

## Reading the layers — knowing the past to plan for the future

### Di Lucas

Landscape Planner, Lucas Associates  
Marokapara, 351 Manchester Street, Christchurch 8001, New Zealand  
di@lucas-associates.co.nz

### ABSTRACT

To design for landscape change a landscape analysis is required. Landscape analysis is about reading the stories — the stories of nature and the stories of culture in a place. Analysis involves identifying the threads that are woven into a place, some visible, some not.

Along with managing other dimensions of the landscape, landscape architects have opportunity to influence the presence, role, extent and abundance of vegetation in a city or town. They have a responsibility to be respectful to the stories in a place.

Landscape architects can be significant decision-makers on the presence and selection of plant material, not only in the projects they design, but also in policy and planning work such as their influence on projects seeking consent, also in developing guidelines, and, in their teachings and advocacy. Landscape architects can thus influence trends in plant use. It is important they work closely with other plant professionals to ensure that opportunities are maximised.

There is proven need for greater vegetative cover in urban areas to address a whole range of environmental conditions. To be responsible in plant selection, one requirement is to select vegetation that will contribute positively to a city on as many counts as possible, and provide minimal risk for remnant and recovering biodiversity.

For almost every urban site there is a plethora of species that belong naturally. We identified more than 50 species that used to grow naturally in Cathedral Square! The task is first to identify what belongs naturally and to test it for the purpose to see both if there are communities or particular species that meet the tasks — the physical, social and cultural requirements for a planting. Cultural traditions in vegetation also need to be respected.

The New Zealand flora has as yet been minimally explored for urban design opportunities. It's not about substitution — a hebe hedge instead of a box hedge! It's about re-thinking the role and potential for urban vegetation, and the opportunities our flora offers.

### INTRODUCTION

To design for landscape change a landscape analysis is required. Landscape analysis is about reading the stories — the stories of nature and the stories of culture in a place. Analysis involves identifying the threads that are woven into a place, some visible, some not. To bring back biodiversity to an urban area it is necessary to unravel the threads buried below to know what biodiversity belonged there naturally.

New Zealand is rather special in the world in that

our natural stories are still legible, if you know how to read them — know how to unravel the threads underpinning a place. Analysing local remnants, historical accounts, pollen records and soils, scientists here can identify what vegetation would have been present on most sites. These can be interpreted into ecosystem types, for which plant lists can be compiled.

Even locals are surprised to hear that totara stumps are spread across Christchurch's central

city just below ground level. Briefly uncovered during foundation works, they are soon covered again and their presence remains largely unknown. Over the last decade we have made information on the natural stories of Christchurch city widely available. Working with Colin Meurk (botanist and ecologist) and Ian Lynn (geomorphologist and soil scientist) of Landcare Research, we compiled guides to the vegetative nature of every part of the city. Not guides to what is here now, but guides to what was there.

### GUIDES FOR PLANTING

For this project, the city was divided into four areas, with the plains city split into three, and the Port Hills the fourth (Lucas Associates 1995–1997). The plains' guides utilised street maps as a known language of locating within the city. We overlaid the ecosystem typology onto street maps. For the hills, most of which do not have streets, landform modelling was developed. Users could identify the type of land in which they were interested, and refer then to the relevant ecosystem. For maps and the model, each of the 12 plains ecosystems and the 11 hills ecosystems was identified by a name, a graphic signature and a colour. For each ecosystem, plant lists were compiled for the plants identified as useful for plantings. The conditions or tolerances of each species was noted — e.g., for sun/shade, wet/dry, wind/shelter. Particular appeal to native wildlife was also indicated.

For each of the four areas, the information on the relevant ecosystems was made available as a booklet with an ecosystems map/model and a plant list for each ecosystem. Each list is also available alone — a sort of 'shopping list of plants for my street'.

A community group, the Christchurch-Otautahi Agenda 21 Forum, which approached each Community Board of this city, instigated the project. Over several years they sequentially contracted Lucas Associates to prepare a guide for the Boards in each area. The local Agenda 21 Forum actively promoted the project around the city, such as within schools and community groups, and encouraged demonstration plantings implementing the guides. Several native plant nurseries have the guides on display.

The guides were very clearly intended as an information tool — to know what species belonged there — and not how to use them in design. The booklets deliberately avoided indicating the visual character of any plant, but merely that it was tree, shrub, flax-like, vine or groundcover. There was deliberately no suggestion of how each plant might be used. This was because each guide was intended to provide a palette of plants that could be used for restoration work or for use in designed plantings of various types and scales. They might be lined and clipped into formal modernist and minimalist arrangements, or grouped and mixed in 'wild and woolly ways'. The intent was that the guides be entirely neutral on how the plants be used. The desire was to demonstrate there is a wide palette available to be selected from. Whether to be left natural or intensively managed, whether for restoring nature or planting a traffic island, a park or garden — whether a traditional woodland garden or a modern courtyard garden — there is a varied local palette to choose from. The New Zealand flora has as yet been minimally explored for urban design opportunities. The task is to explore our flora for urban applications, and to not merely substitute species — not just replacing *Buxus* hedging with *Hebe*!

Available from council offices, the Otautahi Christchurch ecosystems' guides (Lucas Associates 1995–1997) continue to be used by professional and layperson alike as useful information sources. They have even been used as a basis for interpreting the city through art. An example is provided by Neil Dawson's 18 m high sculpture in Cathedral Square that celebrates the core of this city. This major contemporary artwork forms an icon marking the dawning of the new millennium and Canterbury's 150th Anniversary. This hard urban space has grown little vegetation over this period. The sculpture '*Chalice*' recognises the underlying ecosystems of the Square in depicting foliage of eight of the more than 50 native plant species that used to grow there naturally (Lucas Associates 1999).

For other parts of New Zealand we have developed various guides to natural ecosystems

which apply to urban areas (e.g., Lucas Associates 1995, 1996, 1997a, 1997b; Lucas Associates et al. 2000). Some merely provide a broad typology and guide to geomorphology and biota. Others provide quite detailed guides to the use of local flora — even for perfumed gardens, hedging, and container plants.

For almost every urban site there is a plethora of species that belong naturally. In Canterbury we have a diverse divaricating flora that offers great potential in all types of plantings — and the fruits of many are both colourful and loved by birds and lizards. I observe a silveryeye family feasting daily on an isolated inner city *Coprosma* hedge for month after month. Skink have recently arrived too.

### THE ROLE OF THE LANDSCAPE ARCHITECT

Along with managing other dimensions of the landscape, landscape architects have opportunity to influence the presence, role, extent and abundance of vegetation in a city or town. They have a responsibility to be respectful to the stories etched in a place. Landscape architects can be significant decision-makers on the presence and selection of plant material, not only in the projects they design, but also in policy and planning work such as green space, vegetation coverage, planting and riparian requirements in city plans, and in their influence on projects seeking consent. Also, in developing guidelines, and, in their teachings and advocacy. Landscape architects can thus influence trends in plant use. It is important that landscape architects work closely with other plant professionals to ensure that opportunities are maximised, not only to 'green up' urban areas but to markedly increase their biodiversity.

### CONCLUSION

There is proven need for greater vegetative cover in urban areas to address a whole range of environmental conditions. To be responsible in plant selection, one requirement is to select vegetation that will contribute positively to a city on as many counts as possible, and provide minimal risk for remnant and recovering biodiversity. Selecting from the local flora provides greater certainty that species selected

are both robust and will not become future weed species. The design and management challenge is to explore the flora of a place for creative ways of including, displaying, and enjoying local native plant species. Along with examples, clear and tantalising information is an important start.

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