A DELICATE BALANCING ACT

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This paper examines a bicultural approach to the development of planting strategies for landscapes and asks the question: In what ways can vegetation help to create a bicultural landscape? The case studies discussed include planting and design directives that are divergent in nature, however perhaps they can also help to demonstrate togetherness.

Christchurch Botanical Gardens Visitor Centre landscape scheme - early drawing exploring the concepts of collection, ordering and display of exotic species in the context of a native riparian setting
CASE STUDIES

NATIVE REVEGETATION WITH EXOTIC COUNTERPOINTS – HUNT ROAD, CATLINS

The Hunt Road project is located in a small rural community in the South Eastern most corner of the South Island of New Zealand. The site provides the program for the design intervention. The expansive, at times harsh, large-scale characteristics of the region and the muted tones and rugged materiality of the native landscape, provide the backdrop for a ‘matrix’ style planting strategy. In this case normative riparian planting and native bush regeneration species provide a matrix into which other plants are inserted. The matrix includes native riparian planting, comprised of Carex secta (sedge), Carex virgata, Carex maorica, Carex tenuiculmis, Opodasmia similis (oioi), Chionochloa ovata (tufted snow grass), Chionochloa oreophylla, Olearia bullata, and Cordyline australis (cabbage tree) and forest species such as Dacrycarpus cupressinum (rimu), Dacrycarpus dacrydioides (kahikatea), Prumnopitys ferruginea (miro), Prumnopitys taxifolia (matai), and Podocarpus totara, Metrosideros umbellata (Southern rātā), Weinmannia racemosa (kāmahī), and Sophora microphylla (kōwhai).

As a counterpoint to these endemic New Zealand species there are grid planted blocks of flowering exotic vegetation, which include Cornus 'Eddie's white wonder' or Cornus 'Greenvale' (dogwoods), Cornus 'Satomi' (pink), Rhododendron bibianum (red), Rhododendron 'Maketa's Prize' (scarlet red), and Rhododendron 'White Pearl' (white and pink). This planting technique creates a hybrid landscape that references both indigenous history and aspects of European influence.

The planting scheme pays homage to the client’s long colonial ancestry in the region, whilst assuaging a deep-seated need to acknowledge the indigenous beauty of the site. The scheme is designed to provoke discourse around the idea of ‘belonging’ – what species belongs where and to whom does the contextual landscape belong? In this case the planting also serves to raise issues of culturally formed notions of identity and place, issues to do with hybridisation and the emergence of new mixed forms of cooperation.

The planting scheme goes beyond plants for plants sake, and attempts to challenge the structure of conditions in which things occur. It confronts the way in which an ethno botanic situation can be identified, marginalised or assimilated.
Hunt Road, Catlins. Large scale residential landscape scheme - a formal grouping of black beech (Nothofagus solandri var. solandri) marks the commencement of the journey, which concludes at the house adjacent to an orchard of exotic fruit trees.

TRANSITION FROM EXOTIC TO NATIVE – ARNOLD STREET, GREY LYNN

Located in Grey Lynn Park (named after British Colonial Governor Sir George Grey (1812-1898)) are a number of exotic plants that form a starting point for the landscape scheme: a transition from exotic to native. The proposition takes advantage of the close adjacency to the park by drawing out species Betula pendula (silver birch) from the park and suggesting 'guerrilla' planting of these on the roadside bunds. From the folds of the front garden through to the rear of the property there is an evolution from exotic species to natives, which create links with neighbouring properties where there are stands of significant native specimen trees. In collaboration with the client, a mix of exotic species were selected: Leucanthemum x superbum (Shasta daisy), Digitalis purpurea 'Alba' (white foxgloves), Papaver somniferum (opium poppy), Foeniculum vulgare 'Purpureascens' (bronze fennel), Nigella damascena (love in a mist), Rosa 'Ripples' - floribunda, Reseda odorata (mignonette). Closer to the house there is an architectonic approach in the form of a clipped Podocarpus totara (tōtara) hedge. Natives included in the scheme were: Coprosma kirkii, Muehlenbeckia axonii, Corokia x virgata 'frosted chocolate' and Coprosma viridens.

The divergent range of flora and fauna in this design approach reflects universal issues. The disappearance of indigenous species and the impact of on-going globalisation is a matter of worldwide interest and concern. Alfred Crosby addresses the issues in Ecological Imperialism: The Biological Expansion of Europe, 900 – 1900\(^3\). In New Zealand, issues relating to exotic and indigenous species and the environmental impact of their arrival and departure have also been given considerable attention. Crosby's principles are demonstrated, in, for example, Ngā Uruora (The Groves of Life), Ecology and History in New Zealand\(^4\) by Geoff Park; in the late Keith Sinclair's book A Destiny Apart: New Zealand’s search for Identity\(^5\), and in, Aotearoa and New Zealand: A historical geography by Alan Grey\(^6\). The inclination to create Neo-European landscapes by colonial migrants, as demonstrated in Central Otago, is a recurring theme in the aforementioned texts.\(^7\)
The Arnold Street planting scheme inverts this phenomenon. Native vegetation is reinstated amongst an historical contextual backdrop of exotic specimen trees. This demonstrates a new hybridity arising from New Zealand's modern eclectic culture. The strategy in which, the plants transition from exotic to native, in waves and folds, is derived from the idea that landscapes, in addition to being a product of culture, have the power to be a cultural construct.

Landscapes are as much a reflection of the way people consider their place in the world as they are an aesthetic encounter.

*The commonplace aspects of contemporary landscapes, the streets and houses...can tells us a great deal about history and society, about how we see ourselves and how we relate to the world. Such vernacular landscapes, or 'landscapes of the everyday' are fluid identified with local custom, pragmatic adaption to circumstances, and unpredictable mobility.*

Arnold Street, Grey Lynn. Above - concept drawing illustrating the relationship between the exotics of Grey Lynn Park to the left and a transition to an accumulation of natives to the right. Below - planting plan.
The proposed scheme, which incorporates a blend of exotic and native vegetation, is a response to the unique qualities of both Unitec the institution and the culturally shared landscape context. The two defining elements of culture and nature have been identified and harnessed in order to meet educational, business and residential demands and provide amenity, interest and permeability.

Te Ao Māori provides an overarchingly enriching dimension at Unitec. Te Noho Kotahitanga\textsuperscript{19}, the partnership document, acknowledges mana whenua and expresses Unitec’s commitment to the Treaty of Waitangi; the Poutama\textsuperscript{21} embeds mātauranga Māori in the living curriculum; Te Aranga Design Principles guide Unitec’s design strategy and help to ensure the development of high quality and durable relationships with iwi and hapū; the sacred spring on campus, Te Wai Unuroa o Wairaka, is a galvanising and magnetic entity. Pukenga, Te Wharekai Manaaki and Te Noho Kotahitanga Marae are physical manifestations of this commitment and the importance of New Zealand’s unique cultural dimension to Unitec.

Collectively these entities form the campuses cultural heart.

The Mt Albert site is renowned for its landscape. Vegetation and water are defining qualities. The arboretum includes 200 different exotic and native species of plants and trees; the Mahi Whenua ‘Hortecology’ Sanctuary houses the community garden and food forest; a large wetland dominates the central campus; riparian planting accompanies Wairaka Stream on its travels from spring to the sea. This verdant and watery character is amplified by spectacular views of the Waitakere Ranges, the upper harbour and the close proximity to Oakley Creek Te Auanga (whirlpool or swirling waters) on the western edge.

In light of this potent and unique intersection of culture and nature, exotic and native, an opportunity exists to provide a planting strategy that strengthens this intersection. At the heart of the campus is the Wairaka Stream, with its existing riparian vegetation and culturally sacred significance. Acting as a backdrop to this is the Victorian tenet of an arboretum. Embedded within these two overarchingly existing conditions are a number of culturally derived more subtle typologies. For example, the sacred Pā Harakeke (flax, Phormium tenax, plantation), and the repeated use of the Metrosideros excelsa (pōhutukawa).
The proposed scheme draws on the single species massed planting idea, found in the Pā Harakeke, and develops this through the use of significant stands of *Dacrycarpus dacrydioides* (kahikatea) around the riparian areas and repeated, large stands of native *Agathis australis* (kauri) lending the Eastern edge grandeur, interest and a sense of arrival. The mass planting of this iconic tree has a sound environmental rationale - as kauri dieback\textsuperscript{19} ravages the species in its natural habitat, it is a form of survival insurance.

In the manner of Piet Oudolf, distinguished planting designer, who states, "every [plant] name I see is a face"\textsuperscript{22} when he talks of the plants he chooses for his designs, the species in this case (the iconic kauri and the towering kahikatea) conjure up cultural memories and associations. The kauri with its primeval timeless magnificence, yet fragile and threatened existence due to its colonial devastation, and the more recent threat of disease, is used in order to remind us of the unique beauty of a past time. And the Kahikatea, seen in brooding clumps across the Waikato planes, reminding us of the ecological importance of vegetation and also a pre-European history. Artist George Foster (1745–1794), who sailed with Captain James Cook, observed there were,

'...antediluvian forests [and] numerous rills of water...transformed into a sward of sun- parched English pasture...'\textsuperscript{23}

The clumps of Kahikatea are a reminder of what is lost and what once was.

The campus itself is a place for people, a place steeped in cultural history. The idea that there are "cultural keystone species," that is, "plants...that form the contextual underpinnings of a culture"\textsuperscript{24} is at the forefront of the scheme. Ann Garibaldi principle at Integral Ecology Group and Nancy Turner, Trudeau Fellow at the University of Victoria, in their paper Cultural Keystone Species explain,

'Just as certain species of plants or animals appear to exhibit a particularly large influence on the ecosystem they inhabit, the same is true in social systems. We have termed these organisms "cultural keystone species" and define them as the culturally salient species that shape in a major way the cultural identity of a people, as reflected in the fundamental roles these species have in diet, materials, medicine, and/or spiritual practices.'\textsuperscript{25}

And,

'Unlike ecological keystones, whose identity hinges on the expected ecological influence of a species relative to its biomass, the main criterion for a cultural keystone species is its key role in defining cultural identity...'\textsuperscript{26}
UNBALANCED

The aforementioned schemes demonstrate a relatively straightforward, although for some still contentious, negotiation between naturalised exotics and native vegetation. An example, which is unbalanced, establishes the more extreme end of the spectrum where the exotic/native intersection has negative ramifications. What happens when divergence involves the accidental introduction of an invasive species?

In 2015 a small population of the Queensland fruit fly (Bactrocera tryoni) was found in the Auckland suburb of Grey Lynn.

Queensland fruit fly [a native of Australia] is one of the most damaging fruit fly pests as it infests more than 100 species of fruit and vegetables. Hosts include commercial crops such as avocado, citrus, feijoa, grape, peppers, persimmon, pipfruit, and summerfruit.

If this fly were to establish here, it would have serious consequences for New Zealand’s horticultural industry.28

There could also be serious consequences for New Zealand’s endemic flora and fauna.

For example, the following interdependent community of species could be under threat: the endemic taraire tree (Beilschmiedia taratiri); the endangered and endemic kererū (Hemiphaga novaeseelandiae) that feed on and disperse taraire fruit; and the lichen Strigula novae-zealandiae, which is found only on taraire.

Literature on the impact of larvae on avian food sources is divided.

'Avian seed dispersers have been shown to reject fruits infested by insect frugivores, disadvantaging plant fitness by reducing seed dispersal (Manzur and Courtney 1984, Krichak et al. 1989, Traveset 1993, Garcia 1998, Garcia et al. 1999).29

'... fruit infested by insect frugivores may attract vertebrate frugivores because infested fruits are more nutritious (Piper 1986, Drew 1988). Brown pigeons (Macropygia amboinensis) a major consumer of, and seed disperser for wild tobacco (Solanum mauritianum), were suggested to selectively forage for fruits infested with Bactrocera cacuminata larvae (Drew 1987).30

Certainly, it is known that larvae infested fruit are prone to accelerated ripening and fall to the ground. Whist kererū occasionally feed on the ground arboreal foraging is more common.
What if the kererū avoided larvae infested fruit or was disinclined to
feed on the ground? The bird, which under normal circumstances
feeds on the ripe drupes and then relocate and deposit seed, lose a
food source; germination of taraire would be compromised; and
finally, the lichen suffers a primary cause of species extinction, habit loss.

CONCLUSION

The nature of these projects reflects a desire to deliver a fusion, and perhaps be less distinctive about a perceived 'native' and 'exotic'
dichotomy. The thinking around the case studies is less about the problematic ideology of native versus exotic and more to do
with added value and a cultural contribution to the character of the regions.

It is perhaps true then, that the Queensland fruit fly example
establishes the more extreme end of the spectrum where the exotic/native relationship is viewed as an adversarial one. This view is often broadcast through the fourth estate, which is entrusted with the vitally important responsibility to educate. This in itself, can have an impact on the development and social understanding of the culture surrounding exotics and natives, as well as on occasion be an imperative to protect biodiversity. The ensuing sensation has the potential to obfuscate the more subtle and enriching dimension of a native and exotic fusion.

The schemes by and large demonstrate divergence through the
dynamic juxtaposition of diverse taxonomy. This approach with
its inherent contrast amplifies unique qualities. The protagonists,
exotic and native, are offset with their differences magnified.

It is a fact that in New Zealand there is a strong colonial inheritance, landscape examples are, the iconic features of Otago, Kaua Island,
Albert Park, Western Park, and indeed Grey Lynn Park. It is
an inheritance that along with the considered introduction of additional exotics can provide an enriching dimension against
the backdrop of native biota.

With the approach illustrated in the case studies, planting
strategies can perhaps become catalysts for a commentary
associated with togetherness and add to the discourse around
the idea of 'belonging'. A hybrid approach to the design of planting
schemes could continue to develop, within New Zealand, a sense
of 'togetherness'.

The planting schemes described in the body of this text are as
much a reflection of the way society contemplates a place in the
world, as the planting designs are in themselves an aesthetic
encounter. Balance then, rather than polemics and extremes
should be sought.

OPPOSITE PAGE

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Fly in the Ointment - Fruit Fly and the Taraire, water colour painting 28