

Looking Backward

How the legacy of Christchurch's past is playing a role in its future

Jacky Bowring
Lincoln University
Jacky.bowring@lincoln.ac.nz

As Christchurch begins rebuilding after the devastating earthquakes of 2010 and 2011, the city's past lingers in a range of ways. This presentation explores three key legacies from the 19th century, when the city of Christchurch was established by English settlers, and reflects on how these factors might influence the future. First, utopian thinking was an underpinning motivation for the city's establishment and design. This is apparent in the urban form, as well as the comments from the time from influential individuals like John Robert Godley, the city's founder. Arguably the current 'blueprint' for the central city rebuild echoes utopian dreaming from the past, and physically repeats some of the design moves of the first city plans. Second, the structuring devices put in place by these early plans remain relevant in unexpected ways in the context of disaster resilience. While motifs such as the grid and Victorian park design might have been targets for critique by those seeking a more organic and 'natural' city form, interviews with emergency personnel reveal that it is precisely these devices which became valuable tools for disaster response. And third, the aesthetic convention of the Picturesque shaped the ways in which the settlers both appreciated and modified the landscape they encounter. In turn, the Picturesque remains an ambivalent factor in the visions for the future, as ecological concerns are balanced against entrenched ideals.

Christchurch's earthquakes have provided a unique opportunity for a city to re-imagine itself, and the resonances with its past provide insight into the persistence of some aspects of history and the transformation of others.

Keywords: Utopian planning, resilience, picturesque design, urban ecology

Introduction

In Edward Bellamy's utopian novel *Looking Backward*, Julian West who lives in late 19th century Boston is hypnotised and wakes up in the year 2000, in an ideal society, with equality for all, no crime, and no jealousy. This sense of waking up in the future, in a version of utopia, lingers in the plans for Christchurch's rebuild. Some three years after the most devastating of earthquakes shook the city, the rebuild is gaining momentum. Layers and layers of visions, plans, and possibilities have emerged, as both formal and informal planning and designing aspire to an ideal future for the city.

This presentation explores three key legacies from the 19th century, when the city of Christchurch was established by English settlers, and reflects on how these factors might influence the future. I'll look at the legacy of utopian thinking, and how those early idealistic ambitions are echoed in some of the recent visions. I'll also explore how the Picturesque aesthetic lingers as a visual ideal, and how it might align with aspirations for a more ecologically pure city fabric. And finally, the structuring devices and patterns put in place by the early city plans remain relevant in unexpected ways in the context of disaster response.

Christchurch's earthquakes have provided a unique opportunity for a city to re-imagine itself, and the resonances with its past provide insight into the persistence of some aspects of history and the transformation of others.

Context

By means of introduction, I offer a quick outline of my involvement in exploring the issues of the post-quake city. The earthquakes have provided a challenging environment for designers and academics, and I have been fortunate to have opportunities to contribute to the process in a range of ways. I was a member of Team NZ Wood for the 48 Hour Design Challenge, an international design competition for the Christchurch rebuild. Each team was made up of two landscape architects, two architects, two engineers and a student, and our team focused on the use of timber for its strong potential for structures which perform well in earthquakes; the retention and reuse of heritage buildings; breaking up monolithic street blocks with a pedestrian network and centre-block open area for markets and gathering; retrofitting of well-engineered structures such as the Manchester Street carpark building; the revealing and expressing of underlying biophysical conditions; and the use of vegetation to assist with point-source stormwater treatment. Our scheme, Transformer (a play on the fact that this site was occupied by Orion, Christchurch's electricity infrastructure company), was the Supreme Winner of the competition, and is shown in Figure 1.

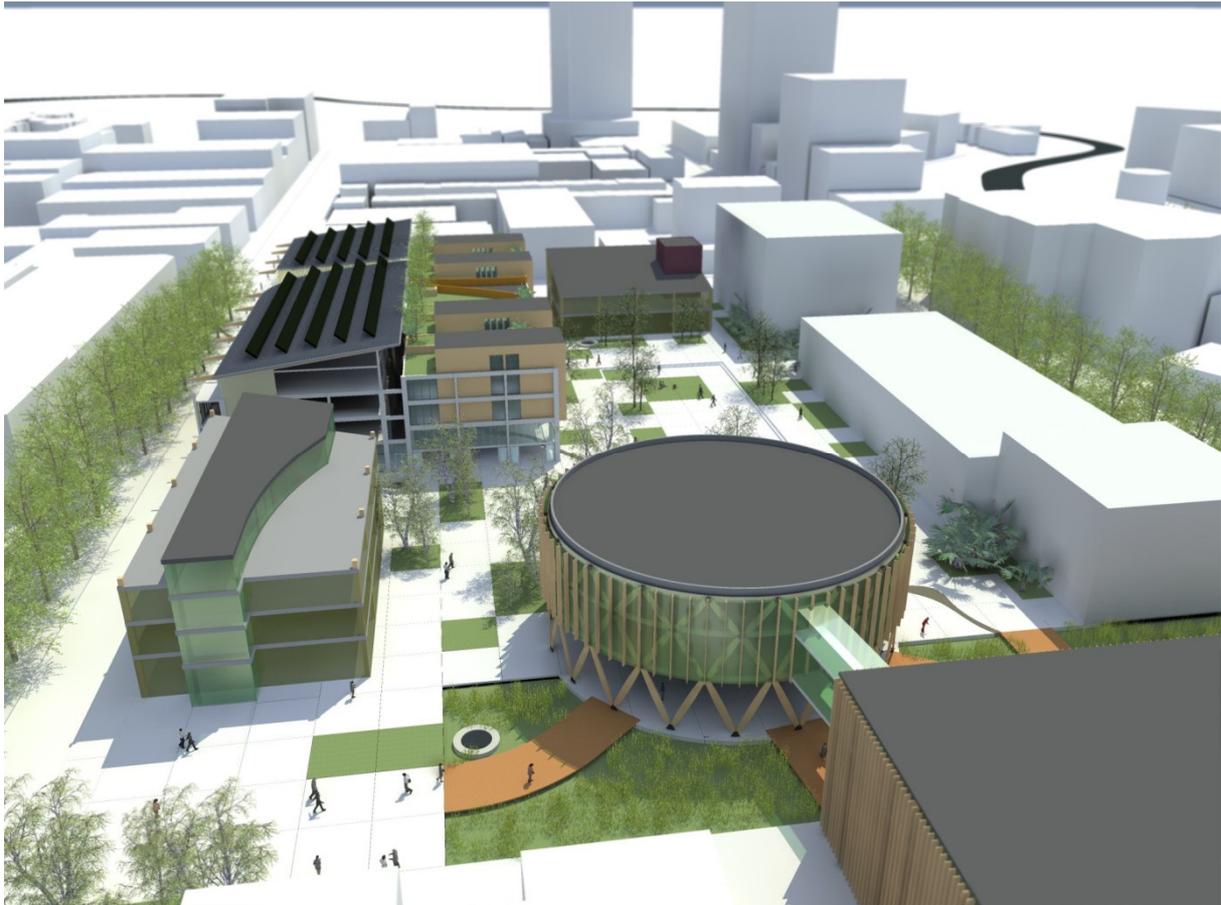


Figure 1: Team NZ Wood, 'Transformer' 48 Hour Design Challenge (Ben Carter, Chris Speed, Di Lucas, Jacky Bowring, Jason Guiver, Jasper van der Lingen, Paul King)

I have also been involved as a consultant for various design and planning proposals for the rebuild, including the Remembering section of the Draft Central City Plan (<http://resources.ccc.govt.nz/files/CentralCityDecember2011/FinalDraftPlan/FinaldraftCentralCityPlan.pdf>), and the process for an earthquake memorial. Invited articles for *Harvard Design Magazine* (Bowring and Swaffield 2013) and *Change Over Time* (Bowring 2013) gave further scope for exploring issues related to the earthquakes, particularly in the context of a cultural landscape perspective of identity, values and heritage. Further research is exploring how urban form can support or hinder the immediate post-quake emergency activities.

As a preface to a discussion of the historical legacies that are weaving their ways through the rebuild it is useful to briefly recap on the impacts of the earthquakes on Christchurch. The first earthquake occurred on the Greendale Fault which is in the countryside near Christchurch, and produced a 7.1 Mw shake at 4.36am on 4 September 2010. The quake did not cause any deaths, and for a while Christchurch residents felt relief at having being spared from major tragedy, thanks to the timing of the quake during the very early morning, and the building codes which seemed to have protected against major failures. It did, however, create widespread damage to the rural areas, parts of the city, and the infrastructure including roads and railway lines. It also produced Christchurch's first recent experience of liquefaction, the phenomenon of soils liquefying during shaking. The September earthquake produced the strongest earthquake ground-shaking recorded to date in New Zealand, with the ground near the epicentre moving at 1.25 times the force of gravity.

The worst was still to come. One of the aftershocks from the September quake occurred a few months later, in the middle of a weekday lunchtime, when the previously unknown Port Hills fault produced a 6.3Mw earthquake, very shallow and very close to the city. Ground shaking in the February earthquake exceeded that from the September quake, reaching 2.2 times the force of gravity. Multiple strong and violent shakes caused catastrophic damage, and killed 185 people. Since the first earthquake on September 4th 2010, Christchurch has experienced over 13,000 aftershocks. The ground shaking experienced in the 6.3Mw quake in February 2011 was extreme, and in world terms is topped only by the Japanese earthquake which occurred not long after, in March 2011. At 2.2gs, the demands placed on the built environment were severe, and engineers would not normally design structures to withstand anywhere near that degree of shaking.

As a consequence of the extreme ground shaking, three significant phenomena impacted on the landscape of the city:

- Rock fall occurred on the hills to the south of the city, which are the remains of an extinct volcano, and the location of the Port Hills fault;
- Lateral spreading occurred where land tried to move downhill in the shaking, especially on the margins of the rivers;
- And liquefaction which erupted silt from the ground, swamping buildings and vehicles.

The effects of ground shaking, combined with rockfall, lateral spread and liquefaction, has meant that many buildings which did not collapse in the initial large shakes are too unsafe, or uneconomic, to repair. Vast areas of the city and in the surrounding areas are being demolished, and around 1500 buildings will be demolished in this area, which will amount to about 80% of the Central Business District. The Residential Red Zone contains around 8000 houses which are being bought by the Government and will be demolished. These homes are where ground conditions or the threat of rock fall means these areas are no longer suitable as residential areas. The complexities of the Residential Red Zone are a nightmare mix of insurance hassles and the inevitable stress that comes when people must leave their homes and familiar neighbourhoods, and the issues over losing this sense of place. Meanwhile these abandoned areas are succumbing to nature. Aspirations for the red zoned land include visions of a large park following the Avon River, a possibility which has the potential to create a meaningful legacy for the city from the earthquakes. The waterfront in Toronto, Canada, illustrates how significant such a dramatic change in land use can be, where retreat from the water's edge following the impacts of Hurricane Hazel in 1954 saw built-up areas replaced with a park, including a pedestrian bridge to memorialise the lives lost.

Legacy One: Utopian Thinking

Utopias present possibilities. They embody the aspirations of a perfect world, an ideal life, and are vivid expressions of the values of their designers, and are often created in a geographical vacuum. The challenge is to find that perfect, untouched, uncontaminated place in which to place these utopias. Yet, the landscape is never benign or mute, and the perfect ideal of a utopia is always already at the mercy of the imperfection of humans as much as the quirks of topography, climate, and ecology.

The term Utopia was coined by Thomas More in his eponymous book of 1516, where he used the neologism to express literally a 'non-place', but it is also a homophone of 'eutopia' which is a good place. Utopias and cockaignes represented yearnings for other places and perfect worlds. While cockaignes were built on the mythical possibility of a land of plenty, utopias required a more structured vision about how a perfect place *should* be. The late 16th and 17th centuries were a fertile time of utopian dreaming, including the work of More, as well as Tommaso Campanella's City of the Sun, and the many versions of ideal cities of the Renaissance - including those following a military logic like Palmanova.

New Zealand has a particularly strong relationship with the idea of utopia. Sargent (2010) highlights how those colonies based on settlement – such as North and South America, South Africa, and New Zealand – were productive of utopian visions. Colonies based on exploitation or the removal of problems – such as the exporting of convicts to Australia – weren't so readily aligned with the idea of a perfect world. Apart from the possible exception of the United States, New Zealand is the settler colony with the strongest utopian tradition, as a product of 3 distinct conditions:

1. Remoteness and benign-ness

One of New Zealand's characteristics which lent itself even more readily to the idea of utopias was its island form, enriched by its remoteness. New Zealand, unlike Australia, was also a place where there were no dangerous animals. It presented the prospect of a perfect, benign world hovering at the edge of the European imagination. Like More's Utopia, islands are often the chosen geographical forms for perfect worlds, just as much as they are marginal locations to hide the negative aspects of existence (Bowring 2011). Anthony Trollope set his utopian, or more correctly dystopian, novel *The Fixed Period* in an imaginary island near New Zealand, called Britannula, in the year 1980. Trollope visited New Zealand in 1875, and was evidently affected by being here. He imagined a society where there is compulsory euthanasia for people in the 67th year – the so-called 'fixed period.' Trollope was himself 67 while he wrote the book, and he died that same year.

Samuel Butler was also influenced by his visit to New Zealand, arriving in 1860. He headed for the remotest area in this remote country, up into the back country in the headwaters of Canterbury's rivers. His explorations, including the discovery of the Whitcombe Pass in 1861, provided the basis for his narrative in his novel *Erewhon*. And like Trollope, Butler's work was dystopian rather than utopian, both of them perhaps influenced by the publication of Charles Darwin's *On the Origin of the Species*, which they both read.

2. Timing

Alessio (2004) suggests that the New Zealand utopian tradition, in terms of literary utopias, may have been in part connected with the lateness of European colonisation, in addition to the distance from the Old World. There is a parallel to the Goldilocks hypothesis of other possible planets containing life (too hot, too cold, just right) in terms of why New Zealand might have represented the potential for the realisation of a utopia akin to Thomas More's vision. As Alessio explained, "Unlike the United States (which had developed too many Old World problems), Canada (which was too cold and partly French), South Africa (which was too black) and Australia (which with its penal settlement history had actually begun as a dystopia), New Zealand seemed to have real utopian potential." (Alessio 2004: 75) The booster writing and booster painting (Bowring 2010) underscored the representation of New Zealand as a perfect world, enticing migrants from the Old World.

3. *Tabula rasa*

Related to the elements of remoteness, benignness, and the timing of settlement was the sense of New Zealand as something of a *tabula rasa* – the latent possibilities of a blank slate. Ample access to empty land – as seen in the work of the booster painters – and the equality of a society unbound by the burdens of a class system, meant that there were real possibilities here. Sargent notes how letters home from New Zealand often referred to workers and farm owners eating at the same table and being served the same food (Sargent 2010: 103). And Sargent also highlights how, from the time of More's *Utopia*, such imaginings were associated with the idea of colonisation – that they were seen as being supplements to existing communities. This seemingly empty land of New Zealand reinforced the perspective.

Examples of designed utopias in New Zealand include Robert Pemberton's plan for The Happy Colony (Pemberton 1895). The Happy Colony is an interesting parallel with Christchurch, as it epitomises the way in which geometric designed utopias were imagined as arriving onto the *tabula rasa* of a flat empty plain. Pemberton was very aware of the concept of utopia, and even urged his potential colonists to read More's *Utopia*, but cautioned that such an ideal could never be achieved under a "property government" and instead required rational labour instead of wealth as the fundamental driver. Pemberton planned his perfect settlement in a precise form, with the intention of realising it in Taranaki. Like much of the planning of New Zealand, it was done back in the Mother Land, without any local knowledge of the landscape or its inhabitants. At one point in Pemberton's book, The Learned Friend asks the Philosopher why he didn't consider America as a suitable location for his intended Happy Colony, to which he replies that the continued presence of slavery there is a problem. Instead "I believe I am right in proposing the beautiful island of New Zealand to be the spot for the first stone of the temple of happiness to be laid, as it may be said to be in its infant state, and uncorrupted by any large collection of people; and more especially as it has been held sacred, and kept free from the contamination of the offenders from the mother country..." (Pemberton 1895: 25).

The design of the Happy Colony symbolically expresses Pemberton's value system. At the heart of the community is a model farm. Surrounding it are colleges of learning and gardens in the shape of the terrestrial and celestial globes. He was concerned with how people would learn in the colony, and this is given physical form.

Pemberton's utopian dreaming slammed headlong into the reality of the landscape for which it was intended. He had urged the workmen of Great Britain to purchase two hundred thousand acres "in the neighbourhood of Taraniki [sic], now called New Plymouth" (Pemberton 1895: 77). One end of the tract was to "adjoin the seashore [so] that the treasures of the deep may be at the command of the colonists." Instead of a *tabula rasa*, they encountered a diverse landscape, including a volcano, and an already-settled landscape. As Sargent observes, Pemberton's Happy Colony "specifies the creation of a community in an area of New Zealand that was heavily populated by Maori as if there was no one there at all." (Sargent 2010: 205).

Christchurch is infused with a kind of utopian dreaming. This idea of Christchurch as a utopia was even reflected in Anthony Trollope's *The Fixed Period* (1882) where in the future, mid-twentieth century, on the island of Britannula, there is a place called 'Little Christchurch.' As the narrator observes,

Everything that human nature wants was there at Little Christchurch. The streams which watered the land were bright and rapid, and always running. The grasses were peculiarly rich, and the old English fruit-trees, which we had brought with us from New Zealand, throve there with an exuberant fertility, of which the mother country, I am told, knows nothing. (Trollope 1882: no page numbers)

Little Christchurch is expressed as the epitome of Englishness, and is the very place where the cricket match between the Britannullians and the visiting English is to be staged. This transposition of a perfect version of Englishness onto the landscape, via the vector of New Zealand, echoes with the observations of another 19th century visitor – Mark Twain – who followed in Trollope’s footsteps some twenty years later. After arriving in Christchurch Twain remarked,

It was Junior England all the way to Christchurch - in fact, just a garden. And Christchurch is an English town, with an English-park annex, and a winding English brook just like the Avon ... It is a settled old community, with all the serenities, the graces, the conveniences, and the comforts of the ideal home-life. If it had an established Church and social inequality it would be England over again with hardly a lack. (Mark Twain 1895, 134-5)

The layout of Christchurch was again a diagrammatic expression of ideals. While the Happy Colony had a farm at its centre, Christ Church cathedral was the symbolic centre of the city. The city’s founder, John Robert Godley remarked in 1852:

When I first adopted and made my own the idea of this colony, it pictured itself to my mind in the colours of a Utopia. Now that I have been a practical coloniser, and have seen how these things are managed in fact, I often smile when I think of the ideal Canterbury of which our imagination dreamed. (Quoted in Hall 2012: 23)

Jumping forward over a century and a half, the images of the Blueprint developed for the rebuilding of inner city of Christchurch are emphatically utopian, showing vivid blue green landscapes filled with happy citizens. I’ll return to the persistence of the picturesque aesthetic later in the talk, but at this point it is worth noting how the images echo the idea of a utopia – they are visions of an urban paradise, reminiscent of Corbusier’s Radiant City , Frank Lloyd Wright’s Broadacre, or Ebenezer Howard’s Garden City.

The connections between Christchurch and the Garden City are intriguingly intertwined. Howard’s book was first published in 1898 as *To-Morrow: A Peaceful Path to Real Reform* and then as *Garden Cities of To-Morrow* in 1902, half a century after Christchurch’s plan was laid out (Howard 2007/1902). Howard was affected by Bellamy’s *Looking Backward* and the ideas of a planned city based on community service. He noted that his “scheme is a combination of three distinct projects which have, I think, never been united before. These are: (1) The proposals for an organized migratory movement of population of Edward Gibbon Wakefield and of Professor Alfred Marshall; (2) the system of land tenure first proposed by Thos. Spence and afterwards (though with an important modification) by Mr. Herbert Spencer; and (3) the model city of James Silk Buckingham” (Howard 2007/1902: 119).

The plan for Christchurch pre-dated Howard's Garden City, but it very much reflected the zeitgeist of Howard's vision. The connections were woven into the ethos of utopian thinking of the time. Edward Gibbon Wakefield led organised settlement in New Zealand, and worked with John Robert Godley to found the Canterbury Association, and ultimately to create Christchurch as a Church of England settlement. Wakefield's theory of colonisation was based on the idea of bringing a slice of English life to New Zealand, with settlers who were of good character and Christians. While this underpinned the establishment of Christchurch, as well as other settlements in New Zealand, it was also embedded in Howard's Garden City theory. Although Christchurch is implicated in Howard's Garden City ideals, the first time that it was actually called the Garden City is believed to be in 1906 when Sir John Gorst visited Chch for the International Exhibition and reinforced this connection to the Garden City. (Star 1906)

The greenbelt of the early utopian city layout of the 1850s is echoed in the key move of the Blueprint – the Frame – albeit at a slightly different scale. The original vision for a green belt didn't last long – and the map of 1877 bore no trace of it. The same has happened with the Blueprint's Frame, where recent images already show it heavily compromised with building. The incursions into the East Frame are predominantly residential, and this is one of the challenges for the development of inner city Christchurch. One of the legacies of utopian thinking in Christchurch is the low density urban form, with even the city centre being relatively low density by international standards. And as in many New Zealand settlements, the central city's main function over the last century has been commercial, with residential areas in the low-density suburban fabric typical of 'garden city' models of development.

One of the imperatives put forward for the rebuild of Christchurch is to densify the city centre, particularly in terms of residential development. Prior to the earthquakes there was a slow trickle of people taking up residence in the inner-city developments, and in the pre-quake times the council was pushing for an increase in inner-city population from 8000 in 2006 to 30,000 by 2026. However, there is considerable inertia for Christchurch suburban dwellers, who are attached to the lifestyle of low-density living. Previous research indicated that Christchurch didn't favour inner-city living. However a very recent study by Opus revealed that half of the respondents would be willing to live in the central city after the rebuild (Opus 2013).

The vision of an intensively settled and vibrant inner-city presents a kind of utopian future for Christchurch, and this is evolving as a possibility. It is necessary to find a balance between compaction and dispersal, as resilience theory suggests that it is important to spread risk, and ensure that there are multiple centres in case one centre fails. So although polycentrism might on one hand suggest a counter to the idea of the compact moncentric city, it is also a means of fostering adaptability and resilience. Being able to be self-sufficient in a post-quake situation remains a priority for many – something which is much easier to achieve on a suburban section where it is possible to collect your own roof water, cook on a log burner, harvest from your garden, and dig a long drop in your garden.

Legacy Two: The Picturesque

As an idealised and perfected version of nature, the Picturesque was an aesthetic convention which resonated strongly with the idea of utopia. Rather than the geometric and ordered designed utopian

cities, the Picturesque shaped the ways in which the landscape was appreciated, and parks were created as foils to the more rigid parts of the city fabric. The Picturesque expressed a sense of a golden age, an arcadia, as expressed in the paintings of artists like Claude Lorraine, and formulated into a rule-bound approach to landscape design.

At first the settlers in Christchurch struggled to apply the picturesque principles they carried with them from England and Lord Lyttelton pointed out the lack of the makings of the Picturesque on the Canterbury Plains, suggesting this landscape could only be described as ‘repulsive.’ The places which afforded the necessary elements of the picturesque were quickly located, and Dean’s Bush in Riccarton was seen as “a spot with which lovers of the picturesque must be pleased” (Adams, 1853: 33). And as Mark Twain pointed out, Christchurch became ‘Junior England’, a microcosm of a bucolic English landscape inflected with the Picturesque.

The iconic imagery of the Avon winding its way through the city is bound up in Picturesque aesthetics, and underpins some of the debates over how the riparian planting should be approached. In the decade or so preceding the earthquakes there had been a range of debates over the riverbank treatment along the Avon – which often degenerated into a natives versus exotics argument. Even in the 1900s the Beautifying Association was already exploring these tensions and opportunities, with the discussion of Barker’s Plantation – a garden planted on the banks of the Avon, made up only of native plants. (Star 1900)

The visualisations produced for the rebuild are shot through with a sense of utopian idealism, and also with the aesthetic conventions of the Picturesque. The Avon River Precinct is one of the Blueprint Anchor projects for the City Rebuild, and continues this earlier pastoral idealism (see <https://ccdu.govt.nz/projects-and-precincts/te-papa-otakaro-avon-river-precinct>). In their bucolic imagery, their staged social moments, the blue sky and verdant green, the images remind us of the booster paintings that artists like John Bunney produced to lure settlers to New Zealand (Bowring 2010). Bunney himself never came to New Zealand, but he knew what people liked and he set out his views of the landscape in order to meet the desires for a particular kind of landscape, with sufficient human control so as not to be totally wild, and with the sun always shining.

The imagery for future Christchurch carries this idealism forward, the baggage of utopia and the picturesque, sits right here in the visions for the 21st century city. While on one hand the imagery for the future of the river capture the current flavour of visualisations produced internationally, they are also heavily inflected with Christchurchness, and the legacies that bind the city to its design history. When Victoria Square was remodelled in the late 1980s and won a New Zealand Institute of Landscape Architects award, the judges citation included the comment, that only in Christchurch would this happen – with reference to the aesthetic and the continued prominence of the statues of Queen Victoria and Captain James Cook. In the visions for the Avon River Precinct the statues of Queen Victoria and Captain James Cook are re-deployed a little, including having Captain Cook define a new axis in the city, with him staring into the distance towards the Pacific Ocean. History is complex and working with both the imported languages of design and ideals, alongside the given landscape’s natural character, creates a rich and challenging situation. And as in the early days of the Beautifying Association the dialogue between indigenous and exotic planting continue, as expressed in images of the Avon River Precinct which show an ongoing effort to at once honour an aesthetic history and also to enrich our native flora.

Legacy Three: Patterns

Utopian designed cities were often strongly geometric, symmetrical, and patterned. Christchurch's gridiron is a residue of this kind of thinking about city form. The grid was a common structuring device used by colonisers, providing a readymade map, and an ability to organise land use relatively easily. The grid is aligned not only with colonisation and utopian models, but also with a wholeheartedly utilitarian approach to the landscape. While it seems self-evident in the rebuilding of the city that the waterways and ecology should be protected and enhanced, in the early years of the city's development these elements were seen as aesthetic and practical problems. The grid pattern was insistent, and although it yields to the meandering Avon River, over the years it slowly suppressed all other water elements within the central city.

It is enlightening to read earlier accounts of the city, as they serve as stark reminders of the relatively recent changes to the city and how quickly the transformation is forgotten, and accepted as a given condition. For example, writing in 1949, Johannes C Andersen described a gully that ran through the city, and he notes that it was an old storm water channel, and he traced its route from St Michaels to Cashel Street, Colombo Street, the BNZ, Warners, Gloucester Street and down to the Avon River. Drays and horse riders would become bogged in the places where it crossed key roads, and people had become ill from drinking the water (Andersen 1949: 274). The route described by Andersen is a landscape element which is no longer at all evident in the contemporary city, but shows clearly on the 'Black Maps' which were drawn by the surveyor Jollie who laid out the city in 1850. These small streams had persisted through the early years of building in the city, but had subsequently disappeared under the development of streets and buildings. While Andersen described this gully as an indication of the 'unkempt' nature of the city, the water course was a fundamental part of the water system, and an indication of the very swampy land the city was built on. In the drive to become a civilised and ordered city, these 'unkempt' areas were simply covered over, a practice which had dire consequences in the longer term.

In hindsight it has become evident that these moves to edit out the unkempt areas of the city by covering them over were the root of serious problems during the earthquakes. Through overlaying the Black Map with a contemporary view of the city, landscape architect Di Lucas pointed to how patterns of damage in the city related strongly to the areas where tributaries of the rivers had been covered over (see <http://lucas-associates.co.nz/assets/images/Avoid-structures-Image.jpg>).

Alongside utopian leanings, the picturesque and the grid, another accident of the timing of Christchurch's early development has left its legacy. Following on from the Picturesque in the history of the designed landscape in England was the much more intricate and cluttered Gardenesque style, and this too was exported to Christchurch. The Victorians were, of course, extreme pattern makers, covering the surfaces of their world with curlicues and fleur-de-lis. This included elaborate displays of bedding plants which we still see around Christchurch today, and symmetrical path layouts, as in the urban squares of Cranmer and Latimer.

While the grid and the Victorian gardenesque styles have their critics, these elements have surprisingly proven themselves in times of disaster. With widespread disruption and disorientation, elements which aid in organisation and navigation are vital. In Christchurch, the Army was responsible for the securing of the city centre, following the earthquakes of September 2010 and

February 2011. Interviews with Army personnel reveal how the city grid provided an ideal legible city form which allowed for distressed locals and visitors to be moved relatively easily by the army through the city. Further, the grid form allowed for effective use of geometry to efficiently control and eventually reduce the cordon around the central Red Zone area. A grid system also affords layering of temporary circulation patterns, such as creating a hierarchy of heavy through to light vehicular use, and mid-block crossing for pedestrians.

Further, the path layouts of Victorian-era parks offered readymade devices for organising emergency services who needed to set up camps in the central city. Urban Search and Rescue (USAR) teams flooded into the city from around the world, and for local USAR leaders the immediate challenge was how to maintain order. Interviews with USAR reveal how the legacy of the Victorian path layout became an unwitting contributor to the latent potential of Latimer Square to assist in disaster recovery. The path system provided a readymade base-plan for laying out the village of rescue workers, with each nation's USAR team housed within one of the segments described by the path layout.

In conclusion, successful and effective post-disaster management is a vital aspect of resilience, and through better understanding the elements of the city which support emergency response future urban design and planning can be more meaningfully undertaken. The degree to which residents can successfully navigate a post-earthquake situation relies to a considerable extent on the structure of the city. An efficient structure allows for easy movement of vehicles and people through the damaged areas, and also provides flexible space to be used for a range of emergency activities.

References

Adams, C. Warren. (1853). *A Spring in the Canterbury Settlement*. London: Longman, Brown, Green and Longman.

Alessio, Dominic (2004). A conservative Utopia? Anthony Trollope's the fixed period (1882) *Journal of New Zealand Literature*, 22 (Summer 2004): p73-94.

Andersen, J C (1949). *Old Christchurch in Picture and Story*. Christchurch, Simpson & Williams.

Bowring, Jacky (2010). 'Eternal Sunshine: The Search for Spotless Landscapes' in Janet Stephenson, Mick Abbott and Jacinta Ruru (eds) *Beyond the Scene: Landscape and Identity in Aotearoa New Zealand*. Dunedin: Otago University Press.

Bowring, Jacky (2011). Containing marginal memories: The melancholy landscapes of Hart Island (New York), Cockatoo Island (Sydney) and Ripapa Island (Christchurch). *Memory Connection* 1(1): 252-269

Bowring, Jacky (2013), Melancholy, Memories, and Six Nostalgias: Postquake Christchurch and the Problems of Recalling the Past. *Change Over Time*, Pennsylvania University Press.

Bowring, Jacky and Swaffield, Simon (2013). Shifting Landscapes: In Between Times. *Harvard Design Magazine*, 36: 2-11.

Hall, Ken (2012). Laying out Foundations. *Christchurch Art Gallery Bulletin*, B.168.

Howard, Ebenezer (2007/1902) *Garden Cities of To-Morrow*. Abingdon, Oxon: Routledge.

Opus (2013). <http://www.stuff.co.nz/the-press/news/9626971/Would-you-live-in-the-city-centre>

Pemberton, Robert (1895). *The Happy Colony*. London: Saunders and Otley.

Sargent, Lyman Tower (2010). Colonial and postcolonial utopias, in Gregory Claeys (2010) *The Cambridge Companion to Utopian Literature*. Cambridge: Cambridge University Press.

Star (1900). Christchurch Beautifying Association, *Star* , Issue 6802, 23 May 1900, Page 4.

Star (1906) Sir John Gorst: His Farewell to the Garden City, *Star* , Issue 8777, 14 November 1906, Page 3.

Trollope, Anthony (1882). *The Fixed Period*. Ebooks
http://ebooks.adelaide.edu.au/t/trollope/anthony/fixed_period/

Twain, Mark (2008/1895) *Beyond the Equator* (Stilwell, KS: Digireads.com, 2008)