



the green Landscape

NEW GARDENS CAN BE DESIGNED USING SUSTAINABLE PRINCIPLES AND THE SAME IDEAS CAN ALSO BE INCORPORATED WHEN RETROFITTING ESTABLISHED GARDENS

WORDS BETTE FLAGLER



Sustainability

Traditional landscape design has sometimes left us with gardens full of inappropriately placed plants and deficient soil. It harms our biodiversity, consumes ridiculous amounts of natural resources and is costly to maintain – both environmentally and economically. Sustainable landscapes function as systems; they thrive with less effort and require fewer resources than traditional landscapes. They enhance soil quality, create habitats for insects and birds and are sensitive to the characteristics of a site.

Reduce waste and feed the soil

Your soil will be better off if you feed it organically rather than chemically. Many older gardens have nutrient-depleted soils because they have been fed chemically for years. Chemical fertilizers starve the microbes which naturally produce soil nutrients. Trish Waugh, principal designer at Landscape Design Company, suggests you add lots of compost, mulch, seaweed, horse manure or sheep



pellets to soil, particularly if you're starting a garden on a new building site. But don't stop after the initial planting. Incorporate a compost bin and worm farm into your landscape plan and place them in convenient spots. Adding compost will improve the soil structure, texture and aeration as well as helping it to hold water. Beware, though: food scraps may attract rodents, so put them in the sealed worm farm. When renovating a garden, pull out old plant material that's past its prime. Compost the small pieces and put the larger ones through a chipper for mulch.

organic garden centre koanga gardens in kaiwaka specializes in new zealand heirloom seeds and seedlings. it also offers courses on organic gardening and sustainable living and even workshops on how to make a pizza oven.



Water-wise

Traditionally, much of the rain that fell on domestic gardens and driveways made its way through storm drains to local waterways. Not only is this a waste of perfectly good water but, says designer Hugo Verhagen of Katikati-based Landscape Design Company, the cumulative effect degrades aquatic habitats. For example, run-off from concrete surfaces introduces alkalinity to waterways and this can be toxic to fish. Modern landscape design aims to use rainwater on site. Paving can be

designed to direct water into swales or rain gardens where plants are happy to have wet toes. Alternatively, permeable products such as pebbles or shells can be used, allowing water to slowly soak into the site. Households without town water supply have long been accustomed to storing rainwater but this can be successful regardless of where your drinking water is sourced. Installing a slim-line tank for garden use alongside the house or under the deck can reduce reliance on town water by as much as 75 percent, says Hugo.



Balancing act

When Carl Pickens, landscape architect and owner of Christchurch-based One Earth Matters, discusses the principles of sustainable landscape design with clients, one of the first things he talks about is the appropriate use of plants. It's not uncommon, he says, to see established gardens with plants that have grown too big and are not only cramping each other but shading the house. When choosing plants to use on a site, he considers soil type, temperature, sunshine hours, frost and rainfall. Notice how nature does it: natural habitats and ecosystems balance themselves with many varieties of plants and are home to birds and insects. A sustainable garden should offer the same, so include nectar-producing plants and trees to attract birds, insects and butterflies. While there is a place for plant repetition in certain situations, if you plant vegetables from only one family, for example, you could end up being inundated with one kind of bug. But if there is biodiversity in the garden, you'll attract beneficial insects that will eat the bugs and achieve a more natural balance.



for a chemical-free way of controlling slugs and snails, create hedgehog heaven with piles of tree branches and sticks. hedgehogs will happily munch away on the pests and the sticks will decompose into the soil.



Mow no more

Lush lawns look pretty from a distance but typically require chemical fertilizers, lots of irrigation and plenty of labour and fossil fuels to mow, so rate high on the scale of ridiculous landscape ideas. As an alternative, consider an ornamental ground cover. Richard Blaikie's Nelson company No Mow grows and supplies more than 40 varieties of low-growing, mat-forming plants. Some, he says, are good alternatives to traditional grass lawns and some are suitable for rock gardens and living walls. Preparation varies depending on plant variety and soil conditions but basically it's the same as for instant turf. The plant Richard calls "the bomb" is *Selleria radicans microphylla*. A native, it is commonly called fine tide turf and is a tidal estuary plant so is happy being temporarily soaked or left bone dry. It has a very grassy look and glossy leaves that are cool to sit upon. Plants cost about \$10 per square metre but once established they require very little care, so consider all the money you'll save over the course of the lawn's lifetime.

Good wood

Copper chromium arsenate (CCA) is the most common timber preservative used in New Zealand. It's typically applied to pine to inhibit the growth of fungus and defend against decay caused by insects and microbes. But who wants their kids to crawl around on wood treated with arsenic? And who wants to grow vegetables in raised beds edged with wood that leaches heavy metals? Macrocarpa is naturally resistant to fungus and insect attack and consequently doesn't need to be

chemically treated. It makes good raised beds and, by choosing heartwood, you can expect it to last longer than if you'd used sapwood. Another option is from Rotorua-based Verda New Zealand which offers a range of pine decking and outdoor building products (including garden beds) that are treated with a chromium and arsenic-free preservative. According to the company, the wood can last up to 25 years and, because clear wood is selected, this premium product doesn't have the knots and blemishes typically associated with *pinus radiata*.



Between a rock and a hard place

Sourcing sustainable materials for hard landscaping is a tough business and may require compromise. For example, it takes a lot of energy to produce concrete, but that high embodied energy is somewhat offset by concrete's long lifespan. Also, by choosing locally sourced aggregate you can minimize the amount of fossil fuels required for transport compared to the amount required for imported natural stone.

Consider bricks and cobblestones which can be recycled and added to as the garden grows and changes. Firth Industries is currently working on a range of permeable paving which will be available later this year.



Natural swimming pools

Fancy the idea of a swimming pool but hate the thought of using socially unacceptable chlorine to make crystal-clear water? Consider a natural, chemical-free swimming pool. The water for this is purified and oxygenated by aquatic plants which grow in a shallow, pond-like area beside the swimming zone. The two areas are divided

by a submerged partition, over which the water flows continuously, filtered through the plants' root systems. Natural swimming pools have been available in Europe for more than 30 years and are now being built by two companies in New Zealand – Sustainable Habitats in Northland and Natural Pools New Zealand in Motueka.

Grow your own

Growing your own food is good for your mental health, reduces food miles and allows you to have more control over what goes into your body. When choosing plants for the vegetable garden, shop first at your local farmers' market and ask the grower about the plant variety, what kind of soil it was grown in and whether it was raised in a spray and chemical-free environment. If buying from a commercial grower, wash off the soil before planting. If renovating an established garden, keep those old fruit trees – learn how to prune them to stimulate new growth and improve their health.



SAVE THE FORESTS

Don't buy outdoor furniture that will be the ruin of the rainforest. Look for the label of the Forest Stewardship Council (FSC) on furniture and decking materials. It signifies that the wood was sourced from a sustainably managed forest. There are, however, a few exceptional products such as Eco Vitex and Community Vitex from the Solomon Islands and mahogany from Fiji that come from good, sustainable sources but are not FSC certified. These woods come from well-managed community sources which perhaps find it cost-prohibitive to go through FSC certification, say landscape

designers we spoke with. As a general rule, steer clear of kwila (which is also called merbau). It's a popular hardwood for decking and outdoor furniture but both the Green Party and Greenpeace have said that most kwila products in New Zealand come through China from illegally harvested forests in Indonesia and Papua New Guinea. However, in late 2009 Timspec, a timber importer based in Auckland, announced that it was importing kwila certified by the FSC. A safe option is *Eucalyptus saligna* – a hardwood that is plantation-grown here in New Zealand.

