

Injection of hope

FIVE MINUTES FROM TUNBRIDGE WELLS IN KENT, Tamillek Tree Care's Matt Woolger, Julian Furnell and newest team member James Sutton (part-time arboriculture degree student, Plumpton College) order breakfast in the Blue Boys Café. Over a 'full monty', they discuss the first job of the day, a civic-spirited pro-bono 'aeration and donation' (decompaction and soil injection) of the root zones of two highly valued Horse chestnut trees at Brenchley and Matfield cricket ground, for their local parish council. Before carrying out the project, Tamillek agreed to demonstrate to us the latest acquisition in their tree health/soil management toolkit, the VOGT Geo Injector. **Carolyn Locher** revisited them to see the machine in action.

We first met Tamillek Tree Care on site in Dunorlan Park, Tunbridge Wells, two years ago (*essentialARB* Issue 33). They were then contracted to Tunbridge Wells Borough Council (TWBC), decompacting mature trees and renovating tree pits (installing sumped pits and drainage channels) and reconditioning the soil (using an MBW soil pick, adding organic matter) around an avenue of 48 ailing Deodar cedars. Matt Woolger says, "Of the 48 cedars, only two failed. The rest have visibly done everything we wanted them to do; the crowns are denser, darker green and shown more vigorous growth. TWBC considers this project a measurable success."

Today, still enthusiastically promoting and researching tree care and tree health, the company has grown to include an increasing (although minority of overall treework) number of residential and commercial clients using their soil management services. Tamillek is used by Sevenoaks Town Council and remains a TWBC contractor for specialist large takedowns, last year dismantling a huge failed Atlantic cedar and a car park oak in Dunorlan Park. All sections were custom sectioned to keep features intact at the request of a chainsaw sculptor, lowered by 80-tonne crane and turned into a beautiful dragon-shaped outdoor play space for the park.

"Encouraged by the results we achieved with the TWBC Dunorlan cedar avenue, Tamillek was invited to quote for a second phase of specialist soil management (airspade root collar excavation, radial trenching and decompaction) around the root zones of 24 mature (and veteran) trees in parks throughout the borough."

Tamillek surveyed all 24 trees, noting an oak with bleeding canker and many with high foot traffic compaction and some soil infill issues. "At the time, the best service we could provide for decompaction was using the Green Earth machine, an excellent but heavy, cumbersome machine. Also it did not have an inline 'donate' system (to introduce soil nutrients), so we would



have had to follow behind manually introducing through a funnel, which would suffice but had application problems and was labour inefficient. Our quote for the work, around £14,000, was considered too expensive at this time for the financially strapped TWBC."

This was the catalyst for Tamillek to begin researching. "We believed in our methods, the science, our tools and importantly the results but it is all academic (literally) if clients find it difficult to justify the expense in this economic climate especially compared to the 'managed decline' and 'fell and replace' ethos being forced upon them."

Two months later, Matt was asked to scale down his quote, this time for 18 trees. "We reworked the package and began to think about searching for a machine that could decompact and soil inject, doing the same job for a fraction of the price. The first six months of searching turned up a system from America, manually injecting soil nutrients by standing on a tread plate. The system had no decompaction qualities. The next machine 'Tree-Reviter' looked as though it ticked the right boxes, but the tool appeared not built for commercial use, and was less than ergonomic to use."

By mid-2011, the quote had been scaled down to 12 trees. "I had another late night on the Internet and found Mike Walker of Argus Pacific, Australia. In all my research, Mike was the one person that responded quickly and informatively whatever the time!! I told

Above left – James plunges the pneumatic probe 14 inches down into the root zone.

Above – James Sutton holding the VOGT Geo Injector.



“We are using an organic combination of composted seaweed, sharp sand and granular mycorrhiza.”



The VOGT Geo Injector developed by VOGT in Germany.

Spiked end of the probe showing injector chutes.

Below – James Sutton, Julian Furnell and Matt Woolger with the VOGT Geo Injector.



him what I was looking for, he asked me for readouts of soil samples and density analysis (taking soil from three different areas, putting them in a Tupperware box and sending them off to FARMA for analysis).

“From the information sent, Mike told me that the machine I was looking for (and, most importantly, explained why) was a new machine, the Geo Injector developed by VOGT in Germany. I found two dealers in the UK – neither responded to my many enquiries?! After three months of repeated fruitless requests and out of frustration, I called Mike. He asked when I wanted the machine. I said, “Now.” He said, “No worries mate!”, and sent it by courier the next day. It arrived in a week.”

Of the many Geo Injector models on offer, Matt chose the backpack version, to be powered by a towable air-compressor unit. James describes it as a pneumatic, hand-held jackhammer, where a long, spiked and hollow tube replaces the hammer.

Before leaving the Blue Boys Café, Matt shows me the earlier article on ‘Terravent’ first published in Issue 3. He says, “The Terravent system was a great, methodologically correct, industry reaction, if not a little violent and some studies have suggested deleterious to long-term tree health in a purist perspective. However, the damage is usually done by the time we as professionals are invited to assess and, importantly, the mulching option alone which is arguably superior to any other remedial action has time (it is not immediate) and cultural practice (most still dislike it, aesthetically) against it.

“While not cheap, amongst its many attributes, the VOGT Geo Injector only needs one operator who then has the choice of performing a high-pressure ‘aeration’

(straightforward 102psi decompaction) or ‘donation’ (blowing a medium into the soil in either granule, liquid or gel form) through one nozzle and in one motion.”

At Brenchley and Matfield cricket ground, Matt foresees situations in which he will utilise the VOGT Geo Injector; in the managed decline of trees, for stabilising tree health (especially where turf care interrupts the natural woodland cycle), in remedial situations where trees are under stress through compaction and nutrient deficiency, and, more obviously, post-development tree care.

Standing in the back of Tamillek’s Mitsubishi Canter, amid the ingredients that will be injected into the Horse chestnut root zones, Matt says, “Based on the mix we developed for the Dunorlan cedar rescue programme, we are using an organic combination of composted seaweed, sharp sand and granular mycorrhiza. Eventually we would like to move on to experiment with compost teas as the basic rule is for the longer term soil aeration and bacterial/nematode activity, that helps the soil help itself, rather than short-term synthetic fertilisers that destroy mycorrhizae in the rhizosphere.”

Later, Tamillek will map with bio-paint a radial grid beneath the Horse chestnuts. For this demonstration, James straps himself into the VOGT Geo Injector backpack and says he could comfortably wear the kit all day. Julian attaches a long hose to the 14.5-litre metal kettle (which sits securely in the backpack frame) and starts the air-compressor unit. James plunges the pneumatic Turbo Spade (the spade or drill is a metre-long spiked probe with hollow core, the injector chutes – left and right – are covered by a rubber protection guard) 14 inches down into the root zone. By releasing the ‘aerate’ lever (back right), the first shot of air, a



James Sutton of Tamillek Tree Care demonstrating the use of the VOGT Geo Injector beneath two mature Horse chestnuts at Brenchley and Matfield cricket ground.

decompaction shot, feeds between 86 to 102 pounds per square inch of pressure into the soil. A metre radius of grass rises and falls by inches as the initial explosion cracks the soil and air escapes upwards.

James removes the backpack to demonstrate the ease of filling the metal kettle with Tamillek's prescriptive mix. Strapping the pack back on, he plunges the probe in again, releasing the 'donate' lever (back left), the mix visibly flows from the kettle through a plastic tube into the hollow probe and is pumped out into the soil. Again, the ground rises and falls. Removing the probe, James demonstrates a 'donation' above the ground, and is immediately surrounded by jets of grey. Inch-wide holes, spaced at regular intervals, are the only evidence left that work has been carried out in this area.

James, who attends Plumpton College two days a week for his degree, has never actually used this machine before. He is looking forward to taking it into college to show fellow students, as he did with Tamillek's MBW soil pick (airspade), which is currently finding its role within Tamillek's soil care management. Matt says, "The soil pick is used mostly for root collar excavations, where soil builds up around the roots of park and amenity trees or post-development trees and makes them more vulnerable to *Armillaria* (honey fungus) infection. The airspade is fantastic at removing the soil, and we replace it with a pea shingle for better drainage. The airspade is also used for investigating root diseases like *Meripilus giganteus* to make informed management decisions."

Later in the day, Tamillek will work on an ailing walnut growing on a corner junction between two roads in the village. Julian says, "Last year, the tree had lots of small walnuts, showing obvious signs of stress. This year, the canopy is thin. This afternoon we will treat the root zone with our ameliorating mix. Because it is a small tree, in early to mid-summer, we would expect to see an almost immediate effect; new shoots, with slightly less necrotic leaves."

Matt's first job tomorrow is to treat an ailing yew. "The client laid a tarmac drive under a huge and beautiful mature yew. His wife noticed disturbance in the crown, searched the Internet, thought (mistakenly) it was *Phytophthora* and called us for diagnosis. We went round to assess the problem. It turns out that the exhaust pipe of the mini-digger used to dig the drive scorched brown patches in the canopy. The yew is also showing reactive signs to the soil disturbance around its root zone. I told her what we could do with the Geo Injector. Her husband

was understandably guarded and cynical, but she booked us anyway. (He was later very impressed!)

Tamillek is still waiting to hear from TWBC, whose chain of enquiries instigated the search for the VOGT Geo Injector. The quote has gone from 24, to 18, to 12 and now 8 trees, as the Borough constantly, and maybe typically, re-appraises trees, budget and tree care principles. Tamillek's quote has receded from about £14,000 to £2,000. But Matt remains positive. "We have to think long term. Local authorities have some well informed tree professionals who want to embrace these tree care principles but have financial restrictions. We as practitioners need to find the right scientific method, the right researched tool, at the right price to present to the client, and this machine is a realistic culmination of the evolution of soil care."

Superbly, almost unnecessarily well built as the Germans can do, the Geo Injector is certainly versatile. There are no terrain restrictions and the sole operator can work almost anywhere and deliver a better job, for less money!

In Matt's opinion, the VOGT Geo Injector is a brilliant contribution to the evolution of soil management and tree care. He does however say that it will, as most tools have, find its place; it is not the holy grail, nor is it new technology – more a refinement of contemporary thought.

Tamillek is finding an increasing amount of clients in the commercial and residential sectors are tree lovers and welcome an antidote to the chainsaw.

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James Sutton demonstrating 'donate' above ground for the camera. He is immediately surrounded by jets of grey.



James stands while Matt shows that the drill is a metre-long spiked metal rod with hollow core. He points to the injector chutes – left and right.

