

Manufacturing the seeds of progress

Botannica Projects, Hunter Valley, NSW

Pelaw Main is a NSW country town not known for progressive landscape practices. Until now.

In the dry, hot land of Pelaw Main, an old coal mining area in the NSW Hunter Valley, a new manufacturing estate is taking shape.

The estate will feature progressive landscaping practices that work with the local environment rather than change it. It will hold sustainability as its primary landscape objective.

All this in a place where a V8 ute reigns over a Prius.

Tough conditions produce new ideas

"The objective is to create a landscape that is both native and self-sustaining," explained site project manager Tom Lantry.

Tom is a horticultural consultant for Botannica Projects, a fully licenced landscape company based in Sydney and the Hunter that specialises in large subdivisions and industrial estates.

"It's a difficult site. The soil is highly acidic – around 3.5pH – it has no water on it at all, and it's dry and hot, and then frosty in winter. Whatever we planted had to survive on its own, as well as look appealing as a streetscape.

Working in partnership with Edaw, the landscape architects, Botannica knew that innovative ideas were needed for the site.

"It's evident to us that we can't continue using the same landscaping practices that we have used for many years. For example, you've got to get maximum use out of every drop of water you put on the soil.

"Sustainability governed the landscape design."

Stage 1 – Overcoming obstacles

Stage 1 of the landscaping was the construction and planting out of four kilometres of road verges and regeneration of natural bushland.

The first consideration was controlling the problem of emerging weeds in the cleared areas.

"Sierraron, Scotts pre-emergent herbicide, was chosen after we read some tremendous reviews on the product," says Tom. "But we were still a little cautious about using it on a broad scale on the natives so we are running a few trials.



"So far we've had little germination of weed seeds and no damage to the plants. Sierraron appears to be doing a good job."

The landscaping uses many plants indigenous to the area. The main plants chosen were *Lomandra longifolia*, *Themeda australis mingo* (kangaroo grass) and *Correa reflexa*. Once established they are hardy species. To help them along, the verges were heavily mulched with local organic matter.

"The mulch was made from the site's cleared trees and shrubs," said Tom. "So while returning the timber and the local seeds inherent in the mix to the original site is environmentally good, it produced another problem for us: nitrogen drawdown. "The *Lomandra* were becoming slightly yellow due to nitrogen deficiency. Robert Megier from Scotts suggested we apply a slow release form of nitrogen called Osmoform 38N that would work over a few months."

Botannica knew they had to get the nitrogen further into the soil if it was to do the long term job. They applied the soil wetting agent HydrafloL to give better penetration of future watering, ensuring the fertiliser would get through the mulch.

The icing on the cake for the plantings was a dose of controlled release fertiliser. SierrablenFlora was chosen to encourage strong root growth and fast establishment, and its low phosphorus content is suitable for natives.

Stage 2 – Sowing the seeds of the future

The landscaping plan calls for not only species that are indigenous to the area, but the collection of seeds from the site to grow the next plantings.

"This is quite an exciting time," said Tom. "Horticulturalists know that plants collected from a particular area tend to have evolved to local conditions.

"Survival of the fittest determines that the ones which have survived on the site in high acid soils are more likely to succeed in the future."

The seed bank will be collected over the entire 900 hectares and will come mostly from the native bottle brush and lomandra. The seed bank will also come from the topsoil being returned to the site, which will have indigenous seeds in it.

GPS readings will be taken of the position of each of the species from which seeds are collected. Once those seeds germinate they will be returned to that exact location

"We are trying to return the area to the natural vegetation as soon as possible and give the plants every chance to succeed," said Tom. "By having local, genetic plant material you are increasing its ability to adapt to the conditions."

Under the careful eye of Botannica Projects, this industrial estate's landscaping might just become the benchmark for future civic landscape design.



Tom preparing his transportable water tank, mixed with Hydraflo L.

Preventing nitrogen drawdown

Mulches made from pine bark, woodchips and anything that has been milled recently and not composted for a long time can cause nitrogen drawdown when added to a garden. Nitrogen drawdown occurs as the mulch decomposes and microbes in the soil use up most of the soluble nitrogen in the top layer, leaving very little for the plants. Yellowing of the leaves indicates a nitrogen deficiency. You can prevent this by applying Osmoform – a high nitrogen slow release fertiliser before laying the mulch.

Which products were used and why

Sierraron pre-emergent weed control



The estate's landscaping was designed to be low maintenance, so long term weed control was an important issue. Sierraron prevents weeds emerging for up to 6 months by forming a barrier in the soil. Sierraron is best used at the end of Winter or beginning of Spring before weeds start appearing.

Osmoform 38N



A high nitrogen fertiliser was needed to overcome the effect of nitrogen drawdown caused by the immature mulch. The Osmoform range of high density, free flowing, granular fertilisers are ideal for pre-mix and topdress applications. Osmoform 38N is used as a starter or finisher when only nitrogen is required.

Sierrablen Flora controlled release fertiliser



The fertilising program follows the estate's low maintenance approach. The coating on the Sierrablen Flora prills controls the release of nutrients for a full growing season and minimises the potential for the fertiliser to wash away.

Hydraflo L soil wetting agent



Water is a scarce commodity and every drop has to reach its destination. Hydraflo L decreases water surface tension aiding the successful rewetting of soils in dry summer periods. It eliminates localised dry spots and increases the uniformity of wetting throughout the soil profile to allow for better water penetration and adsorption.