the conference, here's the essence of what he had to say. But before that, let's get a sense of the scope of his role at South Perth.

John's patch is small – 19.9 square kilometres, which includes 19 kilometres of Swan River frontage – but it's made up of a high proportion of green space to built environment (4.66 square kilometres to be precise). John and his team of 19 are responsible for everything green apart from the turf, and that includes the City's nursery.

As you'd expect, water for irrigation heavily influences the decisions of how best to manage these spaces. "We don't have a lot of water. The bores are licensed from the authority and we're told how much we can take each year. Given there's been up to a metre and a half loss in the bore heads, we're actively reducing and in some places eliminating our dependence on water."

And this they're doing though hydrozoning – in this case differentiating between active and passive recreation areas and irrigating accordingly. It may not be a ground-breaking approach, and neither is making these decisions based on accurate data collected over time. What is almost astonishing is that John actually has this data, and that's because he puts into practice what too many of us agree we should be doing, but, for whatever reason, don't. And he's been doing it for years...

"I was taught to do it right at the outset and I've done it in every job since. It started in viticulture, making notes: when we pruned; when we sprayed; what we sprayed; how much we put on. Keeping records is ridiculously easy. Without them you can't go back to work out what you did."

As John points out, it's even easier to keep records now that we've moved on from hard copy to spreadsheets. "I monitor growth each quarter, taking with me the last print out. I make my notes on the sheet then enter it into the spreadsheet later."

It was this combination - the need to use less water together with John's stash of rock-solid records - that led to South Perth's testing TerraCottem back in 1999. In short, John was limited by the water truck which was stretched trying to establish 200 new trees each year. He'd been looking for something to help the sandy soil retain precious water, and it was his own record keeping during trials that showed that TerraCottem was the answer. These same records would also help him convince those approving the purchase orders.

"I ran the trial for two years, planting some very poor tree stock from the old nursery in a range of situations. In each the last five trees were planted without TerraCottem and in every case they died. We replanted several more times and again they failed. On the fourth planting we used TerraCottem and they thrived."

But there was more to be gained than just survival. "The photos tell the best story but the measurements backed up their overall performance. So I went to the boss with the requisition and when he picked himself off the floor – it's not cheap stuff – I said, "Look at this. Look at what this stuff's done", and there was no argument about the savings."

Obviously record keeping pays off. In this case South Perth is being made greener with less water and less money – the data proves it. "We've gone from 200 trees planted per year, up to 1200 using no extra resources apart from the TerraCottem."

Bodkin Park living stream, (above) at planting in August 2007, and again two years later (left): clay soil on top of a Bassendean sand base; boggy in winter, rock hard in summer; all pre-existing turf irrigation removed; no manual watering; Terracottem applied with all plantings.

For anyone thinking of making better use of data collection – which for John has proved to be an essential adaptive management tool – here are some tips from the man himself.

Be factual. Keep your notes short. It may seem obvious to say so, but note both what the planting stock looks like and when it was planted. Make a record of how the soil was amended – with what and how much, and in the case of a trial, which plants are to act as the control. Then monitor progress quarterly, noting height, girth and an overall sense of their performance. Tuck it all away in a spread sheet and just keep adding in the updates.

*John's family ran Wilson & Johns (1895–1966), the famous Western Australian wholesale and retail nursery; he's spent 35 years in horticulture and is currently Streetscapes and Environment Supervisor for the City of South Perth.

Tarrant Baguley of TC Advantage (Australia) in Belgium with TerraCottem International's R&D Manager, Dr Davy Ottevaere: here getting the tour of the trials - done in conjunction with independent research - where maize is used to assess the performance of TerraCottem in a range of soils.

TERRACOTTEM X3

Here's some news. There are now three TerraCottem products to choose from. TC Advantage's Russell James walks us through the options

TerraCottem Universal: This is the TerraCottem we all know, probably best described as the 'original recipe' except that the Belgium science that developed it in the first place can't help but continue to tweak that recipe and make it better. In fact, ongoing research has fiddled a bit with the copolymers and growth stimulants, but it's essentially the same beast, designed to do what it does so well: to help plants survive in tough conditions. This is still the TerraCottem to use in most applications – trees, shrubs, revegetation, roof gardens and general turf.

TerraCottem Turf: Now this one's new and it's special because it's been developed specifically for high-end-use turf areas. Developed with input from turf experts it contains a zeolite base, selected from around 50 options following three years of trials. The zeolite has an even better water-holding capacity than the base material used in TerraCottem Universal (a pyroclastic rock) as well as a boosted cation exchange capacity. They've also added in humic acid and turf-specific nutrients among other things, so that the whole product manages to shorten the time it takes to get a high-use playing surface back into action between seasons. This is the product to use for top-shelf reconditioning or establishment following reconstruction, for example, ovals or putting greens.

TerraCottem Complement: Here's a product that has a very specific use. It was developed originally for agricultural users who were losing TerraCottem each time they pulled a crop from the soil. Complement's ingredient ratio is different, so that when it's applied, it doesn't overload the soil with copolymers, but it does make sure the plants get the full benefit of the nutrients and root stimulants.

What is TerraCottem?

TerraCottem does a great job because it works on various fronts at the same time...

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

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

TC Advantage Pty. Ltd. FREECALL 1800 658 281. Email: info@terracottem.com.au.
Web: www.terracottem.com.au

TERRACOTTEM®