



A lion in the meadow

It takes 20 trees 80 years to offset the carbon cost of a cubic metre of concrete. Just how bad are landscape architects for the environment? BY AMANDA CROPP

When most of us look at a park with manicured lawns, concrete paths, flower beds and a scattering of feature trees, we see an attractive, clean, green landscape. What Craig Pocock sees is a great big "liability" that needs watering, spraying, fertilising and mowing.

The Lincoln University landscape-architecture lecturer says that producing one cubic metre of concrete (enough for 12 metres of footpath) releases at least four tonnes of carbon dioxide into the atmosphere.

"It takes 20 trees living 80 years – in a rural environment, not an urban one – to offset the carbon cost of that one cubic metre of concrete."

Pocock has been positively evangelical about sustainable landscape design since returning to Christchurch in 2005 after 13 years working overseas on a highly varied range of projects.

In the Palestinian territories, he was

tear-gassed when fighting flared up around the hotel site he was supervising. He designed the gorilla enclosure at the San Francisco Zoo, created a roof garden for a hip Manhattan restaurant and landscaped a school for the children of Calcutta prostitutes who featured in the American award-winning documentary film *Born Into Brothels*.

To Pocock, sustainable design means careful consideration of everything from choice of plants and landscaping materials to stormwater disposal and maintenance costs. Based on that definition, "it would be fair to say that landscape architects are responsible for considerable environmental damage."

To prove the point, he recently worked out the carbon footprint of his last 14 years' work. The 40 projects in five countries included three reforestation schemes, eight hotels, 12 playgrounds and an urban stormwater system. Even with an emphasis on sustainable design over the past decade, the results were sobering.

After totting up the amount of timber,

steel, concrete and asphalt used, air travel (460,500km) and days in the office (4690), Pocock discovered that to become carbon-neutral he'd need to plant another 120,000 trees, or buy 15,400 carbon credits – costing anywhere from \$201,000 to \$604,000.

Those statistics are the basis of a paper he's presenting to the International Federation of Landscape Architects conference in Kuala Lumpur on August 28. They also featured in his recent presentation to 47 government agencies that have signed up to improve sustainability as part of the government's programme.

Pocock says that government policies on sustainability are headed in the right direction, but from a design perspective we're not doing so well. "America and Europe are a decade ahead of us."

He is frustrated with the "greenwash" coming from designers and architects and last year caused quite a stir by refusing to present the sustainability award at the New Zealand Institute of Landscape Architecture Design awards.



Craig Pocock at the Bollywood wetland-filtered swimming pool he designed: "It's beautiful."

Pocock became inspired to design more sustainably after encountering the harsh environmental conditions in Jordan, Palestine and India. Workers landscaping at a resort on the Dead Sea, for instance, planted 300,000 plants in the desert in precious agricultural soil trucked in from Jordan's northern territory. The completed gardens required 80m³ of water a day in an area where it hadn't rained for three years.

Pocock departed feeling very uneasy about the long-term impact of what he was leaving behind, and it bothers him that New Zealand continues to cling to an English concept of landscaping that is heavy on hectares of mown lawns.

By his calculations, daily mechanical sweeping of Christchurch's Cathedral Square uses half the amount of fuel

parks and roads to pollute streams.

"Necessity is a great motivator. They harvest all the rainwater off the roof and put it in big cisterns under the building, and it gets re-used. The grey water is filtered and used for the toilets so the water is cycled through the system a couple of times, rather than just once. The idea of using potable water to flush a toilet is crazy."

In India, his Bollywood-star clients weren't keen on using chemicals in their swimming pool. The solution was to build a completely chemical-free pool where the water was filtered through a wetland underlaid with an impervious lining and filled with gravel and plants to remove all the "nasties".

"I've swum in it, and it's beautiful. It's right in the jungle. There are bats and



Eco-friendly fields: meadows need no chemicals, no irrigation and little mowing.

He claims none of the 103 projects submitted is truly sustainable and cites south Auckland's Manukau Square as an example. It won the 1988 supreme landscape design award and picked up another award last year for a revamp.

But Pocock says there's nothing remotely sustainable about a design that was ripped up after less than 20 years. "I worked it out that it cost 2500 tonnes of carbon dioxide for the pavers alone, and they got dumped. They could have been crushed and re-used."

He accuses local councils and landscape designers of being "absolutely negligent" in the use of environmentally costly concrete and stainless steel.

Instead of importing granite pavers from China, he says, we should be making greater use of recycled materials and local materials such as crushed limestone and compressed earth paving.

"Lawns and concrete and steel have their place. I'm not saying don't use this stuff at all, I'm saying use it appropriately."

needed to mow a council park once a fortnight. His alternative is to have grass meadows with mown areas where people congregate, such as near playgrounds.

His sustainable landscape plan for Auckland's Unitec campus includes meadows, which he says would reduce the annual \$154,000 mowing budget by 70 percent. "Well-designed meadows don't need any chemicals, no irrigation and very little mowing."

Aside from fuel and labour savings arising from meadows, the greater insect life in the long grass brings in more birds, even in heavily urban settings.

When he worked at Margie Ruddick Landscapes in New York, Pocock's job regularly took him to India to manage projects such as the Shillim eco-resort in the tropical rainforests of the Western Ghats.

He says water recycling in India is streets ahead of New Zealand. He is infuriated at the way we spray vast quantities of water onto lawns and dairy farms and allow run-off from car-

monkeys, and you float around the pool watching the wildlife. There are thousands of these pools in Europe. There's a public one in Germany that has 4000 people a day through it and the water is only cleaned by wetlands."

Back home, Pocock continues to practise what he preaches. At the Unitec marae, wetlands filter run-off from the building before it enters nearby waterways.

He is a consultant for the Lincoln Envirotown project, which is attempting to make the small Canterbury town a sustainable community and to preserve its village character in the face of rapid population growth. West Melton, a nearby rural community, is next on his list, followed by a motorway development in Auckland.

As for his own backyard, it's a neglected lawn. "Meadows are really more applicable to public land, reserves and near highways where you have lots of open space. I only mow my backyard about six times a year, so it's probably an unintentional meadow." ■