

2014-2022

University of Canterbury Landscape Concept



Sustainability Office
University of Canterbury
October 2014

UC Landscape Concept

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Executive Summary

The University of Canterbury is internationally renowned for its high quality grounds. With extensive re-modelling of the campus underway at present post-earthquakes, the tenor of this landscape feature must be revisited. However, it is essential that this re-imagining of the campus takes into account what has gone before, as well as capturing the spirit of the times in a city that is radically reinterpreting old ideas about itself.

This *Landscape Concept* is intended to help immediate landscaping designs as part of specific remediation projects and also to inform the forward-looking Campus Master Plan.

It presents a brief landscape history of the Ilam Campus, summarises current thinking and suggests five themes that the new Landscape Plan should take into consideration. These are:

- Continuing to advance native biodiversity
- Continuing work on stream restoration
- Weaving into the landscape the vision of healthy mahinga kai
- Developing the edible campus projects commenced over the last decade
- Celebrating historical connections.

Together, these five ideas can be imagined as being woven together as a plaited rope, an idea proposed for the rest of the city by Ngāi Tahu.



Scholarship students Hui Liew and Ting Powell working with Dr Aisling O'Sullivan to assess water quality in Ilam Stream

Introduction

The Canterbury Earthquakes of 2010-2012 have significantly and irrevocably changed the way Cantabrians relate to the earth. They have also demanded changes to land use on an unprecedented scale, and have created many opportunities for change to a more sustainable future.

At the University of Canterbury these factors will continue to impact on the physical environment for the next decades at least as the campus undergoes a significant revamp. This includes developing a new Campus Master Plan (CMP).

In 2013 the Sustainability Office developed an initial *UC Landscape Strategy* to help guide the landscaping projects already underway as part of campus remediation, and also to support the development of the new CMP. This *Landscape Concept* takes these ideas further and establishes more details around each of them.

Both the *Strategy* and the *Plan* follow on from the 2011 draft *UC Sustainability Strategy, 2012-2022*, which outlined at a high level what the priorities for landscaping should be over a ten year period.

The landscape at the University of Canterbury has changed dramatically over the last ten years to become softer, more ecologically responsive and, as in the case of food provisioning, more sustainable and culturally aware. This Plan seeks to build on these themes.

Three key concepts hold these themes together:

- the **campus as a Living Laboratory**: many parts of the campus landscape are already used in teaching and research (such as the Okeover Stream and the Okeover Community Garden). For example, the grounds are used to provide plants and plant products for botany, chemistry, genetics,



Frances Charters, a PhD student, viewing the Living Roof trial at Civil and Natural Resources Engineering: one method to improve storm water quality

taxonomy, engineering, waterways, biology, and many Arts programmes as well,

- **functional integration:** landscape design should not be viewed as an afterthought or an add-on to the buildings, but as an aspect of the built infrastructure. Such is the case with the feeding of our streams with water used for air conditioning and plans to create wetlands that could filter storm water before it enters the streams (as is the case with landscaping plans for the RSIC building),
- how we can use the landscape to express **cultural competency** (a pillar of the UC Futures Graduate Profile).



Landscaping outside the NZI3 Building, which was awarded 5 Star Green Star status.

Background

UC's landscape has gradually transitioned from being a traditional high-maintenance "English" park setting to a lower maintenance and more ecologically responsive look and feel over the last fifteen years.

There is still no landscaping plan for the whole University, but there have been numerous concept plans for specific parts of the campus. The principles described in this document are based on many years of research and planning by mana whenua, academics and general staff at UC, as well as on many discussions with representatives of student clubs that are stakeholders in this vision.

Mana whenua landscape values

A key concept that is highlighted by Ngāi Tahu and Ngāi Tū-āhu-riri regarding the Te Papa Otakaro/Avon River corridor is that it 'has always been an area of mahinga hai and mahi kai (food gathering).'¹ The productive aspect of the river is to be emphasised in future designs for the river margins. This, of course, extends to the upper reaches, which includes the Okeover, Avon and Ilam streams which all run through the UC campus. Indeed, '[t]he area now occupied by Christchurch city has always been a food gathering space for Ngāi Tahu.'² It is difficult to summarise in a short paragraph the 'landscape values' of Ngāi Tahu and Ngāi Tū-āhu-riri, however it is worth noting that 'a subtle approach is required to incorporate Maori design into the city', and that the 'language of faith, trust, justice and a commitment to the Crown represented by Queen Victoria runs throughout the



Aerial view of the Ilam Campus looking south taking in the 1940s. The main road is Ilam Rd.

¹ Te Maire Tau, 'The Values and History of the Otakaro and North and East Frames' (Ngāi Tahu Research Centre, University of Canterbury, 2013).

² Ibid

language of Ngāi Tahu', and that this, too, needs to be integrated somehow into design concepts.³

A brief history of the UC landscape⁴

The Ilam Campus of UC sits upon an area that was originally 'a rich forest' of matai, totara, kahikatea and miro, with broadleaved trees, ferns and shrubs. Despite successive floods, the area was still densely forested when Waitaha arrived, about 1,000 years ago. This had been largely deforested by 1840 through successive burning. There is no evidence of permanent settlement in the Ilam area, but it was certainly used as a temporary home during harvesting periods.

Much of the Pakeha character of Ilam was established by Edgar Stead. At both Ilam and Okeover, O. Williams noted in 1950 that there were many fruit trees and working vegetable gardens, with apples, peaches, pears, plums, and apricots, as well as asparagus beds and tomatoes. These were thought to be suitable for immediate use in supplying the halls of residence and the Student Union.

Stead is more famous for establishing large beds of rhododendrons and azaleas, and for his breeding efforts of these which are internationally recognised. Indeed, the gardens of Ilam exemplify the gardening ethos of the first colonists with a focus on a variety of edible, flowers and retention of indigenous features, not to mention his strong interest not only in the flora of the area, but also the fauna.

The first University landscape plan was drawn up in 1967, and was focussed on facilitating efficient movement between buildings. The lime tree was selected as

³ Ibid.

⁴ Much of what follows in this section is paraphrased from Jeremy Thin, 'Softening the Edges of a Modernist Campus: A Landscape History of the University of Canterbury Campus at Ilam' (University of Canterbury, 2007),

http://www.sustain.canterbury.ac.nz/documents/uc_campus_landscape_history.pdf



Ilam Homestead, nineteenth century

the official 'university tree' due to supposed academic connotations related to its use in paper manufacture.

One key concept was for University Drive to be further back from the Avon River, to allow for the creation of a woodland area (as at Clyde Rd entrance), so that the stream could be featured. This, of course, did not eventuate at this time but could be considered now as part of the Campus Master Plan.

Planting of the campus (other than the original planting by the Ministry of Works) began in the early 1970s; 1000 trees were planted in 1974 alone.

The informal, parkland style of planting at Okeover Homestead was not considered appropriate for a university defined by its formality, but interestingly it was thought possible to reintroduce this element at the peripheries of campus in order to help blend it with the surrounding suburbs.

From the early 1970s the greenspace around Okeover Homestead was viewed as sacrosanct, and has remained a favoured greenspace. Development plans for that area have been rejected as recently as 1998.

Under Peter Cadigan (Grounds superintendent from 1974), the pin oak became 'unofficial' university tree, and he did not plant many limes. Cadigan's personal interest in azaleas resulted in Galaxy range – 12 unique varieties registered with the Royal Horticultural Society in London.

Another feature that has come to define parts of the campus is mounds. Mounded areas along University Drive and around the Law plaza, and at Clyde Rd (where the intention was to screen the new carpark – viewed as temporary at the time) have provided a key counterpoint to the harsh lines of many of the earlier buildings and made the landscape more interesting. A feature running alongside one of these



Ilam campus: date unknown

mounded areas is the 'Cherry Walk', apparently created at the request of former HOD Music, Professor Ritchie.

A significant break with the 1967 landscape plan (which was never entirely adhered to by Grounds), was the 1998 Plan which featured the concept of the University of the Plains. This meant a conscious effort to reflect a place-based landscape vision that acknowledged indigenous associations.

This had been foreshadowed in 1996 when mowing the stream edges finally ceased, followed by the first significant riparian restoration plantings in 1997, when a collective of entities (with Kakariki Environment Club leading the charge) planted 900 native trees and shrubs along the Avon Stream. The Christchurch City Council, and in particular, Rachael Barker, were pivotal in support for this work. The introduction of more native vegetation, recalling the original kahikatea association pre-human settlement, became a feature of this period and reached its apogee with the re-modelling and replanting of the Okeover Stream from 2002. This has become a signature landscape feature of the university campus and has won many awards.

In 2002 the Kakariki Environment Club established the Okeover Community Garden with Facilities Management along organic and permaculture principles. Planning for this garden was conducted by Kakariki and the Sustainability Office with garden designer Lily White. This garden was abundant with fruit and vegetables and remains a favoured spot for lunches, meetings and gatherings. One reason for this is that it is a sheltered, intimate and delightful area, informally planted in raised beds made of recycled materials, mixing unusual fruits and vegetables with many flowering plants including, of course, rhododendrons and azaleas. Approximately



UCSA Building: date unknown

650kg of produce is grown and distributed from the community gardens annually.⁵ In 2010 a second community garden was established on the Dovedale site, which incorporated several fruit trees paid for by the UCSA.

Continuing on this theme, the Grounds department, led by Darryl Cone, has experimented since 2010 with edible planting schemes in two areas that feature fruiting shrubs and small trees (lemons, pears, feijoas, Chilean guavas and limes). Research conducted by Mario Fichtner in 2012 established that 11.5% of the campus is potentially suitable for growing food (which does not include Ilam Fields!).

The notion of an 'edible campus' fits in more broadly with a post-earthquake vision for Christchurch as 'an edible Garden City', enthusiastically endorsed and supported by the City Council's Environment Committee in July 2014. Indeed, the Council is developing its own Food Resilience Policy and Action Plan in consultation with the community. Furthermore, mahinga kai is recognised by Ngāi Tahu as a key value. The original Ngāi Tahu interpretation of the term mahinga kai is 'all food producing places'.⁶ The 'edible campus' concept is very much in-step with the spirit of the times.

Changing student values around landscape

Considerable student enthusiasm in stream restoration and native vegetation was expressed throughout the 1990s and this is reflected in university plans of this period that note Kakariki as a key partner.

⁵ Based on data from '2013 UC Sustainability Office Report', http://www.sustain.canterbury.ac.nz/documents/UC_Sust_Report_2013.pdf

⁶ Te Maire Tau, 'The Values and History of the Otago and North and East Frames' (Ngāi Tahu Research Centre, University of Canterbury, 2013).



Okeover Stream headwaters, c.2003

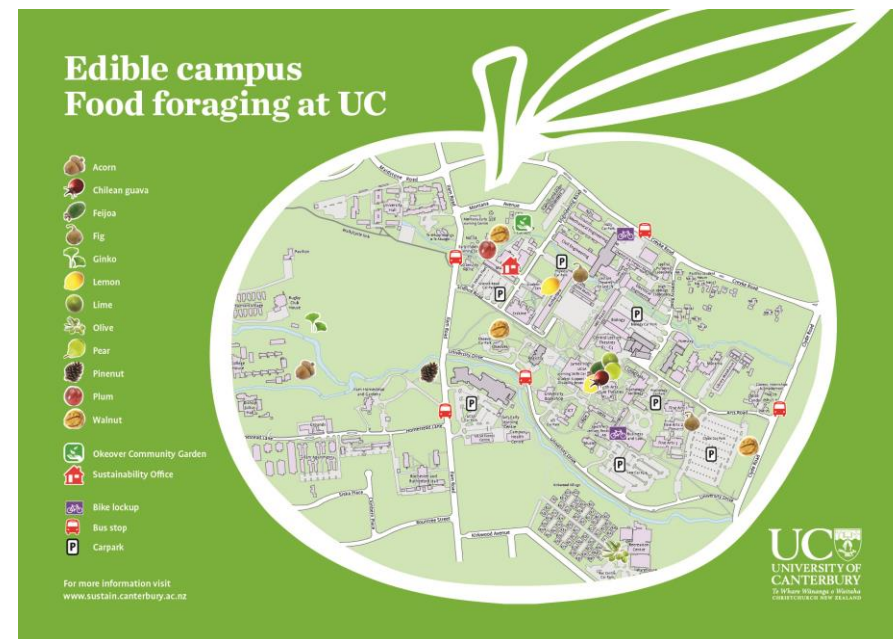
In recent years this has gradually shifted to a much stronger interest in planting and maintaining edible varieties. The student club DigSoc was established in 2013 to promote food gardening amongst the student community, and Kakariki have been leading efforts to educate students about permacultural concepts such as food forests. BioSoc presented a ten page proposal for establishing more fruit trees on campus to the Sustainability Office early in 2014. A student intern surveyed over 300 students later in 2014 about their access to food. 70% reported that they felt there were barriers to their access to healthy and nourishing food; 88% of those regarded cost to be the main barrier. 87% of respondents said there needed to be more support for students in regards to food accessibility. 76% of respondents stated that, from a list of 11 options, they would personally use fruit trees on campus either 'always' or 'frequently'. (80% said they would use a farmers market 'always' or 'frequently'. Interestingly, only 50% said they would access a shared garden 'always or frequently').⁷

It is worth noting that in 2014 the Okeover Community Gardens group developed a new vision and mission statement which summarises this new student view, and is much broader than gardening for the sake of gardening. Their vision is 'to create an attractive, living campus that is transitioning into a resilient, edible biophilic landscape'. Their mission is 'to nurture a community of people who grow and share food, and use their knowledge to influence campus design and policy.'

Landscape Vision: A Plaited Rope

This Plan centres around the sensible weaving together of five principle strands as one plaited rope: enhancing native biodiversity, stream restoration, mahinga kai, edible planting and historical associations.

⁷ Kate Walsh, 'Student Food Survey' (UC Sustainability Office and Food Resilience Network, Christchurch, 2014), forthcoming.



'Edible Campus Map', 2014

Enhancing Native Biodiversity

As landscape practices have changed, the University campus has become a useful and attractive habitat for native fauna, especially birds. It is an important 'stepping stone' in a wider ecological context (Riccarton Bush being a notable neighbour).

Preference should be given for tree planting using suitable native plants. Where any native trees are removed as part of the remediation process, they should be replaced elsewhere on campus.

In certain areas (such as between RSIC and CETF), native flora could be used to connect indoor and outdoor spaces. It is highly recommended that building storm water systems and air conditioning water discharges should be connected to wetland areas where possible (eg where the Biology carpark currently is) as contaminants from such discharges affect stream fauna to a very significant extent.

Consideration should be given to increasing numbers of native plants that play a role in tikanga Maori, such as harakeke, totara, kawakawa, ti kouka and poa.

Stream Restoration

There are three tributary streams of the Avon River flowing through campus, and all are important habitats. Whereas the Avon Stream received initial attention from students in the 1990s (because it flowed past the UCSA building), the Okeover Stream received the majority of the attention throughout the 2000s. The Ilam Stream, while very small, is in poor condition and needs attention.

The priorities should be to continue the work programme established for all three streams, focussing first on completing works on the Okeover Stream. The large culvert outside Engineering should be removed. Bridges are highly recommended rather than culverts as bridges interfere with the ecological health of stream fauna



to a much lesser extent. This includes a significant redesign of the northern side of Ilam Fields along the 'Ephemeral' stretch of the stream that would hopefully involve mini wetlands. This is viewed as essential to improving in-stream biodiversity and is the subject of a large grant application to the Christchurch-West Melton Zone Implementation Committee.

The Avon Stream also requires much greater attention, and it is felt that this should be incorporated into plans for any new footbridges to connect the main site with the Kirkwood Village. Detailed designs will be required for the Avon Stream, but these will need to reference the works already undertaken on the Okeover Stream.

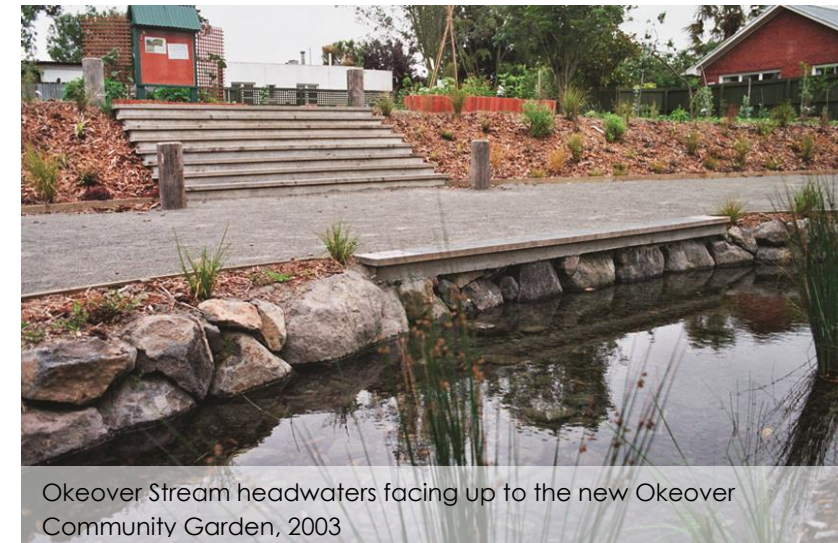
Together, the Okeover and Avon streams form major corridors through campus running parallel to each other, and while Okeover Stream is currently considered to be the primary 'ecological corridor' through campus, it is important to bear in mind that this is the intention for the Avon as well.

Mahinga Kai

The considerable restoration work along the Okeover Stream provides an opportunity to embody the intention of enhancing the cultural competence of all UC students. The stream is already used as a teaching tool in courses such as ARTH108 Mahi-a-ringā ('Customary Material Culture'). Research conducted in 2013 as a collaboration between the Ngāi Tahu Research Centre, the Centre for Freshwater Studies and the Sustainability Office identified the importance for Maori of growing more food on campus. It was felt that this would be especially suitable for the area around Te Ao Marama because it would provide the opportunity for Maori to practice manakitanga and to manifest a vision for a marae on campus that would speak to the true meaning of the word rather than as a collection of specific buildings.



Okeover Stream headwaters, 2003



Okeover Stream headwaters facing up to the new Okeover Community Garden, 2003

Growing food close to the Okeover Stream would also build on the eleven years of food growing along the “Headwaters” stretch of the stream in Okeover Community Garden. However, it is also recommended that the indigenous plantings along the stream be enhanced and that edible varieties be maintained close by but not necessarily intermingled.

Edible Planting

The idea of growing food on campus has been embedded for over a decade and is growing in popularity. There are now two community gardens on campus. Trial patches of edible planting are in place beside Student Services and by 1894 Café in the James Hight building. These new plantings have not gone unnoticed by students and respectful harvesting from them has been observed by staff.

This *Concept* suggests expanding these trials, and potentially creating some feature edible plantings, for example in the proposed plaza between the James Hight Library and Central lecture theatres, and along the walkway that stretches from Psychology to the Erskine Building. It is not suggested that annual vegetables be a feature of any such plantings as they would require far too much maintenance. Varieties would need to be low maintenance and would also require input from student clubs such as Kakariki, BioSoc and DigSoc, who are currently advocating for more such spaces.

There has also been much discussion about planting more fruit trees on campus. Small orchards already exist in the Okeover and Dovedale community gardens (the latter partly funded by the UCSA). There are also figs, walnuts and other fruit and nut trees on campus. This strategy suggests there is merit in planting clusters of fruit trees in specific areas where they will help tell a particular story about the University. Two particular areas are between the new RSIC and CETF buildings and on the banks of the Okeover by Te Ao Marama. However, the general goal should be towards developing an ‘edible campus’ (as many other tertiary institutions are



Typical harvest from the Community Gardens, March 2014

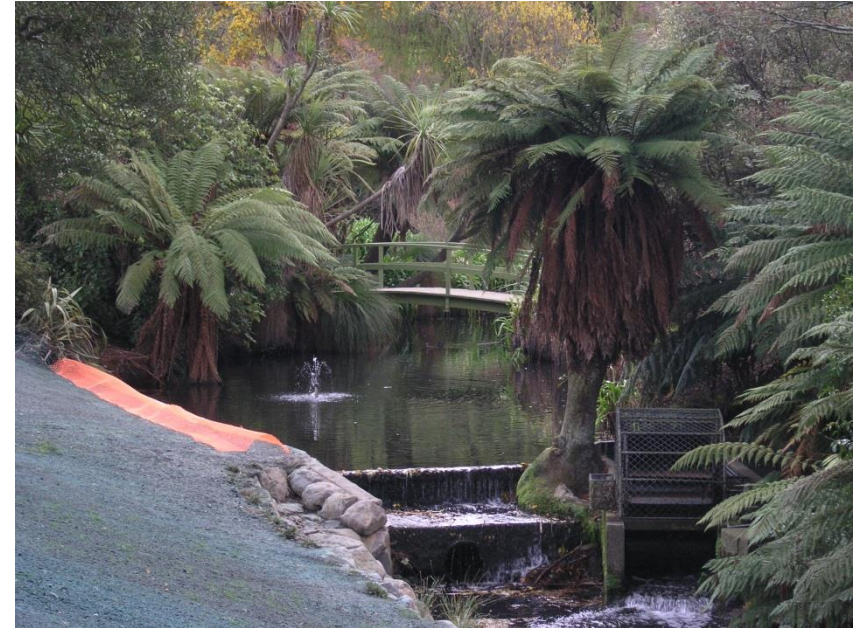
doing) and thus strategically connecting UC to the new wave of Garden City thinking emerging in Christchurch and green city thinking internationally.

Any soft fruit would need a soft fall area under them, which can be difficult to maintain. However, some fruits that are ripe only when they drop (such as feijoas) can be ideal as people do not tend to climb the trees to harvest (and therefore there are no Health & Safety concerns). Olives, walnuts and potentially pecans are all good contenders. Citrus trees tend to be low growing so are ideal. Currants and berries would need to be contained in a concrete border or by another hard surface.

Historical Associations

UC also has an important historical connection with the work of Edgar Stead at the Ilam Homestead. Stead's collection and breeding of rhododendrons and azaleas is world famous, and these plants have a special place on the Ilam Campus, and especially through the Ilam Gardens.

There are also important pre-European associations, which relate to some of the points already mentioned above.



Avon Stream, Ilam Gardens

Related Plans

Regional Science Innovation Centre (RSIC)

The new RSIC development is a huge driver for landscape planning on campus and preliminary designs have already been drawn up that set the tone for a considerable area of the campus landscape. These drawings are highly sensitive to cultural aspirations and the pre-existing ecology of the area. They also cleverly integrate stormwater discharge with landscape features that will filter the water before it reaches the Okeover Stream. These same principles could be applied more widely potentially as a general approach to landscape planning.

UC Cycle Plan

The UC Cycle Plan (2014) establishes key criteria for cycle planning at UC over the next eight years. While not prescribing any particular areas for particular developments, it does clearly articulate a vision for an integrated design approach to cycling infrastructure and this will have a bearing on landscape planning. The most obvious intersection between the two plans is cycle route planning, and making sure that any paths that need to be constructed reflect the core values of both sets of plans.

UC Waste Plan

The UC Waste Plan (2014) must equally be consulted, particularly with regards to its recommendations about the long-term future of organic waste on campus and options to increase the volume of material currently being composted on-site. Any vision of an edible campus – as is prefigured in this *Landscape Concept* – has the



Okeover Stream walk, 2012 (note the plant growth since the 2003 images on p.13 from the same path)

opportunity to be nurtured by on-going inputs of compost which would create a low-cost and virtuous 'closed loop'. The approach of the Waste Plan would be greatly enhanced by being developed in tandem with this *Landscape Concept*.

Next steps

These five areas of native planting, stream restoration, mahinga kai, developing an edible landscape and historical associations could, if woven together logically (the 'plaited rope'), create a strong point of difference for the University and demonstrate ways forward for the Garden City post-earthquakes.

It is suggested this *Concept* be given to any landscape architects who may be commissioned to develop a landscape plan for the University of Canterbury.

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