LANDSCAPE REVIEW

THEME

Gardens as Laboratories

CONTRIBUTORS

VOLUME 16(2)

A SOUTHERN HEMISPHERE JOURNAL OF LANDSCAPE ARCHITECTURE

LANDSCAPE REVIEW
A Southern Hemisphere Journal of Landscape Architecture

EDITOR — Jacky Bowring
School of Landscape Architecture,
Faculty of Environment, Society and Design,
PO Box 84, Lincoln University, Christchurch 7647,
Canterbury, Aotearoa New Zealand
Telephone: +64–3–423–0466
Email: jacky.bowring@lincoln.ac.nz

CONTRIBUTIONS — The editor welcomes contributions and will forward a style guide on request.

Landscape Review aims to provide a forum for scholarly writing and critique on topics, projects and research relevant to landscape studies and landscape architecture. Articles are considered and published in three categories. 'Research' articles report on recent examples of substantial and systematic research, using a conventional format that normally includes a review of relevant literature, description of research method, and presentation and interpretation of findings. 'Reflection' articles undertake a more discursive examination of contemporary issues or projects and may be more flexible in format to suit the subject matter.

All published contributions in the 'Research' and 'Reflection' categories are subject to double blind review. Criteria for acceptance are critical insight, originality, theoretical and methodological rigour, and relevance to the aims of the journal.

A third category is entitled 'Reports'. This category is intended for shorter commentaries, reviews and reports on progress. Although not normally fully refereed, contributions in this category are nonetheless subject to editorial review.

The editor is particularly interested in contributions that examine issues and explore the concepts and practices of special relevance to the southern hemisphere, but welcomes contributions from around the globe. Contributions are encouraged from both academics and practitioners.

CONTENTS

ISSN 2253-1440

Published September 2016

Editing and production, Jenny Heine, Wellington.

Proofreading, Tanya Tremewan, Christchurch.

Guest Editorial: Gardens as Laboratories

FIONA HARRISSON

Since 1990, backyards in Australia have been shrinking (Hall, 2010). Residential gardens are disappearing under the footprint of bigger houses, dual occupancies and medium-density apartments. Contemporary urban debates neglect the demise of the backyard, which has been a ubiquitous part of many western cities. Discussion about city development is polarised between 'sprawl', the continual expansion of city limits into productive land, and its counterpart, 'density' housing and infrastructure centrally developed. In the popular culture of reality television make-over programmes and lifestyle magazines, gardens have become hard landscape for 'outdoor living', fashioned overnight according to the latest trend. In each case, the garden is divorced from human acts of cultivation, which does not do justice to the complex role of gardens as spaces of social integration, play, food production, habitat and permeable surfaces to absorb rainfall and provide heat sinks.

While I recognise densification is essential to city development, garden suburbs are nonetheless a significant spatial and social legacy to be carefully considered. Holmgren (2012) suggests the suburban subdivision offers the perfect scale for retrofitting for food production and water and energy collection, should unpredictable climates and economic times limit access to fossil fuels. Each housing block could be reconfigured as part of the larger suburban neighbourhood. In this scenario, the garden offers a flexible space that can be scaled up to operate within a bigger productive urban field.

This special issue explores the legacy of the garden suburb and gardens in their complexity, as they exist now. The word 'laboratory' is used to highlight people's dedicated projects and experiments in their gardens, involving long-term observation, experimentation and testing but without the controls of the scientific laboratory. The privacy of residential gardens allows for different kinds of exploration and experimentation, also at risk in certain density scenarios. Human endeavours in the garden have agency for its occupants and, beyond the garden boundary, in society at large.

Two kinds of papers feature in this issue: research on the role of gardens in society across various scales and in different parts of the world, and shorter essays providing a kaleidoscopic view into ordinary and inspiring 'citizen gardeners' in Melbourne. All show the relationship between society and the garden. They move across scales, from the city to the street and to specific case studies of individual gardens and gardeners.

In their papers, Fox and Scheerlinck and Schoonjans situate the garden in a broader urban context. Fox teases out the historical and political impetus for the

Fiona Harrisson is Senior Lecturer in the Landscape Architecture Program, Faculty of Design and Social Context, RMIT University, Melbourne, Australia. She is also a gardener and design consultant on public projects and private gardens.
Email: fiona.harrisson@rmit.edu.au

garden suburb in post-war Australia. He traces the specific social development of the suburbs, not as an inevitable outcome of history, but to remedy the human ills as a consequence of war. Through an evaluation of streets in diverse socio-economic settings, including Tel Aviv, Bratislava, New York and Melbourne, Scheerlinck and Schoonjans conclude gardens are important structural elements that contribute to their social possibilities. They use the term 'collective space' to identify a quality that can operate across the public and private boundary.

Julian Raxworthy investigates the private garden of Roberto Burle Marx, the Sitio, in Rio de Janeiro, which Burle Marx called his 'landscape laboratory', although Raxworthy offers a different reading. The Sitio was used to test plants Burle Marx had collected from the wild, which were later used in professional landscape projects. Tregenza discusses a garden where the gardeners experimented with sub-tropical plants, cramming 90 types into a meagre 35 square metres. The produce, seeds and ideas were shared through community events and a local community nursery.

Georgia Jacobs discusses a Red Cross programme, 'Putting Down Roots', where gardens were a platform connecting asylum seekers with the local community. By working side by side, participants learnt about each other's culture and ways of life, while Australian mentors discovered the consequences of government policies on the lives of asylum seekers. Harrisson discusses two models of garden for education. One is set in rural Australia where undergraduate students of landscape architecture learnt about design in the microcosm of the garden. The other garden offered lessons about traditional Greek food practices to the community through the Council for Adult Education.

Two gardeners working in different ecosystems use indigenous vegetation with environmental intent but towards different ends. McLean's garden, set in a coastal holiday village, has been regenerated with indigenous vegetation to connect a larger wildlife corridor, whereas Reynolds used hers to test the growing and cultivation of endangered species, having collected the seed from the adjacent volcanic grassland plains. Although in a suburban setting, Reynolds burnt the garden annually, to provide the necessary conditions for regeneration, an important part of the cycle often neglected. These tactics, while similar to those of Burle Marx at the Sitio, were undertaken for the preservation of species rather than for aesthetic reasons.

While working in small lots, these gardeners are operating at a larger scale, as part of the broader community and/or the biosphere. The garden allows citizens to explore things in private that can aggregate to affect society. The rise of the productive garden is a contemporary example. In this sense, a kind of porosity happens between the private space of the garden and the community.

The editor wishes to thank Julian Raxworthy and Clare Coburn for their support in crafting this special issue of *Landscape Review*.

REFERENCES

Hall, T (2012) *The Life and Death of the Australian Backyard*, Melbourne: CSIRO Publishing.

Holmgren, D (2012) *Retrofitting the Suburbs for the Energy Descent Future*, Simplicity Institute Report 12i. Accessed 22 August 2016, http://simplicityinstitute.org/wp-content/uploads/2011/04/RetrofittingTheSuburbsSimplicityInstitute1.pdf.

Foreword

JACKY BOWRING

Gardens and suburbs are often marginalised in the discourse of landscape architecture. The small-scale and domestic connotations of gardens mean they tend to sit outside the academic sphere. The associations of suburbs with the bland and negative aspects of urban sprawl have also constrained the types of research in this area.

This special issue on 'Gardens as Laboratories' highlights both gardens and suburbs as a rich vein of exploration for landscape architecture. The hybridising of garden and laboratories amplifies the experimental nature of this research, demonstrating that it is not merely passive reflection.

Fiona Harrisson's guest editorship has brought together a group of complementary articles, ranging from the scholarly work of Paul Fox, Julian Raxworthy, Kris Scheerlinck and Yves Schoonjans – and Fiona's own research – through to a refreshing and insightful series of reports on gardens as experimental settings. This gives a different rhythm to the issue, one that is full of intriguing observations and ideas for extending this domain of investigation. I am very grateful for Fiona's vision for this issue and her patience while we negotiated the process of bringing it together, including overcoming some unforeseen challenges.

Proposals for special issues of *Landscape Review*, including selections of papers from conferences, are always welcome. Please contact the editor, Jacky Bowring (jacky.bowring@lincoln.ac.nz), for further information.

Jacky Bowring is Professor of Landscape Architecture, School of Landscape Architecture, Faculty of Environment, Society and Design, PO Box 84, Lincoln University, Christchurch 7647, Canterbury, Aotearoa New Zealand.
Telephone: +64–3–423–0466
Email: jacky.bowring@lincoln.ac.nz

Architects and Garden Suburbs: The Politics of Melbourne's Interwar Suburban Landscapes

PAUL FOX

This paper charts how architects, conservative businessmen and conservative politicians helped develop Melbourne's interwar garden suburbs. It maps the ways in which architects transformed these suburban landscapes into highly charged political symbols that supported the values of the conservative Nationalist, United Australia and Liberal parties.

Paul Fox is author of Clearings: Six Colonial Gardeners and their Landscapes *(2004). Carlton, VIC: Melbourne University Publishing.*

KEY WORDS

Architects

Conservatism

Garden suburbs

Melbourne, Australia

In 1942, the leader of the conservative United Australia Party, Robert Menzies, gave a radio talk called 'The Forgotten People'. In his address, Menzies highlighted the importance of 'one little piece of earth with a house and a garden' in the formation of Australians (figure 1). It was the speaker's firm conviction that owning a house and garden equated with the 'best instincts' of the Australian people (Menzies, 1942/1992). Over time, the speech gained a mythical status among members of the Liberal Party that Menzies founded and that he led to victory in 1949 (Brett, 1992).

Today's readers are probably surprised to learn a politician would bother to mention the garden in a landmark speech. In 1942, however, the garden was part of a much larger landscape comprising private suburban houses set in gardens on tree-lined streets with a public park nearby. At the time, Australians called this ensemble a garden suburb. John Dixon Hunt's observation (1992, p 3) that gardens are 'the most eloquent expressions of complex cultural ideas' has particular relevance to understanding Menzies' motivation in referring to the garden in his 1942 address. So too does Anne Birmingham's (1986) framing of the British landscape in terms of ideology and Nigel Everett's (1994) discussion of Tory representations of the English landscape. By contrast, Australian politically charged landscapes are rarely studied in terms of their ideology.

This paper departs from the extant scholarship approach that has produced a meticulously researched and catalogued development of garden suburbs throughout Australia (Freestone, 2010). Instead, it focuses on Melbourne, the capital of the Australian state of Victoria, which until 1927 was the national capital and throughout the twentieth century had a disproportionate influence on Australian non-Labor politics. It charts how architects, conservative businessmen and conservative politicians helped develop the garden suburb. It also maps the ways in which interwar architects transformed Melbourne's garden suburbs into highly charged political symbols.

Architects were well placed to develop a conservative ideology about Melbourne's post-war garden suburbs. As middle-class professional men, who were generally educated at private grammar schools and whose wives came from well-connected families, they were acculturated in the non-Labor mores and

REFLECTION

Figure 1: 'One little piece of earth with a house and a garden', Camberwell, Melbourne 1938. (Photo: Art in Australia, 15 November 1938, p 76.)

representations of the city. Their religious backgrounds also attuned them to the blend of capitalism, state socialism and non-conformist values that distinguished Victorian non-Labor politics from the politics in other states (Blainey, 2013). Having been to war, they were also aware of the threats to peace and were well positioned to take advantage of the changes in relationships between the Australian state and capital that had occurred during the war. Moreover, the ability of architects to think in images, before popular movies were widely seen by Australians, equipped the profession to take advantage of the new media, especially the photographic magazine, to reach new suburban audiences.

Interwar architects synthesised these elements into a coherent metaphysical and political vision of what Melbourne's garden suburbs stood for. Accordingly, they achieved a rare thing in a society as pragmatic as Australia's: they endowed Melbourne's suburbs with symbolic meanings that supported the values of the conservative Nationalist, United Australia and Liberal parties, and believed these values were shared by the whole of society.

Realising that their vision of architecture was political, they also became politicians and community leaders. As well as giving the profession a say in Melbourne and the nation, these roles allowed them to create an ideology centred on the suburban home and garden. Understanding that modern politics was about images and symbols, architects represented their profession as being concerned with democracy rather than having an elitist outlook. This perspective led architects to work with governments to develop new forms of housing in the 1920s, and during the 1930s to find solutions regarding flats and the housing crisis caused by the Great Depression. Being politically adept, Melbourne's architects re-invented the garden suburb to suit the times, and they were responsible for the spread of these suburbs, and their values, across Melbourne regardless of which political party was in power.

Sons of the manse spread the word about architecture

One of the particular characteristics of Victorian non-Labor politics was a rapprochement between capital and Labour and the tempering of capitalism

by progressive, Protestant, non-conformist values. Indeed, during the 1890s, Congregationalists and Methodists had been influential in the new Australian Labor Party. The increasing influence of Irish Catholics in the Labor Party, however, saw these Protestants turn to the non-Labor side of politics. These divisions widened with the conscription referenda that inflamed sectarian divisions during the First World War (Davison, 1983).

Many of Melbourne's interwar architects came from non-conformist religious backgrounds. Among them were Marcus Barlow (1890–1954), Robert Hamilton (1892–1948), Henry Kingsley Henderson (1883–1942), Best Overend (1909–1977) and Arthur Stephenson (1890–1967). Hamilton was the son of a Presbyterian clergyman, Overend was the offspring of a Methodist minister and Stephenson's father was a Congregational lay preacher. Henderson's grandfather had been the first incumbent of the influential Congregational church in Melbourne's fashionable Collins Street. The father of architect and housing reformer Marcus Barlow was a parishioner of the Kew Congregational church for many years, and well known for being 'very interested in church work'. These sons of the manse were consequently well placed to reconcile the non-conformist ideal of being a force for good with modern capitalism and believed Melbourne had a special role to play in the new Australian nation (*Age*, 22 April 1936, p 10; *Argus*, 22 November 1927, p 13; 7 April 1942, p 2; Fisher, 1990; Goad, 1995).

Having been raised within earshot of Sunday sermons, these architects understood the importance of the written and spoken word in reforming and improving society. Consequently, they all wrote and spoke with fervour about the moral duty of the profession to improve Australians' living conditions. Kingsley Henderson, after becoming vice-chair of the conservative Melbourne newspaper *Argus* in 1934, saw to it Overend was employed to write a regular column about architecture for the paper. Melbourne's architects also took advantage of new newspapers and magazines that were the brainchild of Keith Murdoch, who in time would become the country's pre-eminent press baron. Murdoch's publications appealed to both male readers, for whom the suburbs were a retreat from 'the cares of business', and female readers, who saw architects as understanding their concerns about living in congenial, healthy, modern homes and the need for beauty in garden suburbs. Murdoch, like Hamilton, was the son of a Presbyterian minister (Younger, 2003; Zwar, 1980).

The soldier–architect in war and peace

The First World War was another important influence. Both Robert Hamilton and Arthur Stephenson served in the Australian Army. Other Melbourne architects who went to war included Arthur Blackett (1873–1962), John Gawler (1885–1978), Leighton Irwin (1892–1962), George Burridge Leith, Marcus Martin (1893–1981) and Percy Oakley (1884–1955) (Australian War Memorial, 1918; Butler, 1983; Lewis, 1996; Rayworth, 1986; Tibbits, 1979).

While architects were fighting overseas, relations between the state and capital underwent a revolution at home. The Australian government extended its activities into areas that had previously been the preserve of private enterprise. To win the war, the government also sought the advice of Melbourne's leading businessmen. In 1916, for instance, the leading financier and industrialist in

Melbourne, and Australia more generally, WL Baillieu (1859–1936), became a member of the Commonwealth Financial Council. On the advice of this captain of industry, the government authorised the Australian Wheat Board to compulsorily acquire and resell the nation's wheat crop. This would have been inconceivable in conservative circles before the war.

Sir William McBeath (1865–1931) was another businessman whose talents the government drew on. His financial expertise as chair of the government-owned State Bank of Victoria recommended him to the position of chair of the Australian Imperial Force's Disposal Board in London after the war. This advice and expertise from the country's leading businessmen and financiers further strengthened the accommodation between government and capital that had been a hallmark of Victorian politics before the war. It also gave McBeath first-hand knowledge of the challenges Australia faced in dealing with the social and economic dislocation arising from the war.

In London, McBeath met the soldier–architect Arthur Stephenson. To entice Stephenson to return to Australia, he promised to find him work. Proving McBeath true to his word, Stephenson's firm designed 14 state banks in Melbourne's suburbs between 1921 and 1929 (Goad et al, 2004). The war also gave McBeath an appreciation of how his bank's patronage of architects could bring order and stability to a world under threat from the anti-capitalist sentiments that the 1917 Russian revolution had unleashed.

Stephenson was just as profoundly influenced by the war. On the Western Front he had learnt how the morale among the men under his command was related to the supply of clothing, food, housing and munitions. After the war, he applied these wartime lessons to Australian society. He believed the responsibility of the architect in peacetime was to design 'social amenities', including housing, to maintain 'a healthy (and peaceful) social state' (Stephenson, 1921, p 29) (Fisher 1990; Goad et al, 2004; Vines, 1986).

On returning to Australia, Stephenson and partner PH Meldrum entered a design competition for a war memorial in the Melbourne suburb of Kew. Although this was a perfectly natural thing to do for a new architectural practice looking for work, Stephenson had another compelling reason to enter the competition. As an officer, he had written to the parents of the men who had died in action under his command. Designing the Kew war memorial allowed him to give physical expression to the emotions he and the recipients of his letters felt on learning the news that his men, and their sons, had died on battlefields far from home. Now he could set these dead men's names in stone (Heritage Council of Victoria, 2004).

In the aftermath of sectarian divisions arising from the conscription debates, the suburban municipality gave the architect the task of creating landscapes that the whole community could recognise as sacred places. For example, the Kew war memorial, designed by the former mayor, member of the local recruitment committee and architect Harry Tompkins, was built not on church land but on a site transferred to the municipality by the government (*Camberwell & Hawthorn Advertiser*, 27 January 1917, 30 August 1918; Heritage Council of Victoria, 2004).

Politics also influenced Melbourne's suburban war memorials. This is apparent in the war memorial built in working-class Northcote. Unlike the Kew memorial, its location – beside the Soldiers and Sailors Memorial Hall designed by architect

Harry Norris (Ward, 2001) – was a highly political gesture. Many of the diggers living in this suburb were radicalised by their time in the trenches, placing them at odds with members of the Returned Soldiers and Sailors Imperial League (RSSIL), an organisation established to contain the radicalism of returning soldiers. As the RSSIL met in the Soldiers and Sailors Memorial Hall, the hall was a means of defending the post-war order against the radical digger (Cathcart, 1988).

Historians have given considerable attention to the psychological effects of trench warfare in the creation of modern European memory. They have also charted the way modern artists represented soldiers, whose amputated limbs were replaced by prosthetics and crutches, as part human and part machine (Fussell, 1975). Despite this focus, little attention has been given to how Australians' wartime experiences in the trenches influenced peacetime architectural practices of the likes of Stephenson. How the class and public school backgrounds of Melbourne's soldier–architects – Stephenson and Oakley, for instance, had been educated at Melbourne and Brighton Grammars respectively – made them less likely to be radicalised by the war. How they took advantage of their pre-war Protestant upbringing to represent themselves to Melbourne businessmen and Nationalist politicians as dependable, professional men who could be relied on to defend society from Bolshevism. How Melbourne's architects in peacetime built on the wartime cooperation between the Australian government and capital. And the ways in which their religious backgrounds made them both receptive to leading post-war politics toward a New (non-conformist) Jerusalem, and how this accorded with Nationalist Party narratives designed to blunt radical modernity in post-war Australian society.

Architects' and government's instrumentalities after the war

If war memorials, in working-class Northcote and middle-class Kew, illustrate the ways architects throughout Melbourne's suburbs made sacred landscapes into community symbols, the profession was equally adept at endowing domestic architecture with symbolic meanings. The 1919 State Savings Bank Act and the 1920 Housing and Reclamation Act provided workers and ex-soldiers who earned less than £400 a year a chance to buy a home in the suburbs. In 1921 the bank employed the soldier–architect George Burridge Leith to design the houses.

The State Savings Bank's decision to employ an architect allowed a new class of Australians to afford architecturally designed houses in Melbourne's post-war suburbs. Leith's appointment accorded with the views of the chair of the bank, William McBeath, about the importance of architects in post-war Australian society. As a member of the Nationalist Party, he believed owning a house in the suburbs 'made people take an interest in the Government and finance of the country' (*Argus*, 10 March 1927, p 15). It has been estimated that one in seven of the houses built in Melbourne during the 1920s was a State Bank house designed by Leith (Murray and White, 1992; Priestley, 1984) (figure 2).

McBeath's vision, however, went well beyond building houses in the suburbs. Having served from 1890 to 1917 on the Camberwell Council in Melbourne's middle-class eastern suburbs, he brought that extensive experience to his State Bank chairmanship. As a municipal councillor, he had been instrumental in making Camberwell into Melbourne's quintessential garden suburb. In this

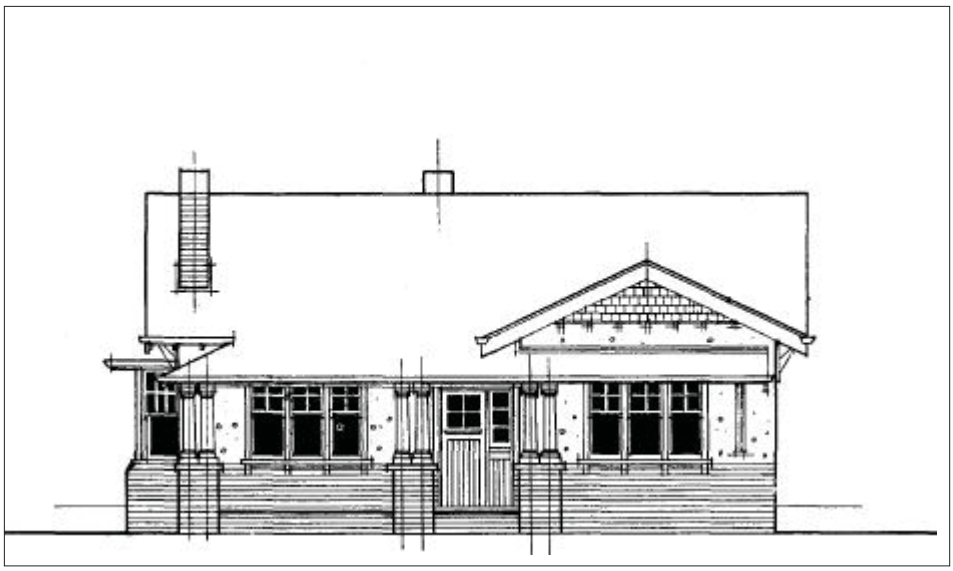

Figure 2: State Bank house design 1929. (Image: State Savings Bank of Victoria, Design book: Brick dwellings, containing 28 standard types, *McCarron, Reid and Company, Melbourne, 1929, p 12.)*

middle-class enclave, Protestants raised families in detached houses, tended their gardens, played in an abundance of public parks, walked and drove down tree-lined streets to church, and voted for the Nationalist Party.

McBeath applied what he had learnt in Camberwell to the whole of Melbourne. Through his involvement, an essential component of the garden suburb movement – well-designed houses – was available in working-class suburbs on the other side of the Yarra River. While the bank could not insist on local councils establishing parks and planting trees in streets, McBeath held firm to his, and his political party's, vision of the ideal garden suburb. In 1927 the bank took a further step in realising its chair's vision. Inspired by British and local garden suburbs, it laid out a new garden suburb, adjacent to the working-class suburb of Port Melbourne. In this way, as chair of the State Bank from 1918 to 1931, McBeath was able to achieve even more than in his 27 years as a Camberwell councillor (*Argus*, 10 March 1931, p 15; Blainey, 1964; Harris, 1988; Murray and White, 1992; Vines, 1986; Younger, 2003).

The Victorian government's involvement in the private housing market was only one of its initiatives arising from the war that had consequences for the suburban landscape. The State Electricity Commission of Victoria (SEC) was another. Established in 1918, it developed the brown coal fields of Victoria's La Trobe Valley to supply cheap electricity to Victorian households and industries and modernise the economy. Such an ambitious project demanded considerable expertise. After William McBeath sounded him out, General Sir John Monash agreed to be general manager of the SEC, bringing with him the skills he had acquired as the wartime commander of the Australian Army on the Western Front. Monash's appointment demonstrates not only McBeath's considerable personal influence but also how the war changed the perceptions of non-Labor politicians, businessmen and soldier–architects about the government's role in modernising the economy. Part of this modernisation involved employing architects. In 1920, a year before the State Bank hired its architect, the SEC engaged the architect Alan La Gerche. In 1921 La Gerche, with Arthur Stephenson, prepared a plan on garden city lines for the new SEC town of Yallourn (Edwards, 1969; Fletcher, 2002; SEC, 1921; Serle, 1982).

While architects, like La Gerche and Leith, provided the technocratic and organisational skills post-war Australian governments required, they also defended middle-class interests. One of these interests was the right of the middle class to make choices about how they wanted to live at a time when government powers were increasing in daily life. Consequently the State Bank, under its Nationalist Party chair, offered customers a range of house designs and protected the small builders who built its houses. The houses did have standard designs that could have been mass produced and assembled on site. It was inconceivable, however, for a Nationalist bank chair, who feared the spread of Bolshevism, to tell home owners how to live, or to destroy the livelihoods of small builders despite the enormous strides being made in mass production in the United States of America (Smith, 1993).

Crafting an image of the architect

The State Bank's houses and the plan for Yallourn allowed architects to become involved in the lives of people who could never have afforded an architect on their own. The houses represent the increasing democratisation of the profession during the interwar period. This change in architectural culture also saw architects establish service organisations where middle-class men could meet each other and serve the community. The first of these was the United States organisation Rotary, which was brought to Australia in 1921 by Melbourne architect Walter Drummond, a partner of the soldier–architect John Gawler. Architects who joined Rotary included Thomas Buchan, principal of the Geelong firm of Laird & Buchan, and soldier–architect and Brighton councillor Percy Oakley, who in 1935 became president of the Melbourne branch of Rotary (*Argus*, 13 September 1930, p 20; Freeman, 1996).

Rotary, however, allowed only one member of any given profession in each of its branches. In response, 22-year-old John Buchan (1909–1998), who like his Rotarian father was an architect, founded Apex in 1931 to foster 'the civic, commercial, social and moral welfare of the community'. In allowing multiple members of a profession to join a local branch, Apex was a much broader-based community organisation than Rotary. Both organisations provided a way for middle-class suburban men to fraternise with each other just as members of trade unions did. They also re-affirmed the fundamental belief that capitalism and voluntary organisations were the bedrock of Australian middle-class society. Yet it was Apex's Australian egalitarianism that helped bind Australians together during the Great Depression (Page, 1990).

In the 10 years between the founding of Rotary and Apex in Australia, architects tailored their image to a much wider audience than just the elite of Australian society who, in the Edwardian summer before 1914, had been among their most important clients. After the war, Melbourne's architects transmitted the values of this elite to a mass audience. In this task, they were helped by the advent after the war of newspapers such as Keith Murdoch's *Herald* and magazines such as *Australian Home Beautiful*, whose cover and photographic spreads of homes by Melbourne architects appealed to women readers.

In 1923 the *Herald* sponsored the *Herald* Ideal Homes competition and exhibition to increase its circulation among suburban readers. The *Weekly Times*,

one of the flagship newspapers in Murdoch's stable, reviewed the exhibition. It declared 'the ideal home is not a monopoly of the rich', and went on to describe how 'it is within the power of nearly all men, no matter what their calling, to own their own home'. Furthermore, 'the disposition of all classes to buy a block of land and build a house' and 'the increasing number of depositors in the Savings Banks' had changed the national character: 'Australians had evolved beyond the restless and somewhat spendthrift blood of their pioneering fathers, and had settled down to the steady job'. The architect not only offered homes that enshrined 'beauty, hygiene and labour-saving devices and contrivances' but just as importantly could 'teach home owners what they can hope to do with the capital they command' (*Weekly Times*, 31 March 1923, p 34).

Like other members of Melbourne's establishment, Murdoch appreciated the role architects could play in his business and private life. In 1923 he engaged Harry Tompkins (who had designed the Kew war memorial) to design the *Herald*'s new head office in Melbourne's central business district. Later Murdoch held an architectural competition to find a suitable design for Newspaper House in Melbourne's Collins Street. And he employed architect Desbrowe Annear to design his country retreat on the Mornington Peninsula. Significantly, too, he was prepared to use his newspapers and magazines to promote the architect and domestic architecture to the new home-owning middle class created by the modern savings bank. All of these moves accorded with the cultural disposition and values of members of the Nationalist Party (*Herald*, 16 March 1923, p 1, 17 March 1923, p 1; Younger, 2003; Zwar, 1980).

Anxious to promote its profession's role in post-war Australian society, the Royal Victorian Institute of Architects (RVIA) organised an Exhibition of Domestic Architecture in 1928. In metaphorical terms, the exhibition offered different classes of people the opportunity to meet each other in their houses and gardens. It also allowed them to see how the other half lived. Moreover, in showing how much people had in common with one other, the exhibition provided a narrative of social harmony in the suburbs rather than the story of class conflict constructed by those on the political left. The exhibition's motto makes this point abundantly clear: 'it is better to build homes for the humble than to build palaces for kings'. It was a sign of just how much architects wished to promote themselves to the everyman and woman of Australia's interwar suburbs (RVIA, 1928).

The RVIA's exhibition included a design competition. Following the example of the 1923 *Herald* competition, different budgets were allocated to different house designs. A basic price of £1,000 was assigned to a modest timber home, with an additional £500 buying a brick dwelling. Up to £25,000 could be spent on a grand home. The cost of the land was included in the budget. With an eye to promoting the next generation of architects, the competition was open to members of the Victorian Architectural Students' Society as well as Institute members.

The 23-year-old Roy Grounds (1905–1981) and Geoffrey Mewton were awarded first prize for their timber house. The practice of Walter Butler and Marcus Martin was successful in the other two categories. In making their decisions, the judges were mindful of the contribution the garden made. They praised the 'beautiful setting' of Grounds and Mewton's winning design, judged the garden of Butler and Martin's £1,500 brick house as 'charming' (*Argus*, 1 May

1928, pp 8–9), and commended the winning entry in the final category for the way in which the house and garden sat within its environment. The inclusion in the competition of a timber home costing £1,000 also showed architects were not just interested in housing the well-to-do who could afford Butler and Marcus Martin's prize-winning designs. The prize awarded to Roy Grounds also announced to the public the next generation of architects were just as committed as the older generation to providing well-designed houses to people of modest means (Blackett and Inskip, 1928; Rayworth, 1986; RVIA, 1928).

Images of the three prize-winning awards were reproduced in the RVIA's journal (*Journal of the Royal Victorian Institute of Architects, JRVIA*), popular illustrated magazines, and newspapers. This publicity brought the exhibition to a far greater audience than the 7,000-odd people who attended it. Realising that capital both owned the means of production and had the wherewithal to endlessly reproduce cultural, political and moral views throughout the nation's suburbs, architects were keen to popularise in the media the view that 'the ideal home is not a monopoly of the rich'. With the advent of both photographic magazines and radio, they were acutely aware domestic architecture was not just about bricks and mortar but also about images, symbols, identity and civic endeavour.

In 1928 the young Roy Grounds also won the RVIA's annual war memorial scholarship. Recognising that modern architecture and Hollywood were both about creating images for the masses, Grounds travelled to the United States where he designed studio sets for Radio-Keith-Orpheum Pictures and Metro-Goldwyn-Mayer (Hamann, 2007). Melbourne's newspapers also continued to promote architecture. In 1934 the conservative Melbourne *Argus* commissioned the 25-year-old modernist architect, Best Overend, to write about architecture (Goad, 1995). With access to the media, Melbourne's architects were extraordinarily well placed to garner support for the idea that Australian identity was intimately linked to owning a home in a garden suburb, and to turn this idea into a potent conservative political force at local, state and national levels.

Architects and non-Labor politics

During the interwar period, architects were extremely active at all levels of Australian politics. They were on the local councils in many middle-class suburbs. They were active on the Melbourne Metropolitan Town Planning Commission. They created a new vision of the national capital Canberra, enshrining the interwar conservative belief that the national character was to be found in Australia's suburbs. They were also active members of conservative political parties, rallying middle-class Australians they knew – through their participation in local councils, the service organisations they founded and the businesses on whose boards they sat – to defend (their) Australia from economic solutions the Labor Party proposed during the Great Depression. In brief, their political re-imagining of Melbourne's suburbs created middle-class visions of the nation.

Architects were well represented on Melbourne's municipal councils. Kingsley Henderson served on Malvern City Council from 1917 to 1922 and Percy Oakley on Brighton Council from 1919 into the 1930s. Frank Stapley was a Melbourne City Council alderman from 1921 to 1939, Harry Tompkins a member of Kew Council until 1923 and John Gawler on the Box Hill Council from 1927 to 1951.

Robert Hamilton and Robert Henry Solly were councillors on Prahran and Melbourne City Councils respectively during the 1930s. Further afield, Thomas Buchan served from 1934 to 1951 on the Newtown and Chilwell Council, a well-heeled, residential area adjoining the port city of Geelong in rural Victoria.

This involvement in local government was extremely important at a time when the profession was nurturing the ideal that Australians of all classes should live in a home designed by an architect. In a society where 'the disposition of all classes to buy a block of land and build a house' had led to piecemeal suburban developments rather than the planned garden suburbs of the United States and England, architects on middle-class councils could create visually coherent suburbs by making and using municipal bylaws, planting street trees and developing public parks. By extolling the virtues of civic architecture, they helped create garden suburbs that, although different to the much-lauded overseas examples, brought a sense of community and a shared vision to the individualistic suburbs. The presence of architects on democratically elected municipal councils also reinforced in the public's mind that the profession actually believed what they said about the democratisation of architecture. As a result, when the architect spoke, people listened (*Argus,* 14 September 1925, p 14, 24 June 1938, p 6; Balderstone, 1983; Dunstan 1990; *JRVIA*, September 1934; Lewis, 1996).

Architects on suburban councils were also aware of the need to develop a master plan for the entire city. As a consequence, the Victorian government established the Melbourne Metropolitan Town Planning Commission in 1922. The profession played an important role in the commission, chaired by alderman Frank Stapley (1858–1944), a former president of the RVIA. Well acquainted with Melbourne's problems, the commission's 1929 master plan advocated zoning, transport planning and more open space as ways of enhancing the city. However, because of the 1929 Wall Street crash, Great Depression, and a Country Party government that lacked interest in Melbourne, the commission's recommendations were not implemented (Dunstan, 1990).

Creating the new Australian capital, Canberra, was another undertaking in which Melbourne architects were influential. In the same year as the Melbourne Metropolitan Town Planning Commission was established, the Nationalist Party government, under Prime Minister Stanley Melbourne Bruce, announced an architectural competition to design Canberra's suburbs along 'modern, aesthetic and economic lines'. Soldier–architect and councillor Percy Oakley and his partner Stanley Oakes won the competition. This socially and politically conservative architectural duo set about re-casting American architect Walter Burley Griffin's pre-war plan for Canberra in the image of Melbourne's suburban architecture. Their penultimate success came in 1925 when they were commissioned to design the Prime Minister's official residence in the national capital.

While Oakley's work in Canberra provided a new narrative about the nation whose values were in accord with the Nationalist Party, Griffin largely continued to privilege the pre-war Australian pursuit of leisure in his subdivisions. Unlike a soldier–architect, the theosophically inclined Griffin was not interested in thinking about garden suburbs as a means by which the state and capital might pacify the working class after the war. Oakley's vision of domestic architecture became the bedrock on which the Nationalist Party could build the national

character and succeed electorally in Australia's post-war suburbs. For this reason, Bruce urged 'the architect and the people … to get closer together' (*Age*, 7 June 1927, pp 16–17; Freeman, 1996, pp 109–118; Nichols, 2002, pp 214–15; Plant, 1987, pp 111–13).

The defeat of Bruce's government in 1929, and the subsequent onset of the Great Depression, however, challenged the conservative values enshrined in its images of the 1920s garden suburb. Architects responded by becoming involved in national politics. For instance, during the general election of 1931 Apex founder John Buchan rallied support for the United Australia Party candidate Richard Casey, who became a close friend. Casey went on to hold influential posts in the Lyons and Menzies governments.

Kingsley Henderson was even more influential in conservative politics. A former councillor, an architect who won commissions to design head offices, clubs and apartments in Collins Street, and a member of numerous company boards, Henderson exemplifies the connections between architecture and the big end of town. In 1931 Henderson rallied conservative citizens from Melbourne's garden suburbs to join the All for Australia League, a citizens' organisation that opposed Labor's unorthodox fiscal policies in the Depression. Intent on destroying Labor politically, Henderson, together with Robert Menzies and four influential Melbourne businessmen, persuaded Joseph Lyons to leave the Labor government and lead the new United Australia Party to victory at the 1931 general election. Henderson's influence continued to grow. He became vice president in 1934, and president in 1940, of the *Argus* and *Australasian* board, newspapers that were the voice of conservative Melbourne (*Argus*, 7 April 1942, p 2; Balderstone, 1983; Henderson, 2011).

Some architects joined Menzies' new Liberal Party. They included Bernard Evans (1905–1981) and Robert Henry Solly (1883–1968), who were members of Melbourne City Council in the 1950s. Robert Hamilton was a Liberal Party member of the Victorian parliament until his death in 1948. John Buchan became president of the Victorian branch of the Liberal Party, helping to create a close and harmonious relationship between Melbourne City Council and the Victorian Liberal government after it came to power in 1955. Buchan gained a reputation as 'a manipulator of the nuts and bolts of the Liberal Party and a man of substantial influence' (Page, 1990, p 108). His political contacts helped Buchan transform his father's Geelong architectural practice into a national enterprise (*Argus*, May 1948 p 5, 31 August 1953, p 1; Dunstan, 2007; *Hobart Mercury*, 1 September 1953, p 10; *JRVIA*, March 1930, p 3; Page, 1990).

Re-inventing overseas traditions

Among Victoria's garden suburbs, only a handful follow their English counterparts. The Fisherman's Bend estate developed by the government-owned State Bank is one example. Another is the SEC township of Yallourn, designed by La Gerche, who admired Welwyn Garden City laid out in 1920, and Stephenson, whose models were Bournville and Port Sunlight built by enlightened Quaker industrialists to house their workers (Stephenson, 1921). In general, however, Melbourne's garden suburbs were not simulacra of those in England. Very few Australian businessmen had the means, or imagination, to build Bournville and Port Sunlight in the antipodes.

Australia's leading industrialist and financier WL Baillieu was an exception. His formidable business acumen led to the development of many new Australian industries, including the Electrolytic Zinc Company. In 1920 Baillieu courageously used his family's fortune to underwrite the £1 million float needed to build an electrolytic zinc smelter in Tasmania. Like William McBeath, Baillieu had encouraged the architect Arthur Stephenson to return to Australia after the war. And like McBeath, Baillieu became Stephenson's patron, engaging him and Arts and Crafts architect Walter Butler to design the Electrolytic Zinc Company's garden town of Lutana in Tasmania. Yet, despite the best of intentions, only 42 houses out of the proposed 200 were ever built (Fletcher, 2002; Freestone, 1989, 2010; Goad et al, 2004; Yule, 2012).

In the Victorian parliament (1901–1917), Baillieu supported the introduction of old-age pensions and championed legislation to secure industrial harmony. After the Armistice, he put together 'a democratic programme to secure better conditions for working men', hoping it might influence a new international order (Poynter, 1979, p 143). If even Baillieu could not build Lutana, there was little hope that other enlightened Australian industrialists would replicate the British garden cities developed by enlightened 'captains of industry' (Stephenson, 1921). For example, the American Ford Motor Company built an assembly line in Geelong but left it to the larger-than-life entrepreneur Clement John de Garis (1884–1926) to engage Arthur Stephenson, Leighton Irwin (1892–1962) and IG Anderson in 1924 to design a new garden suburb as a speculative venture (Freestone, 2010; Nichols, 2002).

It was such experiences that led architects to realise the piecemeal development of Australian suburbia, where subdivisions maximised the owner's profit, would continue. Consequently, Melbourne's architects created distinctively Australian solutions that translated overseas models to suit local conditions, re-invented local traditions and endowed images of suburban homes with symbolic and political meanings.

Re-inventing local traditions: Flats in Toorak

The Great Depression threatened to undo the representation of the garden suburb as a place of social harmony, which architects and conservative businessmen and politicians had cultivated so assiduously during the 1920s. As discussed above, the middle-class suburbs were bulwarks against the social and political unrest of the Depression. Yet the anxiety over their future remained even after the United Australia Party won the 1931 general election. So in 1933, at the height of the Depression, the founder of the Toorak branch of the Nationalist Party, and First World War veteran, Sir James Barrett (1862–1945) led a campaign to stop flats being built in Toorak, the suburb where Melbourne's social and business elite resided.

During the campaign Barrett observed that the 'larger gardens of Toorak are rapidly disappearing' and predicted the 'smaller gardens will follow suit'. Indeed, along with the RVIA president, he foresaw the day when the suburb would be filled with 'barracks rather than gardens' (*Argus*, 25 January 1933, p 8). As the chair of the Town Planning Association of Victoria, Barrett was just as concerned to stop barrack-style flats being built in Melbourne's other suburbs, and determined to

defend the values associated with owning a home in Melbourne's garden suburbs (Murray-Smith, 1979).

This antipathy towards flats was widespread. In 1928 the Victorian Chief Secretary and former Labor Premier George Prendergast, in a speech at the opening of the RVIA Domestic Architecture Exhibition, observed 'individual homes were far better than tenements where there was less individuality in family life and where the dwellings were so much alike' (*Argus*, 2 May 1928, p 21; RVIA, 1928).

Although Robert Hamilton, who had helped organise the RVIA exhibition with Marcus Martin, heard Prendergast's speech, he held a different view. As a local councillor and an architect, he opposed Barrett's campaign, believing instead that building double-storey flats that looked like neighbouring houses could be a way to accommodate Melbourne's growing population. So while Barrett huffed and puffed about the arrival of flats in his neighbourhood, Hamilton, using his position on the local council, developed a new building code that ensured 'only first class buildings of sound design' would be built in the suburb. These regulations limited each block of flats to four or five dwellings of no more than two storeys, demanded each flat have a separate entrance and paid attention to their garden settings (Hamilton, 1938).

By October 1933 Hamilton could point to his design of Moore Abbey in neighbouring South Yarra to prove well-designed flats need not undermine the existing neighbourhood. According to contemporary press reports, Moore Abbey looked like a Tudor village set around 'a village green'. In marrying the best of Toorak with Tudor England, Hamilton had created a community in the finest of British traditions. In designing flats where none of the floor plans were the same and placing them around a village green, this architect – who made a living subdividing the grounds of Melbourne nineteenth-century mansions – distanced himself and his clients from the social experiments of modern British and European architects who saw houses as machines for living, and modern site design as privileging the public over the private garden (*Argus*, 19 October 1933, p 11, 14 December 1933, p 5).

After the construction of Moore Abbey, it was far more difficult for the founder of the Toorak branch of the Nationalist Party to take the moral high ground about flats threatening Melbourne's premier garden suburb or Melbourne's suburbs in general, or to argue that flats would turn garden suburbs into slums. Having found a solution to the flat question, Melbourne's local councils adopted similar building codes. In 1938 Malvern City Council approved Hamilton's design for Denby Dale, a group of Tudor-style flats set in gardens in Glenferrie Road, Kooyong (O'Hanlon, 2002) (figure 3).

After serving in the war, Hamilton became assistant government architect in Bombay, India, where he observed how the British used Englishness for their imperial ends. On returning to Melbourne, Hamilton was inspired by *Houses and Gardens*, penned by influential British Arts and Crafts architect HM Baillie Scott, to build dreams of England that would reassure Melbourne's conservative elite that, despite the upheavals of the Great Depression, they were still in charge of the city's destiny. Hamilton's involvement in local politics provided him with the wherewithal to rework overseas models to suit Australian conditions and to

Figure 3: Robert Hamilton, Denby Dale flats, Kooyong, 1938. (Photo: Helen Widdowson.)

safeguard the representation of the garden suburb as a place of social harmony (*Argus*, 14 September 1925, p 1; Corbett et al, 2002; Ferguson, 2003; Herbert, 1934.

Arts and Crafts ideas were highly influential in Melbourne during the interwar period (Martin, 1929; Edquist, 2008). Consider Best Overend's choice of topic for his first column in the *Argus* in 1934: a Toorak house and garden designed by Walter Butler. For Overend, Butler's Arts and Crafts design exemplified how a modern house needed to take account of 'the possibilities inherent in the land and garden' (*Argus*, 28 June 1934, p 13). As architectural historian Philip Goad sees it, in this article Overend was playing it safe before revealing his modernist hand to the readers of Melbourne's conservative daily. This interpretation, however, disregards the way the young architect abstracts Butler's Arts and Crafts design to make his point about modern site design (Goad, 1995).

These insights influenced Overend's 1936 design for Cairo, a block of modern, two-storey bachelor flats in working-class Fitzroy (figure 4). In this inner suburb, Overend paid particular attention to providing each apartment with views of the surrounding garden. For Goad (1995), Cairo expresses modernist ideas about setting high-rise blocks of flats in public parks. Given that Cairo replaced a large Victorian mansion, it can also be seen as addressing Barrett's concerns that such replacements would result in barrack-like apartments with no gardens. Indeed, sheltered behind the high brick wall retained from the mansion, Cairo's landscape could be mistaken for a large garden in Toorak. Overend abstracts ideas about the Arts and Crafts house and garden to focus on site design. As well as broadly conforming to Hamilton's new flat code, in a nod to public morality the design allowed every resident to keep an eye on who was visiting the bachelors' apartments. In line with Overend's first article for the *Argus*, Cairo suggests the Arts and Crafts tradition need not be – as Hamilton believed – in opposition to modernism.

Hamilton's flat code was enormously influential in addressing the antipathy toward flats that crossed Melbourne's class and political divides. In making a flat look like a home, Hamilton re-invented a type of architecture disdained by the

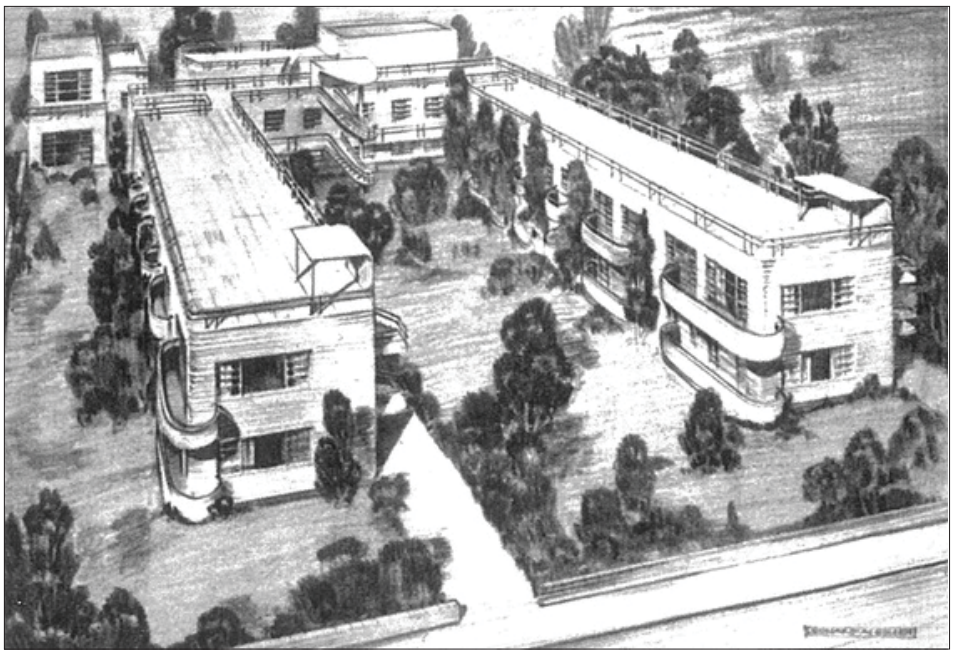

Figure 4: Best Overend, Cairo, 1936. (Image: RVIA, July 1936, p 95.)

likes of Barrett and Prendergast. His genius lay in getting suburban communities to accept well-designed flats could be a home as much as any suburban house and could enhance, rather than destroy, existing garden suburbs. In this way he safeguarded the conservative values enshrined in the suburban home that his party and profession had done so much to instil.

Re-imagining workers' housing

While Toorak residents campaigned against barrack-like flats being built in the neighbourhood, 33 percent of Australian workers were unemployed. If architects had been successful in the 1920s in imbuing domestic architecture with symbolic meanings that both major political parties came to share, in the 1930s they set about finding solutions to the housing problems caused by the Depression. Whereas in the 1920s they and the State Bank had been able to house people who earned less than £400 a year, in the 1930s the unemployed and their families either had no homes at all or were living in substandard accommodation in Melbourne's inner suburbs. Many architects were horrified by these conditions. Alan Devereux, for example, on returning to Melbourne in 1934 after a long absence in London where he had been architect-in-charge of the Battersea Borough Council's housing department, saw the inner suburbs as 'blots on the face of civilisation'. To remedy the situation, he called for Melbourne's workers to be 'housed in settlements of the garden type' well away from industry (*Argus*, 14 December 1934, p 5, 27 July 1935, p 21).

In the 1930s, overseas examples were again consulted in the hope they might provide solutions to Melbourne's housing problems. In 1932 Marcus Martin attended the International Town Planning and Housing Congress hosted by modernist architect Mies van der Rohe in Berlin. At the same time, he visited 'huge housing blocks ... of extraordinary variation' 'carried out ... on proper town-planning lines' (Martin, 1932, p 173). Arthur Stephenson shared Martin's interest in workers' housing, touring Germany and Sweden and visiting Russian workers' housing in 1933. As to be expected, the confiscation of 'great and

beautiful mansions' from their 'lawful owners' by the Communist government did not go down well with Sir William McBeath's protégé (*Argus*, 29 April 1933, p 4; Stephenson, 1933, p 75). Best Overend was equally concerned about the housing problem. After working in the British modernist architect Wells Coates' London practice, he returned to Melbourne in 1934 where he described the tall blocks of apartments in gardens and parklands seen on his travels (*Argus*, 20 December 1934, p 14).

All of this was a world away from Martin and Butler's designs for Sir William McBeath's new Toorak house (RVIA, 1928). Yet Martin had a social conscience. As he explained to *JRVIA* readers, he had travelled to Berlin believing the profession's 'first consideration' needed to be 'the welfare of mankind' (Martin, 1932, p 173). With similar views, Stephenson (1933) believed 'an Architect should be a guiding force' in solving the social problems of the Depression. As part of this interest in improving people's lives, Martin supported the free kindergarten movement while Stephenson became the leading designer of the modern hospitals in the country.

However, after their success in creating the 1920s garden suburbs, architects and social reformers from the suburbs were not about to agree to the construction of European-style flats for workers. To do so would have diminished the very values they now regarded as the bedrock of Australian suburban society. These perceptions are apparent in the influential social reformer and devout Methodist, Oswald Barnett (1883–1972). During the 1930s, Barnett campaigned relentlessly to redress inadequate housing conditions in Melbourne's inner suburbs that had been built in the nineteenth century. He was deeply troubled that the unemployed and the working class were not able to enjoy the same standard of living as those in Melbourne's 'better class [of] suburb' such as Camberwell where he lived (*JRVIA*, July 1933, p 48).

Barnett enlisted the help of architect Marcus Barlow. Educated at Brighton Grammar, Barlow lived in a beautiful bungalow in Middle Camberwell, and designed grand city offices and English-style houses for the well-to-do. He also had a well-developed Christian social conscience, believing 'it was not fair, in a land like Australia, that people should be compelled to live in slums' (*Age*, 29 June 1937, p 10). In 1935 Barlow joined the study group that Barnett founded to persuade the government to establish a National Housing Board, a body composed of 'experts with a thorough knowledge of slum conditions, architects, benevolent workers, surveyors and social workers' (*Age*, 16 April 1935, p 12). Equally impassioned over the slum question was John Buchan, who in 1935 made a nine-month study tour investigating slum clearance in England and Europe (*Age*, 17 July 1936, p 10; *Argus*, 2 December 1935, p 10, 1 December 1954, p 10).

As an architect, Barlow knew how images shaped public perceptions. With his own house appearing on the front cover of *Australian Home Beautiful* (taken from a painting by his artist cousin George Bell), he had first-hand experience of what occurred when a photograph of an architect's domestic or commercial work was reproduced in newspapers and pictorial magazines. Barlow used this knowledge and his talent as a photographer to great effect. To emphasise the need for new housing to the public and the government, Barlow and Barnett photographed the substandard houses and wretched living conditions of the poor and the unemployed (*Argus*, 8 July 1935, p 8).

As well as enlisting their middle-class, church-going supporters, Barlow and Barnett gained the support of the Labor Party. In July 1935 Barlow, Barnett and Labor's Slum Clearance and Better Housing Committee came up with the idea of building public housing next to the State Bank estate at Fisherman's Bend. Barlow drew up a plan of the proposed subdivision. With an eye to publicity, the campaigners saw to it that the plan was unveiled in parliament and reproduced in the *Age* newspaper the next morning (*Age*, 25 July 1935, p 9).

Prompted by this campaign, Victoria's Country Party government established a Housing Investigation and Slum Abolition Board in 1936 (*Argus*, 10 September 1936, p 11). Its terms of reference included determining the dwellings needed to accommodate people displaced by any housing reclamation schemes, and identifying the land where this housing could be built. Nothing, however, was said about whether the board needed to consider flats as an option. For their part, Barnett and Barlow, the two board members who hailed from Camberwell, refused to countenance overseas models for workers' housing of the type Martin, Stephenson and Overend had seen on their travels. So in December 1936 the government announced that 'flats of many storeys' were not to be built in Melbourne. As the Honorary Minister in the Dunstan government, and chairman of the Housing Investigation and Slum Abolition Board, explained, flats would 'become tenements and develop into slums' (*Argus*, 11 December 1936, p 18). The suburban prejudices of the board's Camberwell members had won the day.

On the day the government announced this decision, the surveyor Saxil Tuxen was appointed as the board's town planner. Tuxen, a well-known supporter of the garden suburb, had visited the United States in 1925, laid out Griffin's Ranelagh estate on Melbourne's Mornington Peninsula the following year, and been a member of the far-seeing but ineffective Melbourne Metropolitan Commission. He was also responsible for innumerable garden subdivisions throughout Melbourne, including Camberwell and working-class Reservoir (*Argus*, 11 December 1936, p 11; Nichols, 2002).

In an address to the Anglican Social Questions Committee in 1937, Barlow described the magnitude of the housing problem: 'During the Depression building had stood still, and although there had been a revival, practically no houses of the less expensive type had been built' (*Age*, 29 June 1937, p 10). As a result, Melbourne faced a shortage of between 25,000 and 30,000 'low renting homes for workers'. Believing private enterprise was unable to solve the problem, Barlow pressed the government to establish a housing board to build well-designed houses and let them to tenants at affordable rents.

Following the advice of the Housing Investigation and Slum Abolition Board, the Victorian parliament established the Housing Commission of Victoria in December 1937 to improve Melbourne's existing housing and build new homes for people of 'limited means'. This was a radical departure from the model developed while William McBeath chaired the State Bank. Rather than eventually owning a home by paying off their bank loan, the Housing Commission's tenants would never own their homes; the government would. This approach challenged the non-Labor belief that private property was the foundation of society. In these circumstances, the type of housing the commission chose to build was of the utmost importance. If it built flats, it would have been open to accusations that

it supported communal social values and Bolshevism. On the other hand, if it built houses in gardens that mimicked the garden suburb, its activities would be seen to be similar to the suburban homes that had helped redefine the national character and, in the eyes of the Nationalist Party, had brought stability to Australian society in the aftermath of the Great War.

In requesting architects to design houses and landscapes for a new group of people who had no chance of owning their own home, the government once again asked the profession to create symbols that could be read, understood and shared across Australian society. Just as they did in the 1920s, architects endowed these new houses and suburbs with conservative meanings. This allowed the middle class who lived in garden suburbs to believe they had something in common with the Housing Commission's tenants. So in April 1938 the commission paid Barlow a £100 stipend to provide it with architectural advice for six months. This arrangement, however, came to an end in September 1938 after questions in the Victorian parliament revealed the Victorian Premier was unaware of the arrangement (*Age*, 23 September 1938, p 14; Argus, 23 September 1938, p 14).

In October 1938 the commission began making plans to relocate people who were living in 800 insanitary homes in working-class South Melbourne and Port Melbourne, identified by the Housing Investigation and Slum Abolition Board as slums (*Construction & Local Government Journal*, 12 October 1938). To rehouse these people, the commission acquired 22 hectares of land at Fisherman's Bend in January 1939. Adjacent to the existing State Bank garden suburb, the site was pregnant with symbolism and meaning. Aware it needed to build an estate that was the equal of its neighbour, in February 1939, the commission announced a competition for a town plan for the entire site and an architectural competition for one-, two- and three- bedroom houses (*Age*, 13 April 1939, p 7).

The results of the architectural competition were announced in May 1939. The first prize of £125 was awarded to EC Jackson of the Commonwealth Department of Works, Melbourne. Arthur C Leith, the son of the State Bank architect, and partner Bartlett received the £75 second prize, Sydney architect EW Andrew the £50 third prize and Frank Heath the fourth prize of £50 (*Age*, 5 May 1939, p 4). Saxil Tuxen, and Melbourne architects Ballantyne and Wilson, won the planning competition (Nichols, 2002).

Eventually the commission proceeded with Tuxen's design. His cul-de-sacs, community centre, playgrounds, private gardens and tree-lined streets were the equal of the State Bank suburb next door. To make this point, the commission wanted to name its suburb Garden City even though the State Bank subdivision was unofficially known as 'Garden City' at this time (*Argus*, 24 January 1939, p 4; Howe, 1988). The Housing Commission was in effect claiming the title of garden suburb from a neighbouring government authority, saying its plans were at least equal to, if not better than, the State Bank's Garden City. To the *Argus*, the choice of name evoked the English garden cities of Letchworth and Welwyn. Representing Garden City as realising British suburban dreams, however, hid the radical nature of the Housing Commission's scheme. It also obscured the important influence of American examples on modern Australian progressive thinking, even though both winners of the planning competition had travelled to the United States. Both had also worked for the American architect Walter Burley

Griffin: Ballantyne as an employee in Griffin's Melbourne office before going to the United States in 1922, and Tuxen, after visiting the United States in 1925, laid out Griffin's Ranelagh estate (*Argus*, 24 January 1939, p 4; Lewis and Aitken, 1992; Nichols, 2002).

To realise its ambitions, the commission enlisted a panel of architects to prepare plans and supervise the construction of the 380 houses it wanted to build at Fisherman's Bend. This panel came into existence in June 1939 with members Frank Heath, Arthur C Leith, Best Overend and JFD Scarborough, all of whom had entered the competition. By July the panel's designs – which were different to the competition's winning entries – were finished. The commission then proceeded to erect four pairs of houses to these new designs before calling for tenders to build the rest (*Age*, 20 May 1939, p 25; *Argus*, 2 June 1939, p 8, 12 July 1939, p 11).

A non-Labor government had once again turned to housing to defuse threats to the social order. After the First World War, the government had looked to the State Bank to provide affordable, well-designed housing. In the Depression, the unemployed were unable to own a house in the suburbs and the State Bank model was no longer viable. At the urging of social reformers and architects, the government developed a new housing model in which it would build houses and rent them out. And because Barlow had sat on the Housing Investigation and Slum Abolition Board, and a panel of architects advised the Housing Commission, these houses, like their State Bank counterparts, were designed by architects. Furthermore, because 'individual homes were far better than tenements' (*Argus*, 2 May 1928, p 21), no flats were built in Garden City. At a time of social and political unrest, the government continued to see well-designed homes in garden suburbs as bulwarks against revolution. In this way, the myth of the conservative *zeitgeist*, the accommodation between capital and labour, was maintained during a time of economic calamity.

Mr Menzies' 'little piece of earth'

Three years after the Housing Commission completed its Garden City at Fisherman's Bend, Robert Menzies (1942) delivered his 'Forgotten People' speech on the radio. The speech re-affirmed the importance of a 'little piece of earth with a house and a garden'. In championing this suburban image, Menzies cast himself as the inheritor of a local tradition developed by the Nationalist chair of the State Bank of Victoria, Sir William McBeath, and Melbourne architects like Kingsley Henderson who had played an important role in founding the United Australia Party of which Menzies was now leader. For Menzies, who lived in a house designed by Henderson, the ideology of the garden suburb was particularly attractive. As leader of the opposition during the Second World War, he faced – as the Nationalist government had at the end of First World War – the problem of how a non-Labor party would win the peace. And, like his predecessors, he saw owning a suburban house and garden as a fail-safe way of giving people on modest incomes a stake (and a say) in the post-war nation. With his finely honed sense of tradition, Menzies would use the ideology of the garden suburb, created by Melbourne interwar architects, to build a new Liberal Party to cement the place of the suburbs in the national psyche.

NOTE

Every effort has been made to establish the copyright status of the historic images included in this article. If you have information regarding the copyright of these images, please get in touch with the editor, Jacky Bowring, jacky.bowring@lincoln.ac.nz, and we will respond appropriately.

REFERENCES

Australian War Memorial (1918) George Burridge Leith, *First World War Embarkation Rolls*.

Baillie Scott, HM (1906) *Houses and Gardens*, London: G Newnes.

Balderstone, S (1983) Kingsley Anketell Henderson (1883–1942). In *Australian Dictionary of Biography*, vol 9, B Nairn and G Serle (eds), Carlton: Melbourne University Press, pp 257–258.

Birmingham, A (1986) *Landscape and Ideology: The English Rustic Tradition, 1740–1860*, Berkley: University of California Press.

Blackett, WAM and Inskip, JB (1929) Report on the Exhibition of Domestic Architecture, *Journal of Proceedings of the Royal Victorian Institute of Architects* 26 (May), pp 73–78.

Blainey, G (1964) *A History of Camberwell*, Melbourne: Jacaranda Press.

——(2013) *A History of Victoria*, Melbourne: Cambridge University Press.

Brett, J (1992) *Robert Menzies' Forgotten People*, Sydney: Pan MacMillan Publishers.

Butler, G (1983) Leighton Major Francis Irwin (1892–1962). In *Australian Dictionary of Biography*, vol 9, B Nairn and G Serle (eds), Carlton: Melbourne University Press, pp 443–444.

Cathcart, M (1988) *Defending the National Tuckshop: Australia's Secret Army Intrigue of 1931*, Fitzroy: McPhee Gribble.

Corbett, DP, Ysanne, H and Russell, F (2002), *The Geographies of Englishness: Landscape and the National Past*, New Haven: Yale University Press.

Davison, G (1983) The City-bred child and Urban Reform in Melbourne 1900–1940. In *Social Process and the City*, P Williams (ed), Sydney: George Allen & Unwin.

Dixon Hunt, J (1992) *Gardens and the Picturesque: Studies in the History of Landscape Architecture*, Cambridge: MIT Press.

Dunstan, D (1990) Frank Stapley (1858–1944). In *Australian Dictionary of Biography*, vol 12, J Ritchie (ed), Carlton: Melbourne University Press, pp 52–53.

——(2007) Sir Bernard Evans (1905–1981). In *Australian Dictionary of Biography*, vol 17, C Cunneen (ed), Carlton: Melbourne University Press, pp 364–365.

Edquist, H (2008) *Pioneers of Modernism: The Arts and Crafts Movement in Australia*, Carlton: Miegunyah Press.

Edwards, C (1969) *Brown Power: A Jubilee History of the State Electricity Commission of Victoria*, Melbourne: State Electricity Commission of Victoria.

Everett, N (1994) *The Tory View of Landscape*, New Haven: Yale University Press.

Ferguson, N (2003) *Empire: How Britain Made the Modern World*, London: Allen Lane.

Fisher, JD (1990) Sir Arthur George Stephenson (1890–1967). In *Australian Dictionary of Biography*, vol 12, J Ritchie (ed), Carlton: Melbourne University Press, pp 71–72.

Fletcher, M (2002) *Digging People Up for Coal: A History of Yallourn*, Carlton: Melbourne University Press.

Freeman, P (1996) *The Early Canberra House: Living in Canberra 1911–1933*, Canberra: Federal Capital Press.

Freestone, R (1989) *The Garden City Movement in Australia*, Melbourne: Thomas Nelson.

——(2010) *Urban Nation: Australia's Planning Heritage*, Collingwood: CSIRO Publishing.

Fussell, P (1975) *The Great War and Modern Memory*, Oxford: Oxford University Press.

Goad P, (1995) Best Overend – Pioneer Modernist in Melbourne, *Fabrications* (June), pp 101–124.

——, Wilken R and Willis J (2004) *Australian Modern: The Architecture of Stephenson & Turner*, Carlton: Miegunyah Press.

Hamilton, RB (1938) Modern Flat Development in Melbourne, *Journal of the Royal Victorian Institute of Architects* XXXVI(2), pp 45–46.

Hamann, C (2007) Sir Roy Burman Grounds (1905–1981). In *Australian Dictionary of Biography*, vol 17, D Langmore (ed), Carlton: Melbourne University Press, pp 464–466.

Harris, D (1988) Not Above Politics: Housing Reform in Melbourne 1910–29. In *New Houses for Old: Fifty Years of Public Housing in Victoria 1938–1988*, R Howe (ed), Melbourne: Ministry of Housing and Construction, pp 1–19.

Henderson, A (2011) *Joseph Lyons: The People's Prime Minister*, Sydney: University of New South Wales Press.

Herbert, H (1934) Robert Bell Hamilton, *Art in Australia* (August), pp 74–86.

Heritage Council of Victoria (2004) *Kew War Memorial*, Victorian Heritage Register H2035.

Howe, R (1988) Reform and Social Responsibility: The Establishment of the Housing Commission. In *New Houses for Old: Fifty Years of Public Housing in Victoria 1938–1988*, R Howe (ed), Melbourne: Ministry of Housing and Construction, pp 20–44.

Lewis, M (1996) John Stevens Gawler (1885–1978). In *Australian Dictionary of Biography*, vol 14, J Ritchie (ed), Carlton: Melbourne University Press, pp 256–257.

Lewis, N and Aitken, R (1992) *City of Malvern Heritage Study. Appendix 1: Architects of Malvern*, South Yarra: City of Malvern.

Martin, M (1929) Garden Architecture, *Journal of the Royal Victorian Institute of Architects* XXVII(4), pp 73–79.

——(1932) Notes on the Development of Architecture on the Continent, *Journal of the Royal Victorian Institute of Architects* XXIX(6), p 173.

Menzies, R (1942/1992) The Forgotten People. In *Robert Menzies' Forgotten People*, J Brett, Sydney: Pan MacMillan Publishers Australia, pp 5–14.

Murray, R and White, K (1992) *A Bank for the People: A History of the State Bank of Victoria*, North Melbourne: Hargreen Publishing Company.

Murray-Smith, S (1979) Sir James Barrett (1862–1945). In *Australian Dictionary of Biography*, vol 7, B Nairn and G Serle (eds), Carlton: Melbourne University Press, pp 186–189.

Nichols, D (2002) Leading Lights: Garden Suburb Plans and Planners in Interwar Australia, PhD thesis, Deakin University, Geelong.

O'Hanlon, S (2002) *Together Apart: Boarding House, Hostel and Flat Life in Pre-war Melbourne*, Kew: Australian Scholarly Publishing.

Page, M (1990) *An Architectural Apex*, South Yarra: Buchan Laird International.

Plant, M (1987) The Lost Art of Federation: Australia's Quest for Modernism, *Art Bulletin of Victoria* 28, pp 111–129.

Poynter, JR (1979) William Lawrence Baillieu (1859–1936). In *Australian Dictionary of Biography*, vol 7, B Nairn and G Serle (eds), Carlton: Melbourne University Press, pp 138–145.

Priestley, S (1984) *The Victorians: Making Their Mark*, McMahons Point: Fairfax, Syme & Weldon Associates.

Rayworth, B (1986) *Marcus Martin: A Survey of His Life and Work*, vol 1, Melbourne: Investigation Project, Architecture Faculty, University of Melbourne.

RVIA (1928) *An Exhibition of Domestic Architecture, May 1–12 1928*, Melbourne: Royal Victorian Institute of Architects.

SEC (State Electricity Commission of Victoria) (1921) *Report on the Establishment of Township of Yallourn*, Melbourne: Government Printer.

Serle, G (1982) *Monash: A Biography*, Carlton: Melbourne University Press.

Smith, T (1993) *Making the Modern: Industry, Art, and Design in America*, Chicago: University of Chicago Press.

Stephenson, AG (1921) Industrial Housing: Some Practical Aspects, *Real Property Annual* 10, p 29.

——(1933) Social Welfare and the Housing Problem on the Continent, *Journal of the Royal Victorian Institute of Architects* XXXI(4), pp 71–75.

Tibbits, G (1979) William Arthur Mordley Blackett (1873–1962). In *Australian Dictionary of Biography*, vol 7, B Nairn and G Serle (eds), Carlton: Melbourne University Press, p 134.

Vines, M (1986) Sir William McBeath (1865–1931). In *Australian Dictionary of Biography*, vol 10, B Nairn and G Serle (eds), Carlton: Melbourne University Press, pp 204–205.

Ward, A (2001) *Darebin Heritage Review 2000*, Burwood: City of Darebin.

Younger, RM (2003) *Keith Murdoch: Founder of a Media Empire*, Sydney: HarperCollins.

Yule, P (2012) *William Laurence Baillieu: Founder of Australia's Greatest Business Empire*, Melbourne: Hardie Grant Books.

Zwar, D (1980) *In Search of Keith Murdoch*, South Melbourne: Macmillan.

Garden as 1:1: Between Paper Thinking and Earth Moving in Landscape Architectural Learning

FIONA HARRISSON

Decisions about design are invariably decisions about materials (Temple, 2011, p 50).

Design education seeks to mimic the design process in landscape architectural practice. Yet the educational process is fundamentally different because design ideas are rarely tested through building. Student learning, therefore, remains in the realm of abstraction: the representation of a design idea without translation into the actual material these ideas are intended to shape. Thinking through ideas at full scale offers an alternative way to explore design learning so students understand the spatial, social and material consequences of their ideas. Working at the 1:1 scale gives them an insight into the implications of their design decisions and experience in working directly with the materials of their concern. It also offers an opportunity to work one to one with each other and clients.

Fiona Harrisson is Senior Lecturer in the Landscape Architecture Program, Faculty of Design and Social Context, RMIT University, Melbourne, Australia. She is also a gardener and design consultant on public projects and private gardens.
Email: fiona.harrisson@rmit.edu.au

KEY WORDS
Doing
Making
Thinking
Design
Build
One to one
Design education

There is an emerging pedagogy of design within the field of landscape architecture, where the 'one to one' in both its meanings – that is, 1:1, where students undertake representation at full scale or work directly with the material of their concern, and one to one, as human-to-human interaction between students and their peers, clients and teachers – became the medium for exploring design through making. This mode of design exploration has opened different pathways for the design learning process as well as diverse social and material challenges. The use of 1:1 scaled outputs also offers the potential to deepen the space of learning and transform the one-to-one transactions between student and teacher and between students within the classroom as they engage with the materiality of their thinking.

The paper reflects on two design studios undertaken in consecutive years in the field of landscape architecture. In these studios, students from the Landscape Architecture Program at RMIT University designed and built gardens. The project took place as part of The Avoca Project, in Avoca, a small rural town two-and-a-half hours from Melbourne in Australia, where students partnered with local clients to design and build their gardens. The private residential gardens were completed to coincide with an eco living festival in the town, when the gardens were opened for public display. As a consequence, students acted as designers, builders and team members, and the design process unfolded between paper thinking and earth moving in various ways. Measured by the garden outcomes, the project was a success; however, the social experience proved to be more complex. It ultimately challenged the reasons for undertaking a 'live' project, where student learning is situated in communities outside the university setting. Understanding this experience has led to a shift in my teaching practice,

REFLECTION

from framing community as something in the world beyond the university to constructing community between the students within the classroom. The notion of the 1:1 and the one to one has played a pivotal role in enabling this shift. This approach places material and social practice at the centre of individual learning while setting up a community of learning within the classroom between individuals instead of seeking to co-opt community by moving beyond the university setting.

Making as pedagogy

Representation – that is, drawings or models that stand in for something else – is the predominant work of designers.

> Much of the time … a designer is not making anything at all but is instead only *predicting* what an object will look like, act like and experience like. Traditional design processes rely on prediction through the abstraction of representational models, drawings and mock ups to the extent that working with the actual materials is professionally relegated to others, out of the designers' hands (Temple, 2011, p 47).

Representation is a powerful tool. Through its very abstraction, and by setting the designer at one remove from the site, it allows for different kinds of thinking across different scales (Corner, 1992). When students begin learning to design, however, their grasp of the relationship between the abstraction of representation and its implication in the world is nascent. Working directly with materials at the 1:1 scale can bridge abstract thinking and material practice by providing an experience of spatial, social and material consequences.

'Learning through doing' is an accepted model of learning in the field of education that espouses the mantra 'it's not what the teacher does but what the student does that deepens learning' (Biggs, 2003, p 44). Design is learnt through undertaking a project or a problem that must be resolved. 'Doing' in design learning tends to occur through an intermediate medium, such as scaled drawings and/or models. This convention in design education allows for ideas to be explored at a range of scales within the classroom space. It is also informed by a tendency to privilege ideas over actual making: 'ideas are superior to matter, the command of drawing underpins the status of architectural design as intellectual and artistic labour' (Hill, 2005, p 14). As a result, the importance of understanding the translation of representation into the medium of landscape is often overlooked.

Unlike practitioners, students rarely have the benefit of actualising their ideas because their design usually remains in the realm of representation, as a static idea, whereas the matter of landscape is a living and changing phenomenon. As the students' drawings and models become increasingly sophisticated and comprehensive graphic productions, the inclination to get caught up in the representation as an end in itself, rather than seeking to understand how the drawing translates into a material project in the real world, is almost inescapable. Some students become so locked into the logic of their drawings and/or models they confuse the representation with the landscape itself, forgetting that 'a representation is an abstraction not to be confused for the actual experience of building' (Temple, 2011, p 91). This tendency is even more prevalent with virtual simulation of three-dimensional space, where the model can begin to replace the actual landscape in the student's mind. Till (2009, p 86) observes:

> The computer brings the distancing of architecture from the temporality of the world right at the start of the design process. Its immense power tricks the users (designers) and viewers (potential clients) into believing that what is on the screen is what will be achieved on site.

This is not to disregard the value of representational modes of thinking; rather, it is intended to question the ubiquity of representation as the privileged output of learning in design. Exploring 'making' – that is, working directly with the materials at hand – can complement thinking on paper.

'Making thinking' is a term coined by architectural educator Stephen Temple to bridge the gap between thinking through representation and the abstraction that distances designers from the world, and working directly with the materials of their concern at the 1:1 scale. This approach to teaching comes from a belief that:

> ... beginning designers want to work ... from direct connection to the world because this intimacy offers grounds for inquiry. Direct experience, like putting hands on materials, working full scale, and deciding about construction and joinery enables connectedness to working processes that thinking alone through abstraction and analysis only seems to obscure (Temple, 2011, p vii).

Of course, drawing too can be an inquiry; however, in design practice the drawing always stands for something else. It implies an eventual material translation. This requires an understanding of the spatial and material implications of translating one thing into another; a line on a page can represent a wall but its material quality is another experience again. It is a sensory encounter. Architectural educator Katheryn Moore suggests sensory intelligence should be central to the education of designers because 'the sensory mode of thinking is what those learning to design are expected to reap the benefits of, if they are to be successful in any way' (Moore, 2010, p 3).

Making is an embodied thinking process that puts students in a direct relationship with the object of their concern. It 'requires constant judgements of what is being done in terms of intentions, what the outcome will be, and what will work and will not work' (Temple, 2007, p 15). This decision-making process is relational and has immediate consequences. Here the student exercises their spatial and sensory knowledge and thinks through what is involved in physically working with the material as their ideas unfold. If there is no interposing medium, the students must grapple with material on its own terms. While in the process of making, students must ask themselves questions ranging from 'What does the material itself do?' to 'How can I work with it to achieve my intent?'.

The process of making invites the hands to think. As students make, they act and then witness the results of their decisions in these actions (Pallasmaa, 2009). 'Making is learning because there are consequences' (Temple, 2007, p 17). Making sets up an interactive and embodied conversation with the material in real time and space. It also enables students to experience the actual outcomes of their design thinking and to take responsibility for these decisions because they understand the consequences. Temple suggests it is the teacher's task to stimulate these capacities in students. He says that 'an instructor's task is not to lead students on this path but to aid beginning design students in the development of sensibilities so they may guide themselves' (Temple, 2007, p 13).

My opportunity to explore teaching design through working directly with the material of landscape arose through an invitation from artist and scholar Lyndal Jones to participate in The Avoca Project, her long-term venture investigating 'art, place and climate change'. The project took place in the town of Avoca in the Central Highlands of Victoria in Australia. Students from the Landscape Architecture Program at RMIT University went into the community to design and build gardens. The Avoca Project, which developed over 10 years, involved national and international artists, scholars and climate change experts exploring issues of climate change (Jones, 2016). Jones invited me to run a project with local residents where students could explore issues of climate adaptation in gardens. This proposal was one of many initiatives run during the Eco Living Festival which was an initiative of Lyndal Jones as part of the The Avoca Project. Gardens as a site of action made sense in Avoca because many locals were keen gardeners. It was also becoming increasingly difficult to grow common plants, especially fruit and vegetables, because of the impact of the 'millennium drought' that afflicted many parts of Australia. Increasing salinity in the town water was a further associated problem. It was an opportunity to undertake a 'live' teaching project, where students were learning in a real-world situation and community.

The studios in Avoca were framed by the broad research question: Can the garden become a model for testing ideas for growing gardens in harsh climates? Each studio ran for one semester and culminated in the display of the gardens at the Eco Living Festival. In two successive years, different cohorts of students undertook a variety of garden projects. The studio was set up as a laboratory to test design ideas for gardens in harsh climates. In an educational sense, students applied the larger issues of designing landscape in the microcosm of the garden. As eminent garden designer Dieter Kienast suggests, in spite of its small scale, the garden invites engagement with larger natural systems. Kienast (1997, p 6) asks, 'where else can we better and more directly practise a careful relationship with the world than in its microcosm, the garden?'. For example, there was no intention that these projects would solve issues of climate change; rather, they were a small-scale example to open pathways for action and thinking about design in the context of climate challenges.

The process of finding clients with appropriate gardens was different for each year. In the first year, a public announcement in the local newspaper invited residents to participate, asking, 'Do you want some students working in your garden?' (Harrisson, 2009). Eight garden owners responded, and three gardens were selected as appropriate case studies. For the first year, the students were involved in the garden selection process and also self-selected their working groups. The following year, all 12 students designed and built a single, large kitchen garden in the local pub. Smaller groups undertook different parts of this larger project. This second-year project was negotiated before the students started the studio. Although the intention was to allow more time for building the project, this decision reduced the students' agency in the project and may have affected the one-to-one relational dynamic in the studio, as discussed later.

Building as design

'Design/Build' is an established model of 'live' studio pedagogy. It is intended to integrate thinking and making, and is significantly underpinned by an aspiration

for service learning, where education fulfils a dual role of enabling students to learn while also serving communities in the real world outside the university setting. A precedent exists for learning to design in the field of landscape architecture through making gardens. The Design/Build programme was set up at the University of Washington in 1995 by Associate Professor Daniel Winterbottom (Design/Build Washington University, 2016). Designing gardens provides a project of limited size where students can explore the specific challenges of working with a living landscape. In this example, many of the garden projects are public spaces, commissioned and funded by different institutions. The Avoca Project shared this educational aspiration of learning about landscape architecture through the microcosm of a smaller garden project; however, the garden settings were substantially different. In Avoca, the gardens were privately owned with individual clients funding the projects. These private gardens became 'public' through the garden-making because local people made them available for a university project. The public nature of these private gardens was temporarily amplified during the Eco Living Festival, when they were opened for public visits. Compared with the Design/Build programme at the University of Washington, where the design outcomes suggest the projects were amply funded, the budgets in Avoca were modest, ranging from $250 to $5,000.

Another long-term design/build programme run through Auburn University in Alabama, called 'Rural Studio', provided inspiration. Here, students design projects for underprivileged communities, including in private houses for local families. Since its inception, Rural Studio has become renowned for its social agenda and innovation with recycled materials – a practice that transformed the challenge of modest funding into an asset. Exploring the use of recycled materials was the impetus for my visit to Auburn University in 2007, where I observed how each building became a hand-crafted artefact. For example, the walls of one house were constructed of stacked pieces of carpet (figure 1). These walls were thick, nearly 1 metre wide, with the edges of different-coloured carpet creating striated designs across the walls both inside and out. Although Rural Studio is an architecture programme, many of the projects demonstrate an understanding of architecture as part of the landscape. Other aspects of the Rural Studio work that were relevant to the Avoca gardens were its rural setting and the intention that the gardens surrounding the houses would reflect their context. Samuel Mockbee, the initiator of the Rural Studio programme, emphasised that the best way to make real architecture is by letting a building evolve out of the culture of place (Oppenheimer Dean and Hursley, 2002, p 2).



Figure 1: Rural Studio: house made of stacked carpet pieces. (Photos: author's own.)

Unlike the Rural Studio and Design/Build programmes, the project in Avoca was not designed as a specific university programme and, therefore, did not receive specific financial or administrative support. As described above, the project was set up as a series of two design studios in response to an invitation. This meant practical arrangements, such as setting up classrooms, organising accommodation and delivering food, were part of the administration of the studio. As the teacher, I negotiated these arrangements each year.

In addition to their involvement in the project in Avoca, the students and staff attended other courses at the university 200 kilometres away. In contrast with the Design/Build and Rural Studio programmes, where graduating students undertook an independent assignment as a 'capstone' project to demonstrate their proficiency, the Avoca students were in their first or second year of studies. In this sense, the Avoca studio was experimental. Students were learning to design rather than demonstrating their proficiency in delivering a project. Yet, at this early stage, they were offered the rare educational experience of seeing the garden they designed become real.

The social and political aspects of working and designing in communities were an important reason for undertaking the project. It continued a lineage of 'live' studio teaching I have undertaken since 2003 and described extensively (Harrisson, 2012a; 2012b) and also positioned within emerging Live teaching practices (Dodd et al, 2012). This current account focuses on a different aspect of the teaching, specifically the various ways the design process unfolded and the significance of the 1:1 scale and one-to-one interactions in the experience. Because the students were both designers and builders, the variability offered by the use of the 1:1 scale allowed them to undertake different design processes to explore the design intention while also allowing them to contribute according to their personal inclination.

Garden as landscape

Gardens have long been sites of exploration within the landscape architecture field; as both a representation of an idea and an actual space. They offer a limited area within which to test and explore ideas at the 1:1 scale.

Landscape historian Marc Treib interrogates the role of the landscape exhibition to address the dilemma of the represented landscape versus the actual experience of the landscape. The garden show offers an actual experience of the living landscape.

Given the sizable dimensions of landscape architecture, its display is far from easy – a task made doubly challenging by the use of representations and surrogates to stand in for genuine places (Treib, 2014, p 41).

He suggests, 'Garden shows present what most landscape exhibitions cannot: the actuality of materials, reality of space, living organisms and human presence' (Treib 2014, p 45). The garden show is an actual garden space while also containing ideas relevant for broader application, thus it operates simultaneously as a landscape model. Although the gardens in Avoca were not 'garden shows' as such, they performed a similar role when opened for public display as part of the Eco Living Festival. As well as creating site-specific designs, the students were required to come up with design proposals that might have application elsewhere.

In this regard, the Avoca gardens were both for habitation and a container of ideas to apply at other sites. In this sense, the garden operates as both actual space and a representation of ideas and offers many possibilities for exploration within landscape architectural education.

Design studio is the primary course where students undertake a design project or a 'problem' to be explored and resolved through design. At RMIT University, students choose between a range of offerings led by different studio leaders with a particular approach to design, including site, issue and method of exploring design. Donald Schon, educational theorist, champions the design studio as a model of learning where inquiry occurs through reflection-in-action, because it asks students to respond to unique, uncertain or conflicted situations in creative and rigorous ways. No correct answer exists in a design studio; rather, it requires an iterative process of inquiry, problem finding and refining one's thinking and action as one proceeds. Schon (1985, p 31) suggests that although this kind of knowledge is relevant in many professions, education is often taught as an array of techniques to fix a given problem. Typically, the studio-leader-cum-design -practitioner models the iterative process of thinking by working alongside the student during the drawing process. The 'live' studio set up in Avoca began to disrupt this master–apprentice relationship by admitting another voice into the process – that of the client and/or community requiring one-to-one interaction about the process.

Often, students receive feedback through design critiques, where they present their work to a panel of designers who then evaluate it. The evaluation is based on a triangulation between the studio brief, the student intention and the design outcomes as evidenced by a set of representations, such as drawings or models, which could be in digital or analogue format. These are read as an intention for a built reality. In Avoca, because the gardens were ultimately built by the students, the design outcomes were experienced by the critics. The critique did not rely solely on the presentation of design intent.

Making, thinking, drawing, building

Because the students acted as both designers and builders, the process, which typically begins with design and is then followed by building, was reconsidered. Rather than starting the design process with drawing, some students began their design by digging. Thus, digging became part of their design inquiry rather than simply physical labour. Likewise, representation took on different roles: sometimes it was speculative; sometimes it documented the completed project. It was essential the students were required to understand the particular local conditions so the gardens they created would survive and adapt over time. This aspect of the project was both explicit in the research question and strongly emphasised by the clients themselves.

To model an alternative way of working, and to foreground the material thinking process, each year the studio began with a small 1:1 project undertaken in the classroom. Students were asked to make 'equipment' bags, aprons and toolboxes. Each student was allocated an amount of cloth, a prototype pattern and a number. The number was a playful way of acknowledging that each person was part of a larger group, and it was also a simple way to vary each garment

(figure 2). Sewing machines were set up in the classroom and, rather than draw the design first and then 'build' it, students worked directly with the material, cutting and then stitching it. The softness of the fabric allowed the students to improvise, to make mistakes and to repair their errors. They were immediately involved in making, deciding, improvising, judging and negotiating with others. The outcome showed the multiple variations available within a limited set of materials. This task allowed conversations about composition, stretching the brief and learning construction techniques, all of which would be part of the garden design process. The students were required to document the process; some created drawings while others photographed their products. In this case, therefore, drawing occurred at the end of the process as documentation. This initial project suggested innovative ways of approaching the design process that were later explored in the field.

Once the studio started on site in Avoca, each garden group determined its own design pathway to the final built outcome. The process varied in each group, according to the client brief, the existing conditions, the design ideas and the students' inclinations. Some followed a typical sequence for the design process, beginning with drawings and completing the design process before starting on site. Others worked directly with the landscape itself as a way of unfolding their ideas. As a result, drawing and building played different roles in the process for each project. For some, thinking occurred through the medium of paper whereas for others it occurred by working directly with the material and drawing was used only as a means of later documenting the process. The design process chosen reflected the site and project intention and also eventually influenced the garden outcomes.

In one of the gardens, known as 'New Life', the students followed a conventional sequence for their design and started with drawing. Once the design was complete, they began building the garden (figure 3). 'New Life' was a newly built house situated on an old tennis court. Because of the highly compacted earth and the client brief requesting elevated vegetable beds, part of the project was to construct these beds. The students designed a series of elevated, interlocking wicking beds that were connected underground through a system of pipes for grey water as part of the watering system. The project required purchasing large amounts of new timber and pipes. The drawings involved much one-to-one interaction: the students needed to think through their ideas as a group, seek agreement from the client, calculate costs and order materials. Once the design was completed, the New Life group tested the scale through doing 1:1 drawings on site. Construction involved the implementation of the drawings and could have

Figure 2: Studio equipment: the first 1:1 task in the design studio. (Photos: author's own.)

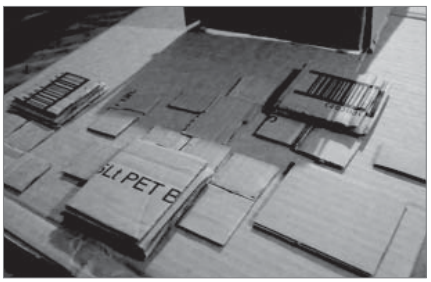

Figure 3: 'New Life' garden: the design process began with drawing and models, then moved on to drawing on site before building started. (Photos: Bella Leber Smeaton.)

been undertaken by a builder. Their decision to privilege drawing was evident in their approach to building the beds. During construction, the students lamented the amount of work required to enact their drawing, as they shaved millimetres from the timber lengths to create an exact replica of their plan. The client gently pointed out that a slight adjustment to the size of the beds would have allowed the students to work with standard lengths of timber and thus to save time and reduce waste. It is only through the experience of building their designs that such valuable 1:1 insights arise. In this moment, the client, who was an experienced builder, became the teacher.

In contrast, the students working with the garden known as 'Flow' began the design process through working directly with the earth, exploring the possibilities in a range of 1:1 on-site tests. In 'Flow', drawings were used to document and develop ideas once the project was under way. This approach was driven by the design intent, which was to carefully manipulate the existing conditions. Working directly with the material on site allowed students to understand the implications of different design decisions in situ. The project focused on a small orchard of around nine fruit trees struggling to survive because of a lack of water. It involved digging a series of swales to direct excess stormwater from the street towards the orchard. To understand the hydrology, the students made several 1:1 tests on site by digging a series of small swales at different angles and slopes to test how the water moved. The swales were then planted with local gazanias to secure the soil. As it happened, it rained heavily enough to enable students to assess the performance of the swales. The client and the students then reviewed these tests, and the results informed their future decisions and the final design of the swale system. These 1:1 tests provided a direct understanding of the site materials and the complexity of the site and system (figure 4). An action research feedback

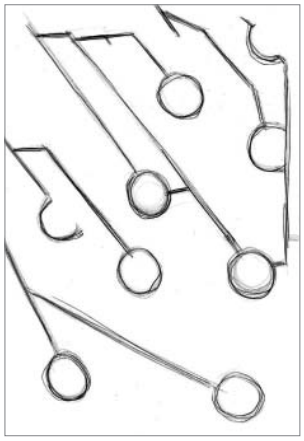

Figure 4: Flow garden: the process began with testing the water flow on site; later a diagram of the layout of the swales system was drawn before the final design was built. (Photos: Jessica Van Swol.)

loop between the initial tests and the decisions informed the layout of the lines feeding the trees. In this instance, the building itself became the design rather than simply the implementation of an already determined idea.

In the garden known as 'Flatlands', and in the Avoca Hotel project the following year, students chose to work with recycled materials. This decision was driven partly by budgetary constraints but mostly by the desire of both the students and clients for the gardens to fit with their surroundings. In both gardens, the process began with collecting materials and simultaneously developing an overall concept. The students moved between concept and making, as new materials were found. The 'Flatlands' garden was inspired by an unkempt railway verge opposite it, where the students noticed a complex array of plants thriving in different microclimates as well as some artefacts. They wanted to create a garden that thrived without a watering system, using subtle topographic changes to create different microclimatic zones for different plants. On the first visit, the students started the project by laying old carpet and other materials to degrade the existing lawn. They also propagated seedlings and took cuttings from other garden plants in the vicinity. These were planted in particular locations, with students paying careful attention to the different microclimates.

Before the earthwork started, this group of students made a collage to express their interpretation of the cottage garden brief (figure 5). Although the built garden that later emerged looked nothing like the original collage, the representation was an important one-to-one tool because it informed the students' conversation with their clients about their approach. The methods used in the collage also mirrored the process the students undertook on the garden, which was to compile found objects into a whole. The client agreed to let the students use ephemera from around the property. Salvaged timber from an old tank stand on the property was transformed into a small deck while large, old bricks paved a sunken sitting area and a water catchment area (figure 6). The garden structure was strongly informed by the hydrology, which was later adapted so students could ensure water was directed to create wet and dry areas for different plants. This understanding arose by working directly with the ground: digging, adjusting levels and carefully guiding water. Models and drawings also provided an overall direction. These were adjusted in response to on-site discoveries and as the students sourced different recycled materials. The drawings and models allowed the students to retreat from practical engagement to think in the abstract and consider larger concept ideas. They could then return to working with materials to realise these forms.

Figure 5: Flatlands garden: the speculative collage and the garden itself were a composition of found materials. (Photos: Blaise Macdonald.)

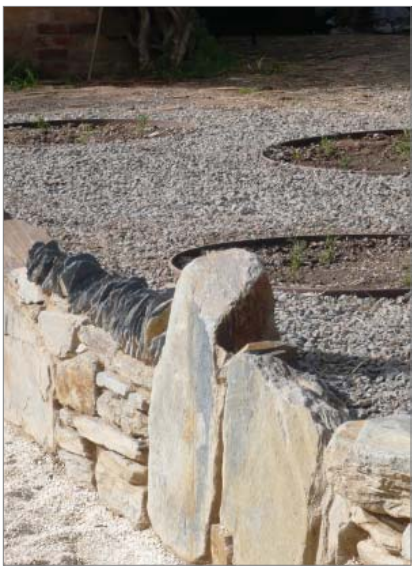

Figure 6: Avoca Hotel: local materials were sourced to construct the 10 metre retaining wall, donated corrugated iron sheets were sorted and used to form curvilinear wicking beds and the red sheets were used to create part of the compost heaps. (Photos: author's own.)

The design process in the Avoca Hotel garden the following year was highly influenced by the large size of the group involved. In addition to making scaled drawings and models, group members found drawing 1:1 on site became a useful tool for decision making and negotiations amongst group members (figure 7). Each student could register the actual size of things in relation to their own body and the rest of the site. Drawing 1:1 occurred at several stages throughout the project. Students also took responsibility for different parts of the project. One student had more experience than others and mentored peers in the use of machinery. Another built a rough model to communicate the overall idea to the client. In addition to an orchard and an orange grove, large wicking beds were created to accommodate vegetables. The curvilinear shape of the garden beds was inscribed directly on to the ground. This allowed for a subtle determination of the form as it related to the slope. The curves were fashioned from corrugated iron donated by the neighbours. With an angle-grinder the iron was cut into strips and those strips were then riveted together to create a wall edge that could be formed into the curvilinear shape accommodated by the material. The students negotiated with the client to buy water tanks and to create compost heaps to close the system. They used off-cuts from the corrugated iron to build the compost heaps. The different colours in the iron were used to create distinct visual effects, depending on the aspect from which the edging was viewed. The garden was ambitious in scope. Although the process was slightly chaotic, it was completed on time and it worked. It was beautifully crafted and sat well in the larger landscape, both aesthetically and from a systems perspective.

Workmanship and the careful and intentional recursive process carried out on materials (Temple, 2011, p 77) played an important part in the design process. The process involved transforming ordinary materials into something that contributed to a larger design idea. Each material was met on its own terms and transformed into something else.

To implement their design ideas at the 1:1 scale, it was essential that students learnt new skills along the way. Building a granite retaining wall nearly 10 metres long and 40 centimetres high was one example. The wall was designed to create

Figure 7: Avoca Hotel: the idea was first drawn on the ground in flour and then a conceptual model made for the client. Next, levels were resolved before measuring on site. (Photos: author's own.)

two flat areas. To construct the wall, the first line was drawn on site and then pegged with string to determine the location of the cut (figure 8). Granite was a locally sourced material and using it made sense; however, neither students nor staff had any skills in stone-wall building. Fortuitously, one of the students asked her grandfather to mentor the group in the construction process. A backhoe with dingo attachment was hired to cut the line and dig the foundation. A 10-tonne truckload of local granite was then delivered. The next step was to sort the rocks into loose size categories to assess the material at hand. Different-sized rocks fulfilled different roles in the wall. Larger rocks were used to tie the wall together; the smaller ones fitted in between. Over two weeks a group of 12 students carefully crafted the wall, deciding which rock went where for every stone they placed. A large, flat rock was saved to create a surface suitable for a seat. At the end of the process, the students created a capping made from small left-over slivers of rock.

In addition to learning the principles of building a stone wall, the students learnt how to handle rock and make subtle choices about where each rock should sit as they constructed the wall. This was a process more akin to crafting than building. As Sennett (2008, p 9) suggests:

> Every good craftsman conducts a dialogue between concrete practices and thinking; this dialogue evolves into sustaining habits, and these habits establish a rhythm between problem solving and problem finding.

Because the students were both designers and builders they had to address the abstraction of the idea and then the material manifestation of that idea. Some started with a hunch and began by working with the earth itself and later used representation to think through their ideas at a larger scale. Others started with the concept and then used representation to resolve their ideas as they built. The variety of processes reflected both the project itself and the students' different inclinations. Their combined design and build role meant the students' connection between their representation and the material outcome was unavoidable.

Student feedback overwhelmingly reflected their appreciation of this opportunity to build and to see the outcome of their efforts. Inevitably, some expressed frustration at the amount of time and commitment required to complete the project. The time taken to undertake the studio was well in excess of the course allowance. The students also had to complete and I had to teach other courses at the same time as the Avoca studio, which involved competing deadlines and excessive travelling between Melbourne and Avoca. These pressures are a consequence of running the course as a design studio, a single course as part of a landscape architectural programme. In contrast, the Rural Studio is set up as

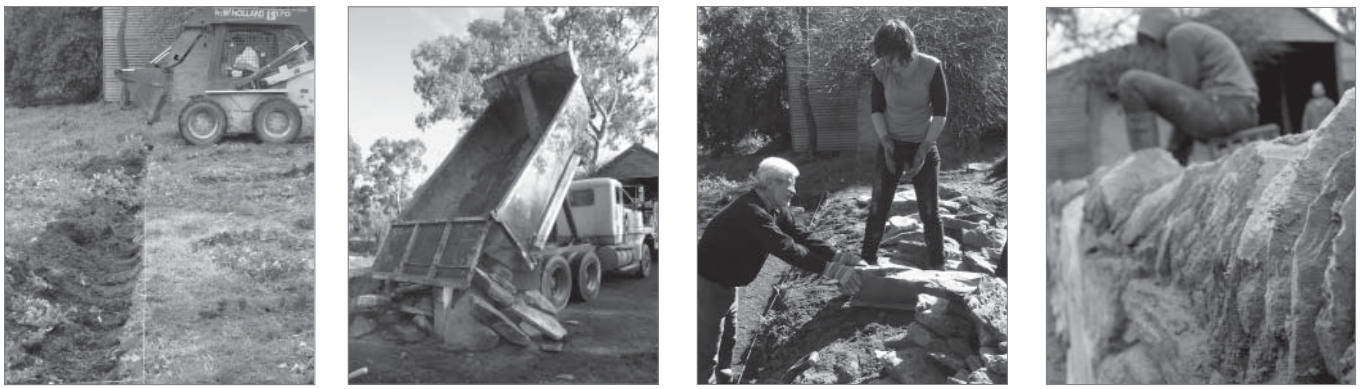

Figure 8: Understanding the building process and learning skills to form raw materials into the material manifestation of design ideas. (Photos: author's own.)

a stream within a programme that acknowledges the specificity of the learning models. Students are required to take other courses while undertaking the design/build project but these courses are part of the whole immersive experience of living in a small community. In this situation, the student experience is conceived as a whole; it allows for flexibility in relation to the demands of the project and acknowledges the demands of this specific model. Ongoing administrative support for the logistics of the project is also provided. Administrative support and the place of the studio within a programme are aspects that would need to be addressed before I would undertake such a project again.

From 1:1 to one-to-one

The effectiveness of the one-to-one relationships, and especially of the teamwork between the students to enable them to both design and build the gardens, was a critical aspect of the design studio in Avoca. It was, however, the teamwork that was also the most challenging aspect of the studio. This was particularly evident during the second year when the students worked together on a single large project.

The garden outcome and engagement with clients were explicit aspects of the course structure, learning objectives and assessment, yet the inevitable requirement for teamwork skills was not stated in the course materials or planning. As a result, negotiations between students happened haphazardly and, when conflict arose, my intervention was required. This lack of acknowledgement that the students needed to learn to negotiate working relationships was a teaching oversight and had enormous ramifications for the dynamic of the studio. This dynamic is the visceral feeling of the space of learning, which is also evidenced by the presence or absence of a sense of goodwill and trust among the students and between the students and teacher.

Biggs (1999, p 3) suggests that strong students teach themselves and need little help from teachers; it is the weaker students who need help to learn how to learn. In Avoca, the students had to learn how to work successfully as a team – requiring different skills from those involved in working alone, which is common practice with design studio projects. In the first year, the students sorted out their working relationships among themselves, whereas in the second year they did not. Although it did not directly influence the designed outcome, the group dynamic was complicated and remained unresolved until the end of the studio. Initially, I attributed the difference in dynamics each year to the different sizes

of the groups. Reflection over an extended period and through teaching other courses brought me to the understanding that the learning infrastructure did not reflect the relational capacities the students required to work successfully with each other. The course preparation offered nothing to draw on to manage situations as they arose.

The intention in placing students in a 'live' community context was to give them a direct 1:1 experience of the impact of their ideas on the lives of others. It was based on the belief that people are motivated when they understand the implications of their work. This approach underpinned the 'live' teaching projects I had undertaken in rural communities in the seven years before the Avoca studio. In these projects, however, rather than build their designs, the students developed site-specific design proposals in response to local design issues and in conversation with local community members. The students' ideas were thus speculative – that is, ideas were explored and communicated through drawings and/or models and collage (Harrisson, 2012b). The Avoca studio evolved this practice of 'live' pedagogy from speculative designs to built outcomes. This raised the stakes in two ways. First, the students were required to complete the gardens because clients had invested their time, enthusiasm and funds in them; there was an obligation to deliver a product. In classroom teaching, it is acceptable and sometimes important for a project to fail in order to understand the implications of actions. Total project failure is not an option in a live project. Second, because of the size of the project, students had to work in teams to complete the gardens.

In Avoca, the difference was clearly evident in the way the projects unfolded between the first and second years. In the first year, the project transitioned from teacher-led to student-led, whereas the second year saw no explicit handover to the students. Issues arose in each group in the first year but eventually roles were defined, the working dynamic was resolved and my role as arbitrator between the students diminished. Because the dynamic worked, the students felt proud of and pleased with their work, and there appeared to be no reason to modify the learning objectives. Yet aspects of the learning happened in spite of the course, not because of what it offered.

From the beginning of the second year, attempts were made to break the single large project into smaller deliverables, with different students responsible for different parts. However, as this approach relied on the students' willingness to lead the project, it largely did not happen. Although all of the students laboured on the project, a couple shouldered the bulk of the work because they were particularly driven to do the project well and also felt a sense of duty to the client. This was particularly evident at the end of each day when many students disappeared rather than helping to clean up the site.

Although the project surpassed the client's expectations, in feedback to the students at the end, the client mentioned the project had relied on only a few for its completion. Biggs (2003, p 14) might distinguish this as the difference between deep learning and surface learning. As Biggs (2003, p 3) says, this is not a reflection on the nature of the student; rather, it is the difference between those students who understand how to learn and those who need to learn how to learn. One student showed great initiative by following through on an individual design project within the Avoca Hotel studio while also contributing to collective

work. He designed and built fold-up furniture for the group to use during the studio. In between these tasks, he also helped in labouring on the building of the garden. In this way, he was a team participant and also extended his design skills. As the teacher, I encouraged him to do this but he showed the maturity to drive the project and learnt more from the studio as a result. This student showed what David Boud (1981, p 11), educationist, might describe as a student autonomy or responsibility for their own learning.

Although the Avoca studio's 'live' context mimicked the professional client–designer relationship, it overlooked an important aspect of the learning required for students to undertake the project successfully – that is, the communication and collaborative skills needed to enable them to work together to design and deliver the project. Participation in the 'community of learning' within the community needed to be explicit in the Avoca studio. The bag- and apron-making task at the start of the studio implied the idea of a team, with each student making a kind of uniform with the same materials and colours but differentiated through their design and particular number. This act was a clue to the need for teamwork but it remained a symbolic gesture and the more explicit learning was lost in the process. Including teamwork as a learning objective in the Avoca studio would have provided an instrument through which to ask students to reflect on their own engagement with the group and would have provided the grounds to discuss issues with the students as they arose as well as to develop skills and capacities to address them. This inner aspect of learning is, in many ways, the real learning and reflects Zajonc's suggestion that learning is an experience that occurs in the outer and inner dimensions of human life (Zajonc, 2010, p 60). This reorients the focus of learning from the material landscape out there to the human dimensions of what it means to practise.

Although I am yet to run another studio where students design and build gardens, the lessons from Avoca have continued to inform my teaching. In my current approach, student engagement with the work of their peers, the one to one, is an integral part of the learning environment. This includes learning through individual student projects undertaken within the classroom setting that are not anchored in the on-site grit. This acknowledges the value of the learning that occurs between students and builds community within the classroom. It is an approach that extends the 1:1 practice of working with materials to include the interactions between students as a different kind of one to one, which is a consequence of real-life experience that can occur within the classroom.

The students' engagement with the work of their peers is articulated in the course guide as participation in the community of learning and is explicit as part of the teaching method. It sets up an experience that Biggs (1999, p 61) would describe as students working collaboratively and in dialogue with others, both peers and teachers. Part of the teaching is to model different ways of speaking about the work. Asking students to participate in the community of practice as adults and to engage with the work of their peers invites them to draw on and build their embodied knowledge. It also appears to build the confidence of individual students and confidence in the web of relationships between class members. Articulating this aspect of the learning has consistently transformed

the space of learning within the classroom. It reframes community as those within the classroom, including teachers and students, rather than just seeing community as something in the world outside the university.

Conclusion

Working at full scale in design education gives students the opportunity to work directly with materials and in real time. It admits both the thinking and the sensing body as part of the process of doing design. In landscape architecture, gardens provide a useful site within which to explore ideas while also working with living materials, thereby providing the opportunity to bridge the abstraction of representation and the material resolution of ideas. The small scale of many residential gardens offers a limited area within which to test ideas at the 1:1 scale while also being a model for testing ideas at a larger scale. By acting as both designers and builders in the Avoca studios, students were able to explore the design process in a range of ways. These varied according to the site conditions, the students' own individual inclinations and those of their peers. Some students conceived their designs through the abstraction of representation whereas others began through working with the earth. Students experienced the consequences of their decisions and bore witness to the work of others.

Reflection on the successes and failures of teaching the design/build studio in Avoca has led to a reconsideration of the construction of the space of learning. Although design is predominantly measured by material outcomes, the one-to-one human capacities and relational skills are equally critical aspects of the design process. While design through making is relational through the physical crafting of materials, the building of larger projects, such as the gardens in Avoca, requires working together as a team. Rather than leaving students to sort out issues between themselves and assuming they will pick up the relational skills they need along the way, the teacher needs to recognise that these relational skills must be learnt and therefore include them as part of the teaching process. This is the case with all projects requiring students to interact together. These same inter-personal relational skills are also relevant when establishing a community of practice within the classroom. Including students' participation in the community of learning as part of the learning objectives is one way of foregrounding the responsibilities students have in relation to each other and acknowledges the potential contribution each person can make to the larger class. To maximise individual contribution, education in social practices needs to be an explicit aspect of live design studios. Through this process, community is constructed within the student group rather than as something outside the university. This provides a bridge between teaching inside the classroom and the 'live' projects like the gardens designed within Avoca.

NOTE

Special thanks go to the landscape architecture students who designed and built the gardens: Shahad Al-Bazo, Ceira Barr, Alexander Cumming, William Davies, Katherine Chalmers, James Frew, Brett Frost, Alexandra Desmond, Glen Dillon, Daniel Fulton, Adrian Keene, Alistair Kirkpatrick, Bella Leber Smeaton, Jasmine Lee, Jesse Lewis, Pia Longden, Sam Manley, Blaise McDonald, Kha Nguyen,

Serene Silva, Jack Tupper, Tara van Dunk, Chrystal van Run, Jessica van Swol and Suk Won Chun. Thanks also go to the clients who generously offered their gardens for student learning: Lyndal Jones, Dave and Helen Porra, Elaine Clifton, Jenny and Ron Oxworth, Johann and Ray Western and Alison and Ian Urquhart.

REFERENCES

Biggs, J (1999) What the Student Does: Teaching for Enhanced Learning, *Higher Education Research & Development* 18(1), pp 57–75.

–––(2003) *Teaching for Quality Learning at University* (2nd edn), Maidenhead: Open Press University.

Boud, D (1981) *Developing Student Autonomy in Learning*, London: Kogan Page.

Corner, J (1992) Representation and Landscape. In *Theory in Landscape Architecture: A Reader*, S Swaffield (ed) (2002), Philadelphia: University of Pennsylvania Press.

Design/Build Washington University (2016) *Design/Build Programs: Goals and Philosophy*. Accessed 15 February 2016, http://larchwp.be.washington.edu/features/designbuild.

Dodd, M, Harrisson, F and Charlesworth, E (2012) *Live Projects: Designing with People*, Melbourne, RMIT University Press.

Harrisson, F (2009) Do You Want Some Students Working in Your Garden? *Pyrenees Advocate*, 22 July.

––– (2012a) *Growing Gardens Growing Dialogue*, Melbourne: Melbourne Books.

––– (2012b) Digging the Dirt: Locating Design Learning between People, Politics and Place. In *Live Projects: Designing with People*, M Dodd, F Harrisson and E Charlesworth (eds), Melbourne: RMIT Press.

Hill, J (2005) Building the Drawing, *Architectural Design* 75(4), pp 13–21.

Jones, L (2016) *Avoca Project*. Accessed 15 February 2016, www.avocaproject.org.

Kienast, D (1997) *Gardens*, Basel: Birkhäuser-Verlag für Architektur.

Moore, K (2010) *Overlooking the Visual: Demystifying the Art of Design*, New York: Routledge.

Oppenheimer Dean, A and Hursley, T (2002) *Rural Studio: Samuel Mockbee and an Architecture of Decency*, New York: Princeton Architectural Press.

Pallasmaa, J (2009) *The Thinking Hand: Existential and Embodied Wisdom in Architecture*, Chichester, United Kingdom: Wiley.

Schon, D (1985) *The Design Studio: An exploration of its traditions and potentials*, London: RIBA Publications for RIBA Building Industry Trust.

Sennett, R (2008) *The Craftsman*, London: Penguin Books.

Temple, S (2007) *Design Through Making: A Pedagogy for Beginning Architectural Design*, Iowa: Kendall/Hunt.

––– (2011) *Making Thinking: Beginning Architectural Design Education*, Iowa: Kendall/Hunt.

Till, J (2009) *Architecture Depends*, Cambridge: MIT Press.

Treib, M (2014) Exhibiting Landscapes, *OASE Journal of Architecture* (93), pp 40–51.

Zajonc, A (2010) Beyond the Divided Academic Life. In *The Heart of Higher Education: A Call to Renewal*, PJ Palmer, A Zajonc and M Scribner (eds), San Francisco: Jossey Bass.

Garden Streetscapes: Front Yards as Territorial Configurations

KRIS SCHEERLINCK AND YVES SCHOONJANS

Too often, we assume great streets are defined by great buildings. Yet many streetscapes distinguish themselves by the presence of flower or vegetable gardens, front yards or backyards, allotment gardens, community playing fields or parks.

Gardens, as a substantial element of low-density (and even high-density) neighbourhoods, articulate a highly qualitative relationship between private and public properties, between shared spaces and those used individually and between domestic spaces that can be separated or joined. As a consequence, streetscapes need to be considered as spaces delimited not only by building façades but also by configurations of garden walls, fences, strips of grass, tree lines, muddy roads or concrete slabs for parking: these are the territorial borders that indicate how and to what extent collective spaces can be interpreted and appropriated by their users.

This paper presents a theoretical framework that studies gardens as structural elements of streetscapes and it discusses a case study in Williamsburg, New York, that is part of the international Streetscape Territories Research Project being conducted by the Department of Architecture of the University of Leuven on different cases of streetscapes in New York, Barcelona, Ghent, Brussels, Havana, Addis Ababa and so on (see also www.streetscapeterritories.wordpress.com). Additional international references to recent uses of space in different socio-cultural contexts are provided to broaden the perspective of the research. The paper deals with the following research question: Can we describe the structural role of gardens in the making and use of contemporary streetscapes?

Kris Scheerlinck is Associate Professor of Architecture, Department of Architecture, KU Leuven, Hoogstraat 51, 9000 Ghent, Belgium. Telephone: +32–9–225–1000 Email: Kris.Scheerlinck@kuleuven.be

Yves Schoonjans is Professor of Architecture, Department of Architecture, KU Leuven, Hoogstraat 51, 9000 Ghent, Belgium. Telephone: +32–9–225–1000 Email: Yves. Schoonjans@kuleuven.be

KEY WORDS

Streetscape territories
Urban projects
Collective spaces
Territorial configurations
Borders and boundaries

Streetscapes

It is well known that streetscapes are places of social cohesion (Goffman, 1959), even if their position in the urban fabric and the density of the environment and intensity of use might lead to different levels of togetherness. In any case, streetscapes define streetlife (Ford, 2000; Mehta, 2007). They are places of encounter for families, neighbours and strangers, where a delicate but essential relationship is established between private and public properties (Dovey and Wood, 2015), between the intimate and the exposed, between the individually and the collectively used and between levels of privacy and community (Chermayeff and Alexander, 1963).

Many architects, urban designers, planners and social activists in the 1960s and 1970s emphasised the importance of the way streets were planned, designed and used as a guarantee for social cohesion and urban integration: from Stanford Anderson's *transactional spaces* (Anderson, 1978) to Allan Jacobs's *great streets* (Jacobs, 1993), from Jane Jacobs's *eyes on the street* (Jacobs, 1961) to Gordon Cullen's *sequence planning* (Cullen, 1961). These authors studied the permeability of façades, the social control of sidewalks, the rhythm of property lines and the way

REFLECTION

open space was organised or specialised and they proved that these parameters were important for designing socially sustainable environments at a small scale. However, streets were often considered as spaces between building façades, and the selection of exemplary cases was restricted to, rather consolidated by, building blocks or other types of streets defined by a continuous street wall, focusing on morphological aspects and the permeability of the façades.

The studies above seem to refer to the architectural artefacts defining the streetscape, considering buildings as the starting point of analysis. More recently, streetscape approaches have been updated, and discourses about interfaces have been proposed (Bijlsma and Groenland, 2008; Bobic, 2004; Dovey and Wood, 2015; Gehl, 1987; Gehl and Gemzoe, 1996), introducing a broader approach to streetscapes that focuses on the voids or gaps within the streetscape, like flower or vegetable gardens, front yards or backyards, allotment gardens (figure 1), community playing fields or parks. Nevertheless, in these approaches, public space remains a hierarchically dominant element in street configurations: open spaces stay as additions to something more important than the constituent public space, defined by buildings. Gardens, however, as one particular category of open space, play an essential role in the way streetscapes are experienced. These spaces, whether they are front yards or backyards or in-between spaces, embody a structural position in streetscapes.

This paper considers the following research question: Can we describe the structural role of gardens in the making and use of contemporary streetscapes?

It also discusses whether the elements that define the role and meaning of these in-between spaces in streetscapes can be described and how they contribute to a cultural identity for the neighbourhood.

Streetscape territories and depth

From Aldo Van Eyck's attention to *thresholds* (Strauven, 2007), the idea of *urban interfaces* from Milos Bobic, Jan Schreurs and Kim Dovey (Bobic, 2004; Dovey, 2008; Schreurs, 2008), Thomas Sieverts's *Zwischenstadt* (Sieverts, 1997), to Gordon Matta-Clark's *sliced territories* (Matta-Clark, 2006) or Peter Rowe's *middle landscape* (Rowe, 1991), in-between spaces have been an important topic

Figure 1: Green Thumbs allotment garden, Coney Island, New York. (Photo: Kris Scheerlinck, 2014.)

in architectural or urban debates. In many cases, however, intermediate spaces are presented as *de facto* interesting spaces, as if they automatically guarantee urban qualities, without the reasons for this being unveiled. In other instances, they are considered *blurry* intermittent spaces, grey zones (the semi-public, semi-private approach) and as *unsharp* areas sandwiched between more important or more easily definable spaces. Apart from the possible qualities in-between spaces may obtain, the main focus should be on the way they are defined – that is, by seeing them as part of a larger system of adjacent spaces, programmes and use.

This focus can be provided by considering streetscapes as configurations of depth and overlap. The notion of space as a configuration was explored by various researchers (Hanson, 1998; Hillier, 1996) and further developed (Anderson and McFarlane, 2011; DeLanda, 2006; Farias and Bender, 2010) until the notion of *assemblage* was reached.

> As a verb assemblage focuses attention on processes of connecting – connecting people or firms to each other, producers to consumers, people to buildings. As a noun the assemblage is a cluster of interconnections rather than a 'thing'. It is akin to a 'place' in the sense that it is a socio-spatial territory with some identity, however fluid (Dovey, 2010, p 15).

The Streetscape Territories Research Project[1] is working to further develop this idea of configurations, by analysing a series of urban projects and their constituent in-between spaces. The research examines the way architectural artefacts, open space and property structure (and its inherent accessibility and permeability) configure streetscapes and how inhabitants can give meaning to these elements.

This project analyses models of proximity within a street, neighbourhood or region. It starts from the assumption that urban space, from the domestic to city scale, can be understood as a discontinuous collective space (de Solà-Morales, 1997), containing different levels of shared use that are defined by multiple physical, cultural or territorial boundaries (Scheerlinck, 2013). How do people and buildings relate to each other, and how does this relationship contribute to the local identity of the built and social environment? The intermediate scale – that is, the scale between the architectural intervention and the urbanistic plan – defines its main research domain. Within this research project, collective spaces that are characterised by a *between–among* space condition are read, mapped or designed. Not only systems of streets, squares, gardens and parks, but also patios, porches, enclaves, covered or portico spaces, courtyards and all other interstitial areas are the subject of this research.

The research involves the systematic and comparative analysis of existing neighbourhoods, streetscapes, public spaces, urban landscapes and complex buildings in different locations, based on research by design. It includes multiple approaches from different disciplinary fields and considers research and design simultaneously with the integrated processes of developing urban projects. A group of designers and doctoral and postdoctoral researchers with international expertise in architecture and landscape at an urban scale are involved in the research analysis. Instead of having a programmatic or formal approach, this group focuses on the qualities or potential of the urban landscape, taking into account the socio-cultural impact of an intervention.

The main conceptual and theoretical reference in the research approach is the notion of *territorial depth*: the relationship between private and public spaces is defined by sequences with different lengths and intensities and various ways of reading them. According to Habraken (1998, p 137), the built environment is defined by a territorial organisation and is founded on the principle of inclusion within other territories: 'Territorial depth is measured by the number of boundary crossings ... needed to move from the outer space to the innermost territory' (figure 2).

As a result, territorial depth increases when collective spaces (like shared vestibules, common gardens, courtyards and so on) are introduced within multiple sequences. However, territorial depth is not a static parameter: within a certain framework, after the intervention of various urban agents, depth can increase or decrease with time, according to the specific characteristics and dynamics of the built environment. In other words, increasing depth is directly related to the creation of collective or shared spaces at different levels within the territorial hierarchy. Shared spaces can be common courtyards or vestibules, gardens, storage or parking spaces, common playgrounds, corridors or passages. Some parts of the home can be seen as collective spaces as well, because the inhabitants agree to collectively appropriate those spaces. We could add that territorial depth is strongly related to the property structure within the hierarchy but is not exclusively dependent on it.

In-between

The spaces discussed above, which add depth to an urban or domestic sequence, are in-between spaces; however, they should not be considered margin or buffer spaces but as having a structural role in streetscapes.

In his paper 'Territory without a Model', de Solà-Morales (1997) describes an alternative approach to the meaning of places, next to the traditional concept of *genius loci*: he refers to 'the expected sensation of voids and the indifference of their constructions' (p 24). According to de Solà-Morales, the organising principles of contemporary urban fabric, especially those defining its periphery, are no more tactics of composition, repetition and differences but 'systems of relative distances' (p 24), and he notes that the dialogue between a building and its surroundings becomes more singular but at the same time obtains a more abstract dimension. One could state that in-between distances belong to an increasingly complex matrix, an urban system of distances that can be understood as a non-absolute configuration. These spaces function like communicating vessels, where one intervention implies immediate consequences for other parts of that same

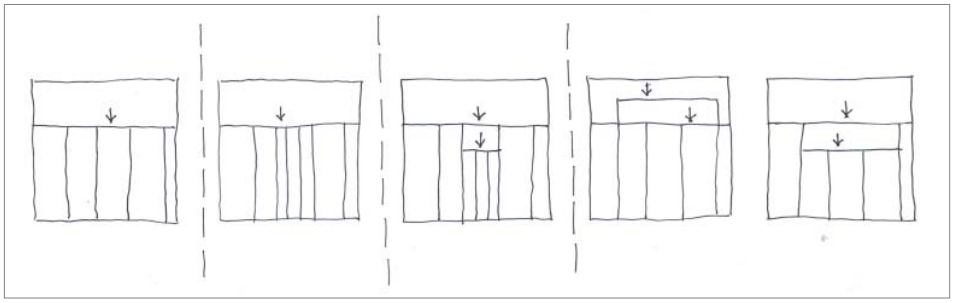

Figure 2: Increase in territorial depth; this considers the strip indicated in the top part of the diagram as public space and the bottom part as private space. (Source: figure 12.8, Habraken, 1998, p 215.)

configuration. In addition, de Solà-Morales (1997) argues that the distance between areas or autonomous packages defines the way the built environment is constructed or transformed: our daily experiences are increasingly defined by sets of minimum or maximum distances.

More important than the property itself, however, is the distance between properties, between properties and natural resources, between properties and infrastructures and between properties and high employment areas. Instead of zoning or defining density, sets of rules for relative distances are configured, which might differ in suburban conditions, for example, from those in downtown areas. In a way, time and distance are defined and measured systematically within the contemporary landscape, allowing a comparison with other spatial configurations. As noted by Secchi (1993, p 116):

> The space in between things, between objects and subjects next to one another, between my house and my neighbour's, between their office and mine, is traversed by many strangers, and it is not a meeting place; it has become empty because it plays no recognisable role; this space is only required to be permeable, and should be traversed with as little friction as possible.

Similarly, Secchi (1993) detected a change in the nature of the built environment: continuity, together with centrality or urban equilibrium, is now obtained by recognising urban fragments and the spaces in between. He refers to the *inverse-city*, where the traditional centre occupies the periphery and vice versa, where big-scale depth sequences might be turned inside out (p 93).

Rowe (1991) agrees and, in *Making the Middle Landscape*, describes, at a slightly bigger scale, the characteristics of contemporary landscape:

> The most disconcerting physical characteristic of the middle landscape is the desolate and inhospitable space left between many buildings and building complexes. Commercial strips extend out in the surrounding countryside without any suggestion of a centre or of termination. Bland residential subdivisions and office parks leapfrog over one another, leaving vacant land and unfinished developments in their wake. Many buildings have a temporary quality, suggesting that they might be here today and gone tomorrow. The surrounding landscape is pervaded by parking lots that offer little definition of their primary function, let alone an inviting environment. Entirely absent are characteristics of traditional city streets that graciously provide for public life (p 249).

Although he recognises the appearance of voids and gaps within the middle landscape as a problematic but characterising element, he misses the continuous, overlap-based, complex urban set-ups that 'graciously provided' real public life (Rowe, 1991, p 31). Voids, gaps or in-between spaces, which are seen as structural elements within processes of spatial and social specialisation and segregation in this middle landscape, seem to have gained importance within urban theories and practices during the past decades. There has been a growing need to consider and value in-between spaces as a main structural element in the way we build homes, streets, neighbourhoods or regions. How we define these territorial distances, however, is the major concern (figure 3).

An interesting paradox appears when we consider the way territories are delimited in contemporary contexts. By being part of this abstract, indifferent,

Figure 3: Suburbia in Bratislava, an example of shallow-depth configuration in housing typology and its effect on the streetscape. This is a copy-paste bungalow typology in which the distance between the house and property limits is too short, thereby reducing the quality of this housing typology as part of a residential streetscape. (Photos: Kris Scheerlinck, 2002.)

generic and matrix-like field of relative distances, an increasing number of urban projects simultaneously obtain a more figurative or less abstract dimension. Analysis of recent urban projects, from the domestic to neighbourhood scale, shows an increasing explicitness of boundary delimitation and a sharper definition of these sets of distances. The more the built environment turns into a not-so-site-specific system of relative distances, the more space is produced in an explicit way that is easier to read and leaves no doubt as to how to interpret that system.

As part of the research project discussed in this paper, several case studies were analysed with a particular focus on how gardens play an important role in streetscapes as in-between spaces. The results highlight instances of configured aggregated territories, based on systematic separation through the application of deliberate gaps or intervals in the street layout. Also evident are projects that rely on spaces that have rather high integrated values within the depth configuration,[2] making use of overlap scenarios. Both implicit and explicit boundary delimitation occurs in these case studies, even if the latter phenomenon seems to be dominant. Most of the built projects seem to increasingly apply explicit boundary delimitations, avoiding a free appropriation by users and embracing a no-risk policy when referring to privacy or security. The worldwide and increasing occurrence of fencing gardens is one example: property owners and neighbours seem to have an increasing need to separate their adjacent territories. Here, besides security and privacy, the aspects of appropriation and social status play an important role.

However, not all cases point towards exclusively explicit territorial delimitation. Rather they show different ways of configuring territories and highlighting the qualities gardens can give to streetscapes

Garden as streetscape protagonist: A case study

One case study that is part of the Streetscape Territories Research Project is in Williamsburg, New York, where the streetscapes are predominantly defined by open spaces of all kinds. All the streetscapes in this area are peculiar. When walking through the neighbourhood, one detects an interesting variation of defining boundaries; it seems as if in every street many different filtering tactics have been applied in a non-systematic way. Setbacks, front yards, small gardens, alleys and walkways become essential parts of the streetscape. North 5th Street,

running perpendicular to the East River, is an example. It looks as if each user, inhabitant or property owner was provided with the freedom to delimit the territory in their own way, unfolding the street's own territorial configuration. The lack of specific planning guidelines seems to explain the origin of these streets as territorial laboratories; gardens are laid out in different sizes and with different purposes, which generates a different identity for each property.

Observing the figure–ground map of the street and its direct surroundings, a rather irregular morphological set-up can be detected (figure 4), unlike the early nineteenth-century street grid. Besides the streets and sidewalks, many other spaces in different sizes are left open, waiting for construction, to host parking and accommodation and to provide gardens or courtyards for neighbours. Many spaces, from private front gardens to community parks, provide character to a property or building. The properties and buildings situated at the south-eastern part of the street seem to be smaller in scale. They present a much more capillary structure than the north-western part, which is dominated by industrial activities and storage facilities, even if, at the very end of the street, new housing blocks are being constructed.

The streetscape is mostly defined by aggregated territories of different scales, small at one end of the street and bigger at the other. One territory is situated next to another without any specific height or setback regulation: each single building, independent of its use or scale, seems to position itself freely within the delimited territory. Some buildings show setback of more than 10 metres, containing a private front yard, while the façade of the neighbouring house is situated strictly coinciding with the property limit. Other buildings seem to have occupied part of the sidewalk, to guarantee a higher level of privacy. Besides that variation, the section widths change and do not seem to show a regular pattern.

In considering the street as a *territorial configuration* (Scheerlinck, 2013), it is necessary to map accessibility in a coherent way. How do boundaries define the space where one can or cannot enter? In other words, what is the

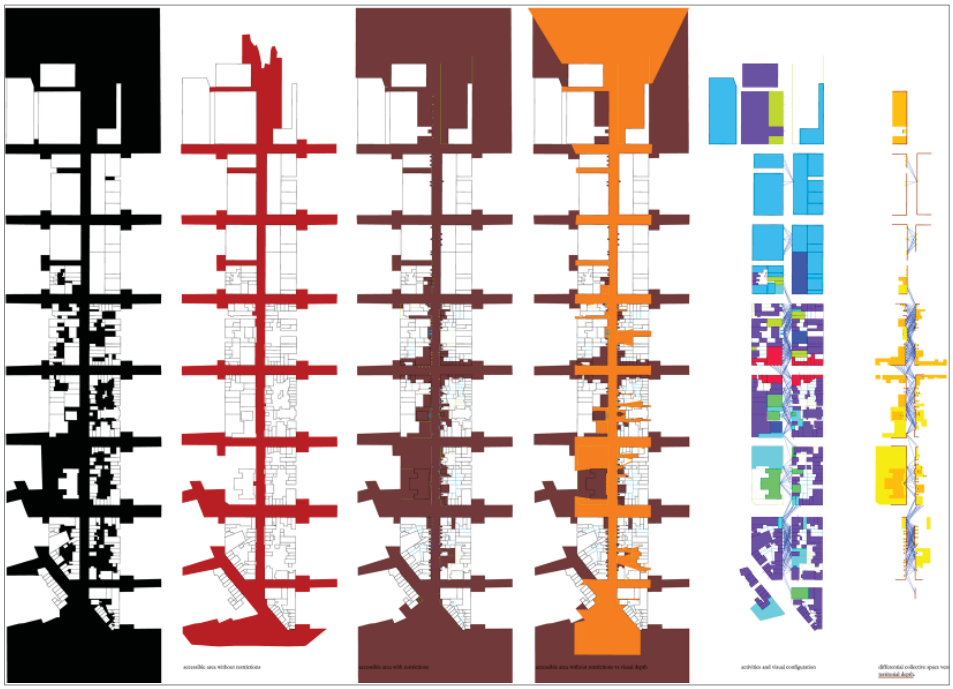

Figure 4: Case study in Williamsburg, New York, North 5th Street. Left to right: figure–ground map showing open spaces in the area around North 5th Street; map of open space with no restricted access (coinciding with streets, sidewalks and squares of public property); map of open space with restricted access (after going through sets of territorial filters and collective space); visual overlap map; functional configuration map; and depth configuration map. (Maps and sections: Kris Scheerlinck, 2010.)

territorial configuration of this linear cluster of aggregated, integrated (or included) and overlapped territories? How do green open spaces play a territorial role in these scenarios?

To answer this, we can draw a map of the available open space within the area where there are no restrictions of access to different territories: that map would coincide with the traditional concept of public space. The map would show a regular pattern of space production, because it is based on the nineteenth-century planned grid, which clearly defines the neighbourhood's sidewalks and traffic areas. Compared with the open space map in figure 4, we can detect more constant widths of sections as the streets define a regular rhythm of organised space. However, it seems that no one determining line regulates or describes the relationship between the area of unrestricted access and restricted access. There are many different parallel lines, producing move-forward, move-backward actions in the game of territorial configuration. Street-wall location is defined not by one line but by a set of multiple parallel lines.

A closer look at the interface configuration in figure 5 shows a variety of filter tactics that deal with individual and collective territories.

For example, cross-section 2 shows a system of physical, visual and territorial distances that define the domestic territory. The depth, as observed from the street towards the interior areas, is defined by boundaries of different kinds. A small step first indicates the difference between the street itself and the protected sidewalk, stressed by the appearance of a tree line. Next, within the sequence, a fence appears that seems to indicate the start of another territory. The fence with its gate represents a first restriction of access: only the owners of apartments within the building can enter this outdoor space (with a key) before going through the front door, which represents – besides the outdoor–indoor division – another territorial boundary. Before you reach that door, however, a set of stairs allows you to get to the level to enter the building. Once the inhabitants or visitors get inside the common hall, another restriction is made between the residents of the apartments situated on the different floors in the building.

The combination of these filter tactics defines the depth sequence: some are physical – like the steps, fence, doors and trees – while others need to be tested by their transparency or visual exposure. One can easily look over or through the fence and visually control the next territory, while in other cases this visual control is avoided explicitly. In this instance, the boundaries with territorial meaning are the fence with the gates and the internal separating door. These are the filter tactics that actually reduce the collective use of space. Each time someone crosses a territorial border, it means a reduction in accessibility, a selection of admitted or wanted users. Figure 5 shows the different distances related to open space, to no restricted access and to restricted access. The difference between the last two areas is indicated as *differential collective space*; here, it is strictly located between two territorial boundaries.

Another example of differential collective space is cross-section 4 in figure 5, where a multi-family house is visible with a large setback from the street, separated by a fence with a gate. Here, the territorial boundaries are the external fence, the exterior front door and the internal door, between the common hall and individual apartments. Physical distance plays an important role in defining depth, while

Figure 5: Case study in Williamsburg, New York, North 5th Street, top to bottom: cross-sections 4, 6 and 2. (Photos and illustrations: Kris Scheerlinck, 2010.)

thresholds and treelines differentiate the collective part of the sequence. The visual distance is large but no obstacles are used to guarantee higher levels of privacy. The differential collective space seems to be proportionally larger than in the previous cross-section, even if this does not increase the absolute value of territorial depth (more possibility of sharing space).

We could compare this with cross-section 6, where there is a similar physical set-up but with different territorial meaning. Here, the house is a single-family home, which reduces the depth. The territorial boundary is defined only by the outdoor fence, situated close to the street, delimiting an individually used territory. As a consequence, no differential collective space can be detected because there is no difference between the distance related to space with or without the access restriction. Another difference is the appearance of trees and lower vegetation that limit visual exposure from the street.

Similar results can be found in figure 6, cross-section 13, even if the territorial configuration here becomes multiple and more complex. At the ground-floor apartment level, a fence with a gate defines the individual territory before the entrance door is reached. The upper floors of the buildings are occupied by several families, which means that when people walk up the steps toward the door, no real restriction of access exists: the door leading to the common hall is the applied filter tactic. In other words, one morphological configuration describes two territorial scenarios. The upper floors contain an overlap scenario whereas for the ground-floor apartment the extreme visual exposure of the front garden converts that space as well in an overlap area, but in an introverted way.

In this streetscape, the complexity and multiple-access possibilities of included or aggregated territories are clear. In some cases, the perpendicular position of a multi-family building creates several territorial scenarios; most are based on territorial transition – that is, the planned sequence from few access restrictions to areas of ever-reducing collectiveness within the approach sequence. Other scenarios show minimum depth and a simple configuration, as all distances coincide, even the visual access diagram, as is the case in cross-section 17 (figure 6).

Besides the unintentionally planned combination of territorial scenarios, it is interesting to see how the more recent projects avoid the overlap scenarios and almost exclusively plan the entrance sequence on territorial transitions with explicit delimitation of boundaries. Technological devices are added to control properties, even if it is the proper configuration of space, with the help of landscaping devices that define the sequences.

The streetscape analysis for North 5th Street (figure 7) shows a range of configured collective spaces along the street, according to their appearance, structure and importance for the urban fabric, with the gardens as the main ingredient. In some cases, gardens only play the role of a separating device; in others, they become an element of overlap, inviting users to share in-between spaces.

Figure 6: Case study in Williamsburg, New York, North 5th Street, above and below: cross-sections 13 and 17. (Photos and illustrations: Kris Scheerlinck, 2010.)

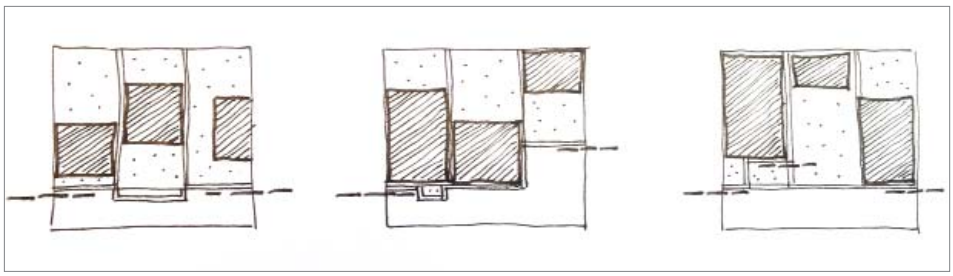

Figure 7: Territorial streetscape variations in North 5th Street. (Illustration: Kris Scheerlinck, 2010.)

Rather than providing insights into the detected qualities of the streetscape in figure 7, based on the multiple territorial variations in the neighbourhood, the relevance of this study lies in extrapolating these findings and linking them to other related phenomena of space production regarding garden streetscapes.

Garden streetscapes: Case studies in residential neighbourhoods

The following case studies describe particular garden streetscapes in different residential contexts, illustrating territorial variations and their relationship with a socio-cultural dimension. These examples demonstrate the structural role of gardens in territorial configurations, as in each case they substantially contribute to the reinforcement of local identity.

The first case study describes two suburban residential neighbourhoods defined by a similar density and using similar plot sizes but in different contexts: the case of one neighbourhood in Melbourne (Australia) compared with suburbia in Miami (United States of America) (figure 8). For Melbourne, the streetscape is defined by a continuous line of front gardens, each delimited by a fence located on the boundary of the property. The way greenery is combined with different types

Figure 8: Comparative study of the position of territorial boundaries (dashed bold lines) in suburban conditions: (left) the case of Melbourne, Australia, and (right) the case of Miami, Florida, USA. (Photos: Kris Scheerlinck, 2010.)

of fences or low walls actually defines the character of this suburban street. The delimitation of the in-between spaces is, in this example, explicit. For Miami, the position of the territorial boundary is different because it is situated between the houses, providing a non-fenced front yard that is carefully and more implicitly defined by a system of parallel lines. This way of organising the front of a property is typical for American suburban culture. Basic comparison of the two examples shows that relative distances, especially the position of the territorial boundary (that is, the boundary that provides or denies access) as part of that system, can be coded and decoded in different ways, according to a certain culture. In each case, gardens play a structural role in the definition and use of the streetscape. The level of accessibility and permeability is different in both examples and is defined by relative distances as part of the particular building and landscaping tradition and culture.

Another example of streetscapes with gardens and alleys as defining elements, and with a similar housing density to the examples above, comes from a residential area in Coney Island, New York: Brighton Beach (figure 9). In this coastal area, an interesting repetition of single-family houses has allowed subtle changes in territorial scenarios. Even if the streets seem to be defined by the same housing module (originally vacation homes close to the beach and adjacent amusement park), a rich and wide variation is apparent in how the gardens or alleys are used: sometimes they are shared and sometimes they are used in an individual way, increasing the territorial depth scheme.

Although the footprint of the houses is similar in the neighbourhood, the way the adjacent in-between spaces are organised or configured shows the need for flexibility of use for inhabitants. The spaces in front of or next to the houses are used in various ways, for example: as parking spaces, playgrounds, front yards, vegetable gardens or walkways. It is this variation that defines the neighbourhood's identity, where the inhabitants strongly depend on all kinds of outdoor activities in the gardens that define the streetscape.

Figure 10 shows another interesting example of a garden streetscape. This is in a different context from the previous examples, being situated in Tel Aviv,

Figure 9: Brighton Beach, Coney Island, New York, USA: gardens and alleys are part of the sets of relative distances and territorial variations. (Photos: Kris Scheerlinck, 2014.)

Figure 10: Repetition of in-between spaces in housing blocks in Tel Aviv, Israel: these collective spaces provide shared access to residential blocks, are used as playgrounds for the neighbourhood's children or simply provide light and air to the apartments. In some places, the alleys are closed off and in others they remain accessible to all. (Photos: Kris Scheerlinck, 2013.)

Israel. The Bauhaus-meets-vernacular building tradition illustrates how, in many neighbourhoods in this city, inhabitants combine shared territories with privacy and especially use gardens to articulate this. When walking along one of the city's main central streets, like Allenby Street, one can see a discontinuous street wall that comprises aligned but detached multi-family housing blocks. The street wall offers an entrance corridor in between blocks that provides a sheltered, shared entrance for the inhabitants and that is slightly set back from the busy street. This way, a clear and easy-to-decode differentiation is made from the entrances to commercial activities on the ground floor of the same blocks. These in-between spaces become interesting collective territories, understood as a system of urban gardens that define the streetscape as much as the constituent building blocks. The repeated garden intervals provide a rather ambiguous reading and an informal appropriation of space and allow users to differentiate the gardens properly.

In a similar way, the housing block entrances in the central part of Tel Aviv, especially between Rothschild Boulevard and King George Street, can be seen as an urban laboratory of increasing territorial depth through their use of these gardens. Many of the housing blocks have an open floor plan at ground level, which means part of the space unfolds between columns that hold the higher floors of the apartment blocks, so a system of subtle gardens has been put in place. These covered gardens are used as entrance areas, for bicycle storage and for relaxing and are seen as both an extension of the sidewalk on one hand and the interior part of the entrance vestibule on the other (figure 11).

The result is a rich and green streetscape that lets inhabitants appropriate the spaces in an open way. The relative distance between housing blocks provides a needed openness in interpretation of the urban and domestic space.

The opposite also occurs – where the streetscape does not penetrate the private property by means of a shared garden as in the previous examples. The increasing application of fencing techniques, where existing gardens that were part of the original open streetscape become fenced gardens and obtain a sudden explicit boundary delimitation, defines many residential streetscapes around the world (figure 12). The need for a clearer identification with a property, the (perception of) insecurity, the wanted rise in social status (by differentiation and separation) and

Figure 11: Tel Aviv covered front gardens. (Photos: Kris Scheerlinck, 2013.)

the increased need for privacy explain this increasing tendency. This phenomenon drastically affects the understanding and use of streetscapes on a global scale and, by that means, the proper identity of the residential neighbourhood.

Conclusions

In considering the notion of *territorial depth configuration and sets of relative distances*, a new perspective on the role and meaning of gardens in streetscapes can be gained. The quality and meaning of these spaces for inhabitants and users depend on the way different territories are configured, more than the strictly morphological issues of proportion and size or pure functional approaches. Gardens can become social and cultural spaces that express the complex interconnectedness of inhabitants and users. Although the gardens are often hardly or not accessible, they play an important part in the taking of ownership of streets. By allowing the possibility to reimagine the place, they strengthen the connection towards an embodied and anchored experience. They offer an in-depth process towards placemaking, setting complex creative patterns of use and practices that take up, and at the same time create, the local identity of a neighbourhood.

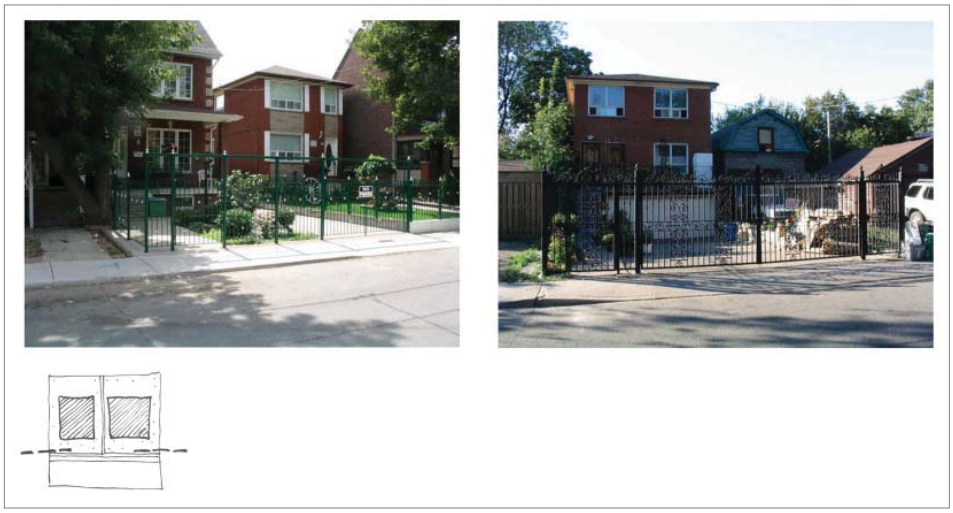

Figure 12: The increasing phenomenon of fencing: examples in Toronto, Canada. Originally open front gardens have recently (2009) been fenced by the owners. The diagram below the photos indicates the depth structure of this streetscape, with the dashed bold line indicating the position of the territorial boundary (that is, where actual access is provided or denied). (Photos: Kris Scheerlinck, 2010.)

A series of parameters can be detected that define these landscape configurations that are related to a cultural understanding and use of space. These parameters relate to the relative position of territorial boundaries and the in-between spaces within property configurations, the level of explicitness of boundaries, the presence of overlap scenarios, the openness of functional determination in the sequence, the amount of territorial variations (hence their multiple readings by users within one streetscape) and the subtlety in providing visual exposure. Considering these parameters, gardens are protagonists.

The role and meaning of gardens in streetscapes are not purely aesthetic, environmental or symbolic: gardens, yards, alleys and courtyards are structural elements that are part of territorial depth configurations. They provide space and time for inhabitants or users to unfold their needs and desires within a property and neighbourhood. The examples discussed in this paper, taken from different contexts and cultures, allow us to state that the way streets are laid out does not exclusively depend on the position of the buildings on plots, reducing the garden to a leftover or buffer space. It is exactly the opposite: the qualities of many of the streetscapes discussed are the result of a cultural tradition and conscious decision to use gardens as organising principles that carefully configure garden streetscapes.

NOTES

1 *Streetscape Territories* is the name given to a research project about the transformation of the urban fabric with a focus on the constant reconfiguration of its streetscapes. The research deals with the way architectural artefacts, systems of open spaces, property structures and their inherent accessibility and permeability models configure streetscapes and how their inhabitants can read and give meaning to them. This project focuses on accessibility and models of proximity within a street, neighbourhood or region and starts from the assumption that urban space, from the domestic scale to the scale of the city, can be understood as a discontinuous collective space, containing different levels of shared use that are defined by multiple physical, cultural or territorial boundaries. See also www.streetscapeterritories.wordpress.com.

2 High integration value within a depth configuration refers to the position a space has in a depth configuration. If we count the number of spaces we must pass through to go from the space with a higher integration value to all other spaces, we find it comes to a total that is less than for any other space – that is, it has less depth than any other space in the complex. The general form of this measure is called integration, and it can be applied to any space in any configuration: the less depth from the complex as a whole, the more integrating the space and vice versa. This means every space in the different examples can be assigned an 'integration value'.

BIBLIOGRAPHY

Anderson, B and McFarlane, C (2011) Assemblage and Geography, *Area* 43(2), pp 124–127.

Anderson, S (1978) *On Streets*, Cambridge: MIT Press.

Bijlsma, L and Groenland, J (2008) *The Intermediate Size: A Handbook for Collective Dwellings*, Nijmegen, Netherlands: Sun Publishers.

Bobic, M (2004) *Between the Edges*, Bussum, Netherlands: Toth Publishers.

Chermayeff, S and Alexander, C (1963) *Community and Privacy*, New York: Doubleday & Co Inc.

Cullen, G (1961) *The Concise Townscape*, London: The Architectural Press.

de Solà-Morales, M (1997) 'Territoris Sense Model' [Territory without a Model], *Papers: Regió Metropolitana de Barcelona* (26), pp 21–27.

DeLanda, M (2006) *A New Philosophy of Society: Assemblage Theory and Social Complexity*, New York: Continuum.

Dovey, K (2008) *Framing Places*, London: Routledge.

–––(2010) *Becoming Places*, London: Routledge.

–––and Wood, S (2015) Public/private urban interfaces: Type, Adaptation, Assemblage, *Journal of Urbanism: International Research on Placemaking and Urban Sustainability* 8(1), pp 1–16.

Farias, I and Bender, T (eds) (2010) *Urban Assemblages*. London: Routledge.

Ford, L (2000) *The Spaces Between Buildings,* London: John Hopkins University Press.

Gehl, J (1987) *Life Between Buildings*, New York: Van Nostrand Reinhold.

–––and Gemzoe, L (1996) *Public Spaces and Public Life*, Copenhagen: Danish Architectural Press.

–––, Johansen, L and Reigstad, S (2006) Close Encounters with Buildings, *Urban Design International* 11, pp 29–47.

Goffman, I (1959) *The Presentation of Self in Everyday Life*, Harmondsworth: Penguin.

Habraken, J (1998) *The Structure of the Ordinary*, Cambridge, MA: The MIT Press.

Hanson, J (1998) *Decoding Homes and Houses*, Cambridge, UK: Cambridge University Press.

Hillier, B (1996) *Space is the Machine: A Configurational Theory of Architecture*, Cambridge, UK: Cambridge University Press.

Jacobs, A (1993) *Great Streets*, Boston: The MIT Press.

Jacobs, J (1961) *The Death and Life of Great American Cities*, New York: Vintage Books.

Matta-Clark, G (2006) Splitting the Humphrey Street Building, interview by Liza Bear, May 1974, Catalogue of Gordon Matta-Clark Exhibition, Madrid: Museo Nacional, Centro de Arte Reina Sofia.

McFarlane, C (2011) Assemblage and Critical Urbanism, *City: Analysis of Urban Trends, Culture, Theory, Policy, Action* 15(2), pp 204–224.

Mehta, V (2007) Lively Streets, *Journal of Planning Education and Research* 27(2), pp 165–187.

Rowe, PG (1991) *Making the Middle Landscape*, Cambridge, MA: The MIT Press.

Scheerlinck, K (2013) Privacy and Depth Configurations, *Architektura & Urbanizmus: Journal for Architecture and Town Planning Theory* 2, pp 166–185.

Schreurs, J (2008) *Bridging Interfaces*. Bridging the Divide ACSP-AESOP Joint Congress, Chicago (Illinois), 6–11 July, Abstract No. 936, pp 511–512.

Secchi, B (1993) For a Town-Planning of Open Spaces, *Casabella*, January/February, pp 597–598.

Sieverts, Thomas (1997) *Zwischenstadt: Zwischen Ort und Welt, Raum und Zeit, Stadt und Land*, Braunschweig: Vieweg.

Strauven, F (2007) *Aldo Van Eyck: Shaping the New Reality form the In-between to the Aesthetics of Number*, Montreal: Study Centre, Mellon Lectures, CCA.

The Sitio Roberto Burle Marx: A Case Study in the Garden as Scientific Laboratory or Vegetal Studio for a Moving Work of Art?

JULIAN RAXWORTHY

The garden is a place of experimentation, where gardeners try out plants and both see how they grow and explore how to use them to effect, but does that make the garden a 'laboratory'?

Roberio Dias (2008) has described the Sitio Roberto Burle Marx (Roberto Burle Marx personal garden and nursery outside Rio de Janeiro, Brazil) as a 'landscape laboratory'. Using the Sitio as a case study and Dias's 2008 essay as a point of departure, this paper asks, if a laboratory is 'a room or building equipped for scientific experiments, research or teaching', does the phrase 'garden as laboratory' accurately describe how the garden operates as a creative space? If it does not, what would be a more appropriate description?

Considering the garden as an artist's studio recognises that, even while science is involved in the process of growing plants, its aim is to cultivate plants for aesthetic purposes. If each plant is a test, and the tests interact ecologically, then the art produced in the garden as studio is of a radically different type: a moving work of art. In reconceiving the garden as studio and its art as alive, I aim to help enrich theories of planting design to engage them with growth.

Julian Raxworthy is Senior Lecturer and Convenor of the Master of Landscape Architecture and Master of Urban Design programs, School of Architecture, Planning and Geomatics, University of Cape Town, Private Bag X3, Rondebosch, 7701, South Africa.
Telephone: +27 21 650 1752
Email: julian.raxworthy@uct.ac.za

KEY WORDS

Landscape architecture
Garden laboratory
Artist's studio
Landscape change
Plant growth
Roberto Burle Marx

Gardening is a process of trial and error, where the gardener learns what will and will not grow and cultivates plants to achieve the garden as a whole that they desire. While this trial-and-error process is undoubtedly one of testing, does the fact that tests occur in the garden make it a 'laboratory'?

The subject of this special edition of *Landscape Review*, entitled 'Gardens as Laboratories', deserves careful consideration because it brings into question what the garden is and what happens there. Using Brazilian landscape architect Roberto Burle Marx's own garden (figure 1) as a case study, this paper asks, if a laboratory is 'a room or building equipped for scientific experiments, research or teaching', does the phrase 'garden as laboratory' accurately describe how the garden operates as a creative space? If it does not, what would be a more appropriate description?

Roberto Burle Marx used his garden (now called the Sitio Roberto Burle Marx) to test plants for later use in professional projects. Burle Marx and his brother bought the 80-hectare property just outside Rio de Janeiro, in Brazil, in 1949, and Burle Marx lived there from 1974 until his death in 1994.[1] He gifted the property to what is now the Brazilian Institute of National Historic and Artistic Heritage (IPHAN) in 1984, then 40 hectares in size. The Sitio is regarded as one of the world's most significant individual collections of plants, particularly the families of Araceae, Bromeliaceae, Cycadaceae, Heliconiaceae, Marantaceae, Arecaceae and Velloziaceae, which are grown in both the garden and a 1.4-hectare shade house (figure 2).

REFLECTION

Figure 1: An important feature of the Sitio Roberto Burle Marx is the pond, arranged on site by Burle Marx with plants he collected. (Photo: author's own.)

Calling it a 'landscape laboratory', Roberio Dias, Professor of Landscape Architecture at the Federal University of Rio de Janeiro and director of the Sitio from 1995–2011, quotes Burle Marx in an essay he wrote while director: 'this site [the Sitio] is the source of my experience in landscape architecture' (Dias, 2008).[2]

Dias's 2008 essay is the most comprehensive and detailed account of the Sitio, essentially a response to an argument he was having as director with the managing agency, IPHAN, concerning the nature of the Sitio. There is more to this disagreement than there might seem on the surface. Some of the argument was about provenance, whether the plants were endemic or not. Other parts concerned the 'look' of the Sitio, whether it did or did not look like other Burle Marx projects. Still others concerned whether Burle Marx himself was actually involved. All of the debate was about change.

Instrumental in suggesting that the site be preserved, Dias was clear that the Sitio was not a museum but a place of experimentation and learning, as suggested in the quote from Burle Marx above. For Dias, this meant that, quixotically, to preserve it was to allow it to continue to change. In contrast, IPHAN sought to leave it as close as possible to how it looked when Burle Marx died. This was largely because of protestations from gardeners who continued to work there and who claimed Dias was changing the site too much according to his own intentions. To this, Dias, who had worked with Burle Marx and talked with him extensively, argues that he did 'things how Burle Marx did them' (R Dias, 2015, pers comm).

In effect, Dias is arguing that the Sitio is a process or type of practice rather than a product, its physical condition simply the result of the tests that were undertaken, many of which, according to him, have failed.

The Sitio is a logical case study to use to answer the research question because Dias has called it a laboratory, and his essay is one of few that deal explicitly with this idea. In this paper, I argue with Dias in depth and from this propose that studio is a better way of thinking of and describing how the Sitio was used by Burle Marx and, more generally, as a model for the garden as a creative, testing space.[3]

Although Burle Marx is now called a landscape architect, his practice arose from a conjunction of his two real vocations: gardener and artist. I have used this bifurcation to consider the question of the garden as laboratory and to structure this paper.

If we think of the gardener as a scientist, then the garden might seem to be a laboratory. In the first section of this paper, I examine Dias's polarising of science and aesthetics and look at the role of subjective judgement in plant choices compared with assumptions about botanical performance testing.

After demonstrating that Burle Marx's choices were more like a 'plantsman' than a botanist, I propose that if we think of the garden itself as a work of art, then the gardener is as much an artist as a scientist. This renders the garden more like the artist's studio than the laboratory, because it reframes what the tests conducted in the garden are. In considering the garden as a moving work of art, I also propose a way of thinking about plant change in the garden.

Garden as laboratory

The laboratory is a space for scientific experiments. Epistemologically, this inherently ties the definition of the laboratory to notions of objectivity and a particular experimental model that keeps the personal judgement of the experimenter from interfering in the results. I then explore the Burle Marx experimental model at the Sitio according to Dias's description of it as a garden and laboratory. In his essay, Dias is quick to distance Burle Marx's experimental model from the aesthetic characteristics of the plantings for which he is best known. I demonstrate, however, that this separation is impossible and that Burle Marx's plantings, despite being botanical and thereby having a scientific aspect, were always also aesthetic.

When I talk about aesthetics, I am referring to what Yuriko Saito (2001) calls 'everyday aesthetics'. This involves appreciating, via aesthetic experience, the qualities of plants and making judgements about such qualities in their selection and manipulation according to the taste of the gardener, who in this instance is Roberto Burle Marx. While historically aesthetics are tied to the philosophy of art and the idea of beauty, I am not exercising my own taste, only proposing a relationship exists between plant qualities that arise from growth and a gardener's judgement about them. I am in agreement with Yuriko Saito (2001, p 25), who argues in 'Everyday Aesthetics' that treating fine art as the only subject of aesthetics 'unduly limits the range of aesthetic issues by implying that only those related to [fine] art are worthwhile for theoretical analysis'.

According to Dias (2008), for Burle Marx, the process of learning at the 'laboratory' of the Sitio comprised two stages: *getting* the plants and then *using* them.[4] The getting process involved collecting plants on botanical trips that Burle Marx undertook throughout Brazil. Landscape architect Oscar Bressane was a participant in expeditions in the late 1970s, including one for over a month in the Amazon (O Bressane, 2014, pers comm). Both he and Dias discuss how everyone on these trips had particular roles, Bressane's being, he says, 'a spotter', because he could see plants of certain types from a distance (O Bressane, 2014, pers comm). Part of the getting stage was for Burle Marx to vet the plant at the point of collection because, Dias says, he had a good eye for what would survive and Dias estimates that over 90 percent of plants collected did.

Because many of the plants Burle Marx collected (which Dias calls 'trophies' of his travels) were not even known to science and 'were not accompanied by instructions, it was necessary to find out how to keep them alive and see how they behaved outside of their habitat over a reasonable time' (Dias, 2008).[5] This was the 'using' process. Bressane says Burle Marx would 'put a plant in the shade and also in the sun, in the wet and also the dry, to test what would grow', noting that plants they collected in the Amazon changed characteristics when moved

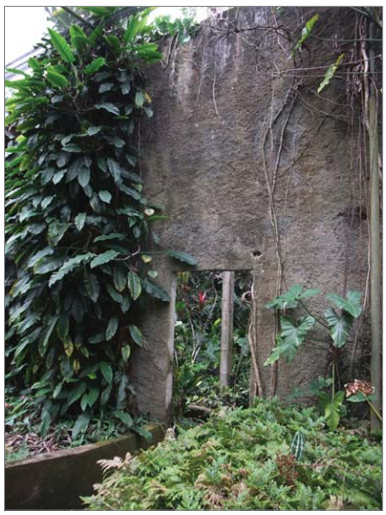

Figure 2: The 1.4-hectare shade house at the Sitio where plants that had been 'gotten' on Burle Marx's expeditions were acclimatised before they were 'used' in tests in the garden. (Photo: author's own.)

Figure 3: An example from the Sitio of one of Burle Marx's characteristic 'aesthetic compositions'. (Photos: author's own.)

from their native ecologies (O Bressane, 2014, pers comm). Here Burle Marx was developing ways of working with plants that he could use in his own professional practice, including acclimatisation, maintenance and propagation. In the final stages of 'using', after the plant performance research, 'aesthetic compositions were finally tested' (Dias, 2008) (figure 3).[6]

Dias's description of the Sitio as 'a high quality generator of experimental knowledge' rather than as a 'museum for the purpose of exhibition' alludes to a scientism that renders Burle Marx's plant selections empirical, transforming Burle Marx from gardener to botanist, from artist to scientist. This interest in science is supported by both his experimental model in the Sitio and his botanical and patriotic interest in Brazilian native plants. Dias and others are keen to detach this interest from his aesthetic language, making it a serious concern, botanical rather than aesthetic, so that his plantings are not tropical but indigenous and they just happen to look tropical because that was the nature of the environment (Murray, 2006).[7] Stepan (2001, p 208), however, argues that Burle Marx was a '"tropicalist" – that is … someone concerned and knowledgeable about tropical nature'.

A by-product of Burle Marx's enthusiasm for testing native plants is, Dias (2008) says, that 'the collection started invading the gardens' because the plants had not had enough 'vegetal probation'.[8] Dias bemoans that legislation for protection of native species now protects native plants Burle Marx may have collected and been testing even though the test may have turned out to be unsuccessful, possibly resulting in the plant's removal if Burle Marx were now alive to judge it (Marken, 2013).[9] Watching the Sitio turn into 'a chaotic mess', Dias (2008) introduces another maxim of Burle Marx: 'A garden is nature ordered by man, for man',[10] asserting that Burle Marx would have taken a much more interventionist approach (figure 4).

This quote from Burle Marx demonstrates an intervention of judgement into an experimental process that is patently unscientific: even though the plant performs (passes its 'test'), it has some other quality, perhaps aesthetic, that he chooses to emphasise in his desire to order it. This judgement demonstrates Burle Marx's disinterestedness in the outcome of the experiment in botanical terms. About this green-wall designer and botanist Patrick Blanc is emphatic: 'You have to forget the term "botanist" as far as he's [Burle Marx is] concerned … he was what could be called a "plantsman"' (Rambert, 2011, p 287). The plantsman collects plants on the basis of their subjective likes and dislikes. As such, it is no surprise that Burle Marx would abandon a plant experiment if necessary for the sake of the garden as a whole, rather than seeing it through to its full development.

Because Burle Marx's work was synthetic, combining 'artistic modernism and nature in a very tangible way' (Stepan, 2001, p 220), I argue that, in this testing process, he would not 'get' a plant he did not want for his garden in an aesthetic sense and would not experiment with 'using' it if it had not met some design criteria or possibility in his mind. It is impossible to separate the test of a plant's empirical ability to survive from its aesthetic qualities because it is through survival and growth that it gains its aesthetic qualities. As such, it is not surprising that it was only after the performance tests that Burle Marx examined its aesthetic qualities, because there is no point considering aesthetically a plant that cannot survive. Correspondingly, it is also disingenuous of Dias (2008) to separate the biological performance of the plant from its use in the garden as an aesthetic whole. The wilfulness of the gardener in relation to the plant is characteristically disinterested in a way that Ferrari (2010) calls political, because the gardener is only interested in plant performance if it does the right thing for the overall garden's design; otherwise it is removed. The scientist, on the other hand, would persevere regardless.

Figure 4: The transition from the garden edge to the forest shows how the collection in the garden has metamorphosed into forest. (Photos: author's own.)

This brings into question what the tests are: are they for plants or is the garden a test? Presumably both, given each plant is a test and the site holds all the tests. Theoretically, this does not disturb the model of the conventional laboratory because each plant can be an autonomous experiment simply located in the same space of the laboratory.[11] However, a garden is an ecological milieu, where plants interact with their environment and each other. Consequently, any plant or test is a factor in understanding any other plant in its sphere of influence. Therefore, I would argue the ecology of the laboratory is a threat to any idea of experimental rigour, because tests interact, making it impossible for any test, or its results, to be autonomous.[12] This challenges spatial and temporal ideas of how a laboratory works and shows that the analogy of the garden as a laboratory is not a neat fit. If we consider that the Sitio as a garden is both the physical location of the individual tests, the plants, and the result of the tests as it changes dynamically through the interaction of all the tests, we can see this gives the garden a unique and exciting status, unlike, for example, a conventional laboratory, which is just the container for the processes and their artefacts.

Dias (2008) suggests the garden's true nature is hidden from visitors who do not realise it was used by Burle Marx for 'experimental reasons' but who are party to its testing process: 'People are generally stunned by the beauty of the gardens surrounding them, but may be surprised to discover these vegetal symphonies were only provisional tests'.[13] Even a major author on Burle Marx, Sima Eliovson (1991, p 96), does not mention in her review of the Sitio that the garden is a place of testing; only that Burle Marx was a plant collector and the formal house landscape 'blended imperceptibly into the luxuriant vegetation around it', the testing space itself. By making the distinction between process and product, Dias is separating the plants' performance in tests from their contribution to the garden as an aesthetic whole, emphasising science over aesthetics. When Dias suggests the random visitor to the Sitio would not know the garden was an experiment, he is suggesting that it does not look like what was being done there – that is, the experiment and its outcome – was somehow different, and that 'the work triggered by Burle Marx is more than a product' (Dias, 2008).[14]

If we substitute 'artefact' ('something observed in a scientific investigation or experiment that is not naturally present but occurs as a result of the preparative or investigative procedure' – *Oxford English Dictionary*) for Dias' term 'product', we see how vital some form of outcome is to an experimental process. The product, like the process, is vital, because it provides the proof for any hypothesis. Perhaps Dias is acknowledging this and, when he says the garden is 'more' than a product, perhaps he is really saying it is 'not only' a product.

Ultimately, I would argue the Sitio is not a laboratory because it is affected by the tests that happen in it, which is not possible in the kind of laboratories of science that the term is inherently tied to. Instead the outcome of the experiment is the experiment itself.

If the Sitio is not a work of art, a botanical garden, a natural area or monument to Burle Marx or, further, if Burle Marx was not really a scientist conducting laboratory experiments in an empirical sense, but nonetheless learnt everything he needed to know from the site, then what is the Sitio?

Vegetal studio

The Sitio will always be a product and an experiment, recursively interacting in complex ways, because Burle Marx used science to guide unusual aesthetic outcomes through gardening in his vegetal studio. The studio is the place where an artist or designer works. The user's activity in a space is the determinant used to identify it: a cook works in a kitchen, an artist works on art in a studio. Therefore, the question of whether the Sitio is a laboratory or a studio hinges on what Burle Marx did there. In the section above I have demonstrated that even though Burle Marx was mobilising science to grow plants, his ultimate decisions about whether or not to use plants were aesthetic ones. In this section I look at how the garden is really a workshop or studio and then, building on the idea that the plant tests are in different stages and interacting, how the garden as a moving work of art transcends existing planting design categories.

If we accept the idea that the whole garden is a test then it is an enormously complex one, where the terms of reference are unclear and more subjective and individual judgement becomes important. In this sense, the site is more like an artist's studio than a laboratory, though I do not mean to romanticise the studio. In a studio, tests are undertaken to develop a work through trial and error, a process of fine-tuning subjective judgement rather than the pursuit of an essentialist, scientific truth as in the laboratory.

As well as calling the Sitio a laboratory, in his essay, Dias (2008) calls it a workshop. I would argue the latter is a better description than laboratory because it alludes to trial and error and the iterative process common in both the artist's studio and the garden. While I prefer the term workshop to laboratory, Latour and Woolgar (1986, p 236) argue the objectivity of the laboratory is not nearly as clear as science pretends and that knowledge in the laboratory is 'construct[ed through] slow, practical craftwork by which inscriptions are superimposed and accounts backed up and dismissed'. This emphasis on craft suggests the Sitio is a workshop of practices, as a studio is for the artist.

That Burle Marx regarded the Sitio as a workshop of change is evident when Dias (2008) notes that, at the Sitio, unlike in many of Burle Marx's other gardens, 'even in the most elaborately landscaped areas (such as characteristic plantings juxtaposing plant textures and colours, for example), he did not consider plant compositions as completed artworks'.[15]

This perspective is reminiscent of the way an artist works in their studio. Describing the studio, Buren (1979, p 53) says it is 'a private place ... presided over by the artist–resident, since only that work which he desires and allows to leave his studio will do so'. If one is allowed into an artist's studio, their private working space, one can see the process-work produced, provisional tests and half-completed artworks all together and not yet presented how they would be when in the art gallery. Because of the transition from private garden to public museum, Burle Marx's explorations are visible in a way, or rather at a rate, he might not have allowed in a professional project.

While Dias (2008) dismissively refers to 'landscaped areas' and 'plant compositions' in his description of Burle Marx's other projects, he calls the plantings at the Sitio 'vegetal symphonies'; my term for the latter is 'landscape symphonies' (Raxworthy, 2003). Perhaps the planting compositions Burle Marx

undertook in professional practice were complete for him because his work was representational rather than direct, as it was in his 'workshop' where he made decisions at eye level and in an iterative process over time. In the artist's studio, like the gardener but unlike the landscape architect, the artist is operating directly and non-representationally with their work.

With the artist, Burle Marx, now dead, perhaps the question is really what the studio looks like from the outside, without knowing what is being tested and at what stage such tests are. As Dias (2008) sees it, harsh judgement is required for the failed tests, which must go because 'the remains of the tests that did not work are like the scribbling of their children that proud parents regard as masterpieces, foisting them on strangers'.[16] Within the private studio, these tests would not be seen but, now the Sitio is a public garden, they are.

I would still argue, however, that, autonomous of intention, author or process, the garden test remains a thing in the world with its own particular aesthetic qualities that have arisen from the process but nonetheless stand in their own right. However, even as they stand in their own right, they are still a record of the process. Consequently, while the visitor might not know about the test, I would argue they do see something of it in its outcome that they would not have seen if the process had not occurred. In the garden, the visitor takes it as they find it at that moment, without expecting a clear explanation but liking it or not for what it is rather than what it means.

The ephemeral, real-time nature of the 'vegetal symphony' in the garden makes it closer to the performance of music, perhaps by John Cage, which can also be described aesthetically, than to an art object that is a linear accumulation but does not change on its own. Rather than all the instruments – the plants – being composed at once, things are added that have to build on what is already happening and they affect each other, as I described in the previous section. As well as being a different type of laboratory or studio, as I have suggested, the garden and the art work produced in it are very different, composed as it were by 'lives', the lives of plants, as Ferrari (2010) says. As a living entity, the real materiality of a plant is growth, which is why Burle Marx's work is so striking, because he seems to do such contrived things with plants, things that speak not of growth as naturalness but of artificiality.

Although any quality a plant has arises from growth over time, planting design tends to adopt a static painterly model, focusing on 'plant selection' and the qualities of colour, texture, form and flowering cycles (Austin, 2002; Hackett, 1979; Robinson, 2004; Wöhrle and Wöhrle, 2008). Burle Marx is considered one of the greatest planting designers and regarded highly for how he worked with 'mass planting', 'architectural plants' and 'colour contrasts'. In conventional planting design texts, seasonality tends to be the only aspect that takes into consideration that plants grow over time; all the other criteria rely on ongoing maintenance activities to retain the desired effects. At the Rio de Janeiro Museum of Modern Art, Burle Marx made a striking pattern in the lawn out of grass, where a tight, wave-like motif had alternating green and yellow species (figure 5); however, when I visited only a slight ghosting was visible within the otherwise uniform turf (figure 6). This shows the planting design criterion of 'colour', in this instance, requires constant maintenance to weed out the more vigorous green species from the variegated yellow one.

Figure 5: The patterned lawn outside the Museum of Modern Art in Rio de Janeiro before 1990. (Photo: Sima Eliovson.)

This maintenance approach is quite different from that which Burle Marx used at the Sitio. Having united the product of the test and the space of testing itself at the Sitio, Burle Marx's 'vegetal symphonies' show characteristics that make the garden, and gardens generally, a moving work of art because of the particular relation to time as process, growth and result, and plant form.

Certain plants in the Sitio seemed fine for many years and only later began to develop new, useful, frail or sometimes disturbing characteristics. Discussing what he calls 'the time factor', Dias (2008) notes that with plants in the Sitio 'experiments are untimed'.[17] He suggests the tests in the Sitio are ongoing because many species collected have not been tested (for example, they are still in the greenhouses) or are not yet developed enough for the outcome of the test to be evident. Further, some that are being tested are at different stages individually and in relation to each other.

If we refuse to separate the performative from the aesthetic characteristics of a plant, we then have an account of plants that values them as relational artefacts at every moment of their growth. If each plant is untimed in terms of the overall duration of the experiment, as Dias asserts, it is nonetheless still at a particular stage in its growth, whether juvenile or senescent, or at any other qualitatively different stage in between. Because, as I have been arguing, a garden as a whole is an experiment where each plant test interacts with every other, each plant's different growth conditions are also juxtaposed against each other. If we consider the garden as a moving work of art, then individual elements interact in dynamic ways, changing the work not just by degree, where plants get uniformly larger, but in kind, as Deleuze (1991) would say, where the work is completely different over time.

Figure 6: The lawn at the Museum of Modern Art in Rio de Janeiro, showing the previous pattern only ghosted among the different grasses, which have grown into each other. (Photos: author's own.)

This means a plant's ecological role and effects when it is young will be different from those when it is mature, as will its aesthetic or formal characteristics, both on its own and in relation to its neighbours with which it forms a 'composition'. To use a tropical example, the juvenile leaves of many rainforest species are red when the tree is perhaps only 1 metre high, when it will have the appearance of a sparse shrub. These leaves might be the only colour below the canopy. However, when a hole in the canopy opens, perhaps by design through the removal of a tree, the plant may shoot up to occupy it, changing from a shrub to a tree. This interlocking and blurring of form and time relationships ensures that, as Ferrari (2010, p 35) argues, 'as aesthetic arts go, gardening is messy [because it] is fraught with unpredictability, and its work is never complete'.

The idea of planting design compositions as uncompleted artworks is interesting and useful, and an apt description of what the gardener does. At any given moment, the gardener makes an aesthetic decision about the artwork as they fine-tune it, which in turn affects how the artwork is when they next intervene in it. Rather than being labelled incomplete, these compositions should be described as evolving. That these compositions were artworks is undeniable; however, these vegetal artworks redefine what an artwork is when it is not about completion, where art is an ongoing, evolving process.

Conclusion

The Sitio Burle Marx is an exemplary source to look at when considering whether the garden can be a place of experimentation, as Dias (2008) rightly points out. His definition of it as a 'laboratory', however, is incorrect because it is a creative space: even though testing occurs there, it is as material for landscape design.

While not part of what I call 'the process discourse' – the quasi-scientific discourse in architecture and landscape architecture that focuses on processes of change – Dias's 2008 essay exhibits the same scientism. Like the process

discourse, it is an attempt at objectivity by valuing the allegedly objective testing process but not the subjective qualities of its result, despite these qualities being the ultimate rationale for conducting the tests in the first place.

As a creative space, the Sitio is more like an artist's studio, but one where the artworks in progress interact and influence each other, given the plant material is growing. This redefines what a work of art might be as well as what a studio is. As part of the process of considering the garden as a living work of art, the Sitio provides an example of a new language for planting design that moves it from the painterly to one based on qualities emerging from growth.

NOTES

1 I visited Sitio Roberto Burle Marx on 27 November 2010 and again on 1 April 2015 and documented my visit photographically. Some of my photographs can be viewed on my Flickr feed: www.flickr.com/photos/julian_raxworthy/sets/72157648484783738/.

2 ('O Sítio é meu lugar de experiências em paisagismo.') All quotes from this essay on Dias's webpage are my own translation and have been checked with the author. I have included the original text from Dias's website in subsequent notes, in case the reader wishes to check my translations.

3 While I argue with Dias, I do so to develop an argument about the garden rather than to dispute his account of the Sitio, which is the most comprehensive account available. Additionally, Dias was generous in his correspondence with me as well as his time when we met in Rio de Janeiro. I would like to acknowledge his contribution to this essay and thank him for his help.

4 'Podemos dividir, então, as ditas experiências em dois grupos básicos: as de ter e as de usar.'

5 'Como seus troféus – plantas em sua maioria inéditas em paisagismo, algumas até para a ciência – não vinham acompanhados de manual de instruções, era necessário descobrir o modo de mantê-las vivas e como se comportariam fora de seu habitat ao longo de um tempo razoável.'

6 'Composições estéticas eram, enfim, ensaiadas.'

7 Speaking about Burle Marx's 'tropical aesthetic', Sally-Ann Murray describes how, during his visit to South Africa in the 1960s, gardeners in the tropical city of Durban styled their gardens using tropical plants from Brazil and biomorphic forms in his honour, but Burle Marx was more interested in the indigenous plants of South Africa, which he suggested they focus on.

8 'Muito pelo contrário, é como se a coleção de plantas estivesse invadindo os jardins. Iniciava-se então, com copiosa diversidade e indeterminada duração, um, digamos assim, estágio probatório vegetal.'

9 Commenting on the importance of removal as a gardening strategy, in Marken (2013), Raymond Jungles 'quotes Burle Marx about maintenance in the tropics: "In the tropics, garden maintenance is what you take out"'.

10 'O jardim é a natureza ordenada pelo homem e para o homem.'

11 This is essentially what an arboretum aims to be.

12 It is from this kind of realisation that the laws of thermodynamics arose.

13 'As pessoas, de maneira geral, aturdidas com a beleza dos jardins que as envolvia, não estavam propensas a acreditar que aquilo tudo, aquelas verdadeiras sinfonias vegetais fossem apenas ensaio, rascunho, teste.'

14 'O trabalho desencadeado por RBM é, mais do que um produt.'

15 '...[M]esmo nas áreas mais elaboradas paisagisticamente, ele não considerava as composições vegetais como obra de arte finalizada, diferentemente dos demais jardins que projetou.'

16 'Manter folcloricamente, perante estudiosos de paisagismo do mundo todo, os restos mortais de experiências que não deram certo é semelhante à atitude de pais que impingem como obras primas quaisquer rabiscos dos filhos.'

17 'As experiências que tiveram, e têm, ocorrência ali também precisam ser mais bem compreendidas, pois diferem formalmente das praticadas em outras atividades, principalmente quanto ao fator tempo: são experiências de duração indeterminada, que podem levar décadas e, muitas vezes, depois de aparentemente fornecer certos resultados, apresenta outros, contrários aos primeiros.'

REFERENCES

Austin, RL (2002) *Elements of Planting Design*, New York: John Wiley & Sons.

Buren, D (1979) (Translated by T Repensek) The Function of the Studio, *October* 10, pp 51–58.

Deleuze, G (1991) *Bergsonism*, New York: Zone Books.

Dias, R (2008) *O Sítio Santo Antônio da Bica: um laboratório paisagístico*. Accessed 20 October 2014, http://escritosnapaisagem.blogspot.com/2009/11/o-sitio-santo-antonio-da-bica-um.html.

Eliovson, S (1991) *The Gardens of Roberto Burle Marx*, London: Thames & Hudson.

Ferrari, GRF (2010) The Meaninglessness of Gardens, *The Journal of Aesthetics and Art Criticism* 68(1), pp 33–45.

Hackett, B (1979) *Planting Design*, London: E & FN Spon.

Latour, B and Woolgar, S (1986) *Laboratory Life: The Construction of Scientific Facts*, New Jersey: Princeton University Press.

Marken, B (2013) Tropic of Jungles, *Landscape Architecture Magazine* 67, pp 56–67.

Murray, SA (2006) The Idea of Gardening: Plants, Bewilderment, and Indigenous Identity in South Africa, *English in Africa* 33, pp 45–65.

Rambert, F (2011) In Praise of a Plant Amateur: Interview to Patrick Blanc. In *Roberto Burle Marx: The Modernity of Landscape*, L Cavalcanti, F El-Dahdah and F Rambert (eds), Barcelona: Actar.

Raxworthy, J (2003) 'Landscape Symphonies': Gardening as a Source of Landscape Architectural Practice, Engaged with Change. Paper presented at PROGRESS: The 20th annual conference of SAHANZ, University of Sydney, 2–5 October.

Robinson, N (2004) *The Planting Design Handbook*, Aldershot: Ashgate Publishing.

Saito, Y (2001) Everyday Aesthetics, *Philosophy and Literature* 25(1), pp 87–95.

Stepan, NL (2001) *Picturing Tropical Nature*, London: Reaktion Books.

Wöhrle, RE and Wöhrle, HJ (2008) *Basics: Designing with Plants*, Basel: Birkhäuser.

Deb Reynolds' Garden: Restoring the Unknown

ADRIAN MARSHALL

In 1992, as a young nurse, Deborah Reynolds moved to the then edge of Melbourne with her partner and built what was only the third house in her street. She began to plant a garden: lobelias, peonies, sweet alison, pretty alternations of red and white; an Anzac banksia, a *Darwinia meeboldii* with stunning black flowers, *Scaevola*, geraniums, kangaroo paws, the butterfly iris that everyone used to plant (*Dietes* sp.), *Lomandra*, *Rhodanthe*, violas and daisies. She created formal paths and island beds. It was a conventional garden in front of a standard house, with its driveway and garage, on a typical suburban street in a new estate on the city fringe.

Then Deb started going for walks. At the end of her street was a grassland. There she spotted unusual flowers so she bought a book to identify them. Some were rare, some were very rare; amongst them was the critically endangered species *Pimelea spinescens*. As one thing led to another, Deb acquired specialist understanding of grasslands, a doctorate and a whole new way of gardening.

You do not need a house number to know Deb Reynolds' place now. Her garden stands out, or spills out, into the street. The nature strip has been colonised by a dozen species of grasses: *Themeda triandra*, *Rytidosperma* spp., *Dichelachne crinita*, *Carex tasmanica* ... and *Einadia nutans* spreads down the kerb. There is a lot of lignum. A native flax-lily has set abundant seed. The *Helichrysum* has woven itself into a mat. A *Pycnosorus* survives under the grasses. There is *Pimelea glauca*, the more common cousin of *Pimelea spinescens*. Many other plants are also growing, including *Calytrix tetragona*, *Crowea exalata*, *Calocephalus lacteus*, *Eutaxia microphylla*, *Senecio quadridentatus*, *Caesia calliantha*, *Grevillea rosmarinifolia*, *Pelargonium australe*; trees such as eucalyptus, *Casuarina*, wattles and Western Australian *Hakea*; and difficult-to-grow plants like *Galium tricornutum* ... It is not a large space, a standard double-fronted block. Deb has grown much of her garden from seed she has collected or purchased from specialist nurseries. It is all messy, in that quintessentially Australian way.

The grasslands of the Victorian Volcanic Plain once stretched from Melbourne to Portland on the South Australian border. We can only imagine their vast and uninterrupted sweep from the little that remains. Until 40 years ago, we did not even know we had wiped out 98 percent of them – Australia may have ridden on the sheep's back, but the grasslands died under their hooves. The few good fragments that remain can be incredibly biodiverse: from the kangaroo grass tussocks to a rich variety of herbs, lilies, orchids, creepers, lichens and the like. *Pimelea spinescens* is one of these plants of the Victorian Volcanic Plain. Because

Adrian Marshall is a landscape architect and PhD candidate at the University of Melbourne, investigating the role of road verges in supporting urban biodiversity.
Telephone: +61–0413–757–173
Email: adrianjohnmarshall@gmail.com

KEY WORDS

Grassland
Indigenous
Garden
Ecology
Urban

REPORT

Figure 1: Photo montage of Deb Reynold's garden. (Image: Author's own.)

of its critically endangered status, it is protected by federal legislation. If you are lucky enough to come across one, spotting it in winter when it is in flower, you may well see it has been tagged and numbered, or if in summer, it may be netted with a stocking to collect its precious seed: that is the work of Deb Reynolds, who is now the pimelea officer for Trust for Nature.

Deb's garden has followed her discovery of the grasslands of Melbourne's west.

The suite of species could make the garden an idiosyncratic collection, but collections are for museums, and Deb is a woman very much in the here and now who is creating something altogether more mysterious.

Grasslands are poorly understood; their complex ecology is only now beginning to be teased into knowledge. Deb Reynolds is a pioneer in this work. She understands that grasslands are a state of mind. They change the way you see. A brown paddock of weeds and snakes, a boring monoculture, transforms as you crouch and glimpse a host of species between the tussocks: the twining scramblers, the tiny daisies, the sundews catching their prey. You can observe the slightest depressions that bear their own communities, for instance, those in which lemon beauty heads grow. Pollinators are everywhere.

Deb observes it all. She sees that the ants in her garden have moved their nest. At dusk, she watches tiny blue-banded bees roost on the silky blue grass. Birds have eaten the *Einadia* berries and spread them round the garden through their droppings. Native wasps have used sand from the neighbour's place to make a nest in a corner of the veranda. She points out the hole of a spider. She traces her cat's favourite positions in the garden. "The cat likes that spot over there, and on hot days over there, and sometimes under the grasses there; it's like a bandicoot that way," she notes.

Other people have been encouraged to adopt her way of seeing the garden. The postie is trained to keep his motorbike away from the *Chrysocephalum*, and Deb has left a dirt track to the letterbox in exchange. Her garden is at the far end of the run-up for the cricket pitch made by the kids across the road. They prune while they play.

The garden does its own thing; that is the crux of the matter. Deb does not water. Plants find their place over generations. Self-seeded shrubs appear and all but one of the gums is a volunteer. The bluebells died out in one spot and recolonised in another. Everything is in motion. Occasionally, a viola or lobelia still appears, but now Deb considers them misplaced and pulls them out. The European garden is being replaced.

Grasslands, once disturbed, are vulnerable to weed invasion. Deb is not shy about putting the spray pack on and using herbicide. Each year, at dusk when it is not so noticeable, on a day with just a little breeze to fan the flames, she burns the grasses. She is treating the garden the way a grassland should be treated. Afterwards, she can see what is there, beneath the overgrowth.

Deb is learning through careful and close observation – she is *participating*. Processes are at work; she might be part of them, but her presence is not the essential element. She understands that every plant has a story, an ecology, a way of living that you have to watch to understand. You create what you love.

Even experts on grasslands rarely understand why a certain plant fails and another succeeds. We cannot name the fungi in the soil, we do not know the foods the insects eat, we do not even know how long a tussock of kangaroo grass might live: perhaps a few dozen years or maybe hundreds. Each *Pimelea spinescens* is a potentially ancient plant, diminutive on the surface but with a tap root like your arm, plunging deep into the heavy clay soils. Despite her familiarity with them, Deb has not managed to grow one yet in her own garden.

Deb's house is on land that was once grassland. Banchory Grove Reserve is the remnant at the end of the street. She regrets not salvaging the *Stackhousia* that grew there or at least collecting its seed. It has all gone, now that the grassland is in decline. *Extinction debt*, the ecologists call it, the consequences of our past actions that will inevitably unfold.

Grasslands are a state of mind. Deb's grassland garden poses an evolving question that does not require an answer.

Garden as Education: Learning the 'Old Ways' of Traditional Mediterranean Food Practices

FIONA HARRISSON

A former red-brick housing commission house in the bay-side suburbs of Melbourne has been transformed by Mark Dymiotis to replicate traditional village Mediterranean practices of his heritage. For many years, people have come into the garden through the Council of Adult Education and the Open Garden scheme to learn wine making and bread baking and other traditional Greek–Mediterranean everyday food practices. Mark draws on his own heritage and the knowledge of older people, the migrants who brought these practices to this land, about which he has been researching, writing and teaching for over 20 years. The garden is a platform for teaching about healthy and affordable everyday dietary practices.

Fiona Harrisson is Senior Lecturer in the Landscape Architecture Program, Faculty of Design and Social Context, RMIT University, Melbourne, Australia. She is also a gardener and design consultant on public projects and private gardens.
Email: fiona.harrisson@rmit.edu.au

KEY WORDS

Traditional Mediterranean practices
Adult education
Gardening

Mounted on the entrance to the backyard-cum-classroom are the words: 'Welcome to Simple Living: Environment's Only Serious Hope'. The hand-painted sign gives an inkling of the intended reach of this educational garden in the south-eastern suburbs of Melbourne, Australia. You would come here if you enrolled in a 'how to' course about baking sourdough bread, building a wood-fired oven or winemaking offered through the Council of Adult Education and run by the garden's owner, Mark Dymiotis. Scattered throughout the garden are instructive labels, and a large video screen is mounted in the kitchen. The small spaces easily accommodate classes of around 12 people and have also welcomed hundreds, when the garden was open for display during the Australian Open Garden Scheme, which regrettably closed in 2015. The backyard replicates a traditional Greek–Mediterranean garden, including with food production, winemaking, bread baking and other simple food practices. These were survival skills traditionally practised by villagers around the Mediterranean, the quiet master creators and practitioners of this diet. The garden is a platform for teaching people about healthy and affordable everyday dietary practices, and it is also used to advocate for the common-sense government policies that would enable such practices.

The genesis of the garden comes from Mark's Cypriot heritage – he grew up in the village of Agros (the name translates as 'field'). The garden draws on the wisdom embedded in his inherited knowledge. This wisdom is the basis of the garden school where 'old ways' are taught for these new times. Mark believes traditional village Mediterranean practices are highly sustainable and can easily be replicated in suburban gardens. He wants these practices to influence both policy makers and members of the public.

As I speak with him, I wonder what it is that makes his place feel so strongly Mediterranean. What is it exactly that has transported the red brick post-war Housing Commission house somewhere else? Heavy shutters keep the day's summer heat at bay. Dried gourds line the fence. Lemon trees, olives and grape

REPORT

vines are mixed with flowers and vegetables. Wild greens such as dandelion, chicory, thistle, amaranth and stinging nettle, elsewhere recognised as weeds, are encouraged to grow. As I move through the space, I realise the Mediterranean feeling is also evident in the organisation of the garden and house as a continuous series of interior and exterior rooms. The kitchen opens out to a wood-fired oven in a portico on one side of the house. The productive garden is on the other side. The vegetable garden is divided into three elevated platforms with a network of narrow, paved pathways to exclude foot traffic from the cultivated beds. Over these beds, an extensive pergola-like system of poles with netting keeps possums and birds at bay (figure 1). A free-standing sink in the garden is used to wash vegetables, and a gravity-feed system of pipes from three interconnected water tanks irrigates each bed. A Mediterranean cottage-style front garden features fruit trees as well as a culinary and medicinal herb collection planted and maintained by the Herb Society of Victoria.

The essential message is that the traditional everyday dietary practices of the Mediterranean culture are essential for human health and the environment, plus they are available to anyone with access to soil, especially to those on a low income. These dietary practices evolved naturally over the centuries yet have been lost in today's increasingly technologised world, which is becoming ever more removed from the simplicity of life. Mark says a lot of people confuse the rediscovery of old ways when they call them new ways. For him, sourdough is 'just bread'. Mark is also critical of the commercialisation of the garden industry where we are encouraged to buy bags of soil rather than work the soil we already have, or to purchase seedlings rather than grow and collect seed. We are not encouraged to value dandelion, chicory, thistle, amaranth and stinging nettles, which grow easily with little water and are delicious, either fresh or cooked and tossed with olive oil. 'Grandmother's greens', as they are known, are an important part of the traditional diet.

Figure 1: Montage of netted productive garden in Mark Dymiotis's Greek–Mediterranean backyard. (Photo: author's own.)

Such gardening practices offer an opportunity to grow good-quality fresh food for minimal cost. Sharing of produce also becomes a way of connecting to the local community. As part of building his knowledge base, Mark actively sought out Greek and Italian immigrants, expanding his network and knowledge of the old ways.

> As with other Greeks, when it came to food, I went for enjoyment. We never talked about healthy food, nutrients, celebrities or master chefs, and there were no food labels. Yet, as it turned out, we were practising the healthy Mediterranean diet. As with the rest of the Mediterranean people, our parents were the master creators and practitioners of this diet.

Melbourne shares a similar climate to parts of the Mediterranean and experiences the challenges that come from hot, dry summers, evaporation and water shortages. Mark offers alternative approaches to what is considered conventional wisdom today, such as the necessity for mulching. In Cyprus, gardeners cultivate the earth weekly to create a layer of soil with air rather than adding a separate layer of mulch. This method is more economical because it is not necessary to buy in additional materials. Mark says many current practices of gardening education tend towards superficiality. He reports that people ask what kind of soil they will need to import, rather than working with the soil in their gardens. In terms of garden watering, the current policy in Melbourne requires the use of nozzles that are as wasteful as the sprinkler they replaced. Water fed directly into furrows around vegetables and fruit trees eliminates evaporation and minimises water run-off. Mark has devised a simple technique to temper the water pressure by attaching a 'rug' or thick cloth to the end of the hose to prevent soil damage.

Mark is also a writer advocating for the value of Mediterranean food practices (Dymiotis, 2015) and an avid contributor to local government policy, because many gardeners feel the direct effects of local policies in their gardens. The daily restrictions on water use in gardens have seen old people restricting their cultivation of vegetables. Possums have also created a huge problem in Mark's productive garden, and his ongoing battle with the local wildlife caused him to consider stopping production completely. Instead, using his engineering background, he enclosed the vegetable beds and fruit trees in rooms of netting that extend the system of garden rooms across the backyard.

This humble suburban garden in the south-eastern suburbs of Melbourne is both a garden for pleasure and produce and a model from which others can learn. It is a crucible for collecting and disseminating the 'old ways' of immigrant Mediterranean communities that transported their local knowledge to a different but parallel climate on the other side of the world. Through this garden, these techniques and practices are shared far and wide to the broader community.

NOTE

Further information on Mark Dymiotis can be found at www.markdymiotis.com.

REFERENCE

Dymiotis, M (2015) Memories and Pleasure: Grandmother's Practices, *Food Studies: An Interdisciplinary Journal* 5(1), pp 19–30.

Putting Down Roots

GEORGIA JACOBS

Georgia Jacobs is a qualified social worker and works in community development in Melbourne, Australia. Email: georgiaannejacobs@gmail.com

KEY WORDS

Asylum seekers
Refugees
Gardening
Community gardens
Community development

Putting Down Roots was a pilot gardening programme for asylum seekers and other vulnerable migrants offered in 2012–13 through the Australian Red Cross Migration Support Program Victorian Division in Melbourne.[1] Run in partnership with the Melbourne-based Centre for Education and Research in Environmental Strategies (CERES) and Cultivating Community, the programme developed a unique approach to increasing the social and emotional wellbeing of participants through involving them in sustainable gardening training and by supporting them to grow an edible garden. For participants, Putting Down Roots proved to be more than just a way to learn about gardening in Australia. It was also an opportunity to cultivate self worth, gain meaning and find tranquillity during a time of great uncertainty and hardship. While the experience may have been temporary, during their involvement with Putting Down Roots, participants put aside their identity as asylum seekers and became gardeners.

Asylum seekers face significant barriers to accessing mainstream services and have limited opportunities for social and recreational engagement. At the time of the programme, many of the asylum seekers supported through the Australian Red Cross had no work or study rights or, in cases where they did, faced multiple barriers to gaining employment (Australian Red Cross, 2013). Putting Down Roots was developed in response to the need for more meaningful engagement activities for asylum seekers. The programme's development was also informed by research completed by the Australian Red Cross on the significant food insecurity of asylum seekers (Australian Red Cross, 2013), as well as the expressed interest in gardening and horticulture of a large number of asylum seeker clients. The impetus for delivering a gardening programme was also influenced by extensive research outlining the therapeutic benefit of gardening for those who have experienced trauma and psychological pain (Thompson et al, 2007).

Through Putting Down Roots, 25 asylum seekers and other vulnerable migrants from around the world came together to learn the fundamentals of gardening and growing food in Australia during an eight-week sustainable gardening course at CERES. Participants came to the programme with differing experiences of growing food, from farmers and a graduate with a masters degree in plant science, to those who were completely new to gardening. Participants came from all parts of the globe: Afghanistan, Pakistan, Ethiopia, Nigeria, Thailand, Sri Lanka, Iraq, Iran and Egypt. These differences contributed to the vibrant discussion on topics such as soils, farming practices, fruit, vegetables and climate.

Each participant was matched with a volunteer mentor, and worked with them and Cultivating Community to design and develop an edible garden either

REPORT

in their own home or, where that was not possible, in a community garden close to their home. Participants met with their volunteer mentor in their garden on a regular basis. The gardens became sites for connection and empowerment where stories, experience, lots of food and many cups of tea were shared.

While their claims for refugee status are being assessed, asylum seekers often face overwhelming uncertainty. The nature of their path is transient and, for many, these challenges are compounded by a history of torture, trauma and separation from family. For those involved in Putting Down Roots, establishing and tending their own garden provided a rare chance to temporarily put aside such challenges and arrive at a place of peace and tranquillity. As one participant, Aaran[2] reflects, 'Here in my garden I forget about what I went through in Sri Lanka, I forget about missing my family. I even forget about my difficulties now in Australia. Here I feel at peace.' For participants, this garden was a space in which they had the opportunity to carefully nurture their plants, and in turn they nurtured themselves. Maria, another participant, reflects, 'It is therapeutic. It's great for people like us, because you know I feel very alone and kind of isolated. I feel much calmer in myself, and to see the plants, to water them, to look at them growing; it is such a simple thing to do to make yourself feel good.'

Time in their gardens contributed to a sense of dignity for programme participants. It offered them a sense of purpose and a positive way to spend idle hours when many were living in limbo, far from family and friends. Sami, a beekeeper in his country of origin, was able to acquire a beehive for his garden through the programme. He began to regain mastery and skills unused since he fled his country. As Sami's confidence developed, he started volunteer work. Participants reflected that there was simple dignity in having a piece of earth to garden and being free to do what they liked with it. They could grow vegetables familiar from their country of origin, but rare to Australia, alongside vegetables common in Australia but new to them. Saeed, a young participant and new gardener, described how much he enjoyed sitting next to his garden, simply watching his tomato plants grow. They reminded him of happy times with his mother, an avid gardener. The gardeners also made unexpected discoveries, learning about the similarities and differences of the soils, crops and climate in Australia compared with those in their country of origin.

The relationships that participants developed with their volunteer mentors provided another avenue for connection and discovery that extended beyond gardening and horticulture. These relationships enabled participants to learn more about each other's culture and ways of life. The volunteer mentors also began to appreciate the challenging realities faced by those seeking asylum. Although each garden 'belonged' to the participant, it was through the company and support of their volunteer mentor, through learning from each other's techniques and by sharing the space that they experienced a genuine and mutual sense of friendship and gratitude. One volunteer mentor was adopted into an Afghani participant's family as their new Australian 'grandmother'. Sharing time in the garden could foster community cohesion and enhance levels of acceptance, belonging and trust for both participants and mentors.

For many of the asylum seeker participants in Putting Down Roots, their gardens became a refuge, affording an opportunity to develop meaning and dignity

from the complex and uncertain experience of seeking asylum in Australia. These sites told a layered story of the gardener's journey to Australia, through the food they grew and the thoughts and conversations the gardens provoked. They could bring participants fond memories of home or allow them to escape from their current reality. Participants from all over the world came together with volunteer mentors to share remarkably different life stories around a common interest in gardening. The understanding that developed helped bridge cultural, religious, gender and political divides. The gardens of Putting Down Roots not only grew food but also nourished self worth, fostered social capital and grew hope for what the future might bring.

Epilogue

While the gardens and some of the participant–mentor relationships continued growing, Putting Down Roots in Melbourne, Victoria, was unable to continue because of a lack of project funding. However, it inspired a programme of the same name offered through the Australian Red Cross Migration Support South Australian Division. Furthermore, since 2014, the Migration Support Program Victorian Division has been delivering a gardening programme called Hub Harvest. The programme works in partnership with local community gardens and asylum seeker organisations. Hub Harvest aims to promote food security and provide opportunities for learning and social interaction for asylum seekers and other vulnerable migrants in workshops that focus on urban agriculture, gardening and local food knowledge.

NOTES

1 The views expressed in this article are those of the author in her private capacity and do not in any way represent those of the Australian Red Cross or other organisations and individuals mentioned.

2 Names of all programme participants have been changed to ensure their confidentiality.

REFERENCES

Australian Red Cross (2013) *Inaugural Vulnerability Report: Inside the Process of Seeking Asylum in Australia*, Carlton, VIC: Australian Red Cross.

Thompson, S, Corkery, L and Judd, B (2007) *The Role of Community Gardens in Sustaining Healthy Communities*, Sydney, NSW: UNSW Faculty of the Built Environment.

Garden as Habitat: Knitting Habitat through Public and Private Land

LUCINDA MCLEAN

On some weekends, we stay at a small house in the coastal settlement of Somers, which is around 70 kilometres south-east of Melbourne, Australia. The house is just 75 square metres and situated within a third of an acre of garden (figure 1). We spend a lot of time in the garden, which for us is an important part of the place (figure 2). The property is part of a 1950s subdivision from a large piece of land that had never been fully cleared or heavily cultivated. The original owners built an Age Small Homes Service holiday house on the site in 1961.[1] The simple house sits within its informal, unfenced garden. From within the house, the garden fills the views through the windows, and to the north you can glimpse people walking along the quiet street through layers of different vegetation extending into the trees of surrounding properties.

Outside the house, the garden provides spaces for our children to play, which change as the children grow and the garden evolves. The garden is also shared with fauna such as a tawny frogmouth pair that have chosen the garden as their home since before we first came.

Visits to the house and garden start by our taking slow, careful, meandering walks to see what has grown, germinated, died, decomposed or spread, is in flower, has set seed, or has become the home or food for an insect or animal. When I bought the property in 2002, I discovered signs of remnant indigenous vegetation among the 1960s planting of native and exotic trees and the hosts of weeds. Since then, and for more than 10 years, I have focused on regenerating the land as an indigenous garden. I did not set out with the knowledge of how to do this, and the gardening project has been both more challenging and more rewarding than I ever imagined. It is a fine balance between discerning what to do and recognising what not to do; between allowing the garden to be and letting it become itself. The process is intrinsically linked to and influenced by what is beyond the garden so any work done within it feels like a contribution to the larger environment. The garden does not have a fixed design or an ideal image to achieve; it is an ongoing, interactive and dynamic process. Gardening here is immediately rewarding but also requires long, slow work. Over time, I have made an extensive plant list of the species I know to be present in the garden. Many different and changing phenomena can be observed at different times of the day or of the year. On each walk, I see special and unexpected things, and slowly I have learnt to see more. The plants tell the story of this garden.

Observing the ephemeral

Gardening starts with careful observation of the garden, of what grows in the surrounding area and along the coastal and bushland reserves. Yellow star

Lucinda McLean is an architect and PhD candidate, School of Architecture and Design, RMIT University, Melbourne, Australia.
Telephone: +61–3–9090–7880
Email: bm@nmbw.com.au

KEY WORDS
Bio-link
Indigenous flora and fauna
Gardening
Time

REPORT

(*Hypoxis vaginata*) (figure 3) and early Nancy (*Wurmbea dioica*) (figure 4) appear and flower for a short time in spring. It is a delight each time to find them. Because many plants are dormant for long periods of the year, it takes time and careful observation to learn what grows naturally in the garden through the seasons and to see what appears. Some plants emerge for only a short time; some fungus species for just a few days. Even plants that are present year-round may not be identifiable until they flower, and other plants bloom only briefly.

Patient scrutiny

On warm days in early summer if you wait and watch the soft, wafting flowering grasses – *Austrodanthonia geniculata* (kneed wallaby-grass) and *Austrodanthonia caespitosa* (common wallaby-grass) – you will see the rhythmic flight of butterflies aloft and visible (figure 5). Then they alight and are immediately disguised. The grasses are important food plants for caterpillars, while the flowers of pimelea, bursaria, banksia and eucalyptus provide nectar for the butterflies.

The exquisite beauty of the detail of the grass flower is not visible to the naked eye and can only be seen with a hand lens. Grasses evolved comparatively recently and the flowers use the wind for pollination. As a result, there are no showy petals to attract bees; instead, the stigma of each flower is a beautiful, delicate, branching structure that catches the pollen blown from the anthers as they wave gently on their slender filament in even the slightest breeze.

Twenty-three species of *Austrodanthonia* exist in Victoria, and the two growing in this garden are very dissimilar; the stalk bearing the flowers of *A. geniculata* is only 20–40 millimetres high and the flowering stalk of *A. caespitosa* is usually about 70 millimetres high. Grass species are identified through the variation in the minute detail of their flowers. Using a hand lens, you can see the seed body of *A. geniculata* is covered with hairs while the hairs on the seed body of *A. caespitosa* are in three neat, horizontal rows.

Figure 1: Residence within the indigenous bush garden. (Photo: Fiona Harrisson.)

Figure 2: Somers garden. (Photo: author's own.)

Figures 3 (left) and 4 (right): Yellow star (Hypoxis vaginata) *and early Nancy* (Wurmbea dioica). *(Photos: author's own.)*

The vegetation class 'grassy woodland' is one of the most threatened in Australia, because it is easily colonised by people and weeds. Indigenous grasses, a major species of this vegetation class, are generally neglected as a garden species because they are not easily appreciated. Such appreciation comes through reading about them in books, from seeing the habitat and food they provide, and by looking at the small-scale detail of the plant.

Respecting complexity

The sun orchid (*Thelymitra pauciflora*) (figure 6) is so-named because its flowers only open in hot sunny weather. Because we normally visit Somers on weekends we do not always see the open orchid flowers, despite the many buds we may observe.

Orchids are a special plant in an indigenous garden. They are sensitive to soil disturbance and cannot be easily propagated and planted, so they usually exist as remnant vegetation where the ground has not been cultivated. They live in a symbiotic relationship with a soil fungus and can only be transplanted if the soil they are growing in is also included.

Land clearance is the most serious threat to biodiversity. Within a square metre of rich biodiversity, hundreds of species of plants and micro-organisms can exist. The complexity of plant systems, such as the association between the mycorrhizal fungi and orchids, cannot be seen. Once land is cleared, it is almost impossible to restore pre-disturbance levels of biodiversity.

Welcoming wildlife

After 10 years of gardening, I was thrilled to finally see small birds in the garden. We now have regular visits from small groups of white-browed scrubwrens and eastern spinebills.

Hedge wattle (*Acacia paradoxa*) is a dense, prickly bush that protects small birds from larger birds and other animals. I planted acacias, along with other shrubs, in areas of this unfenced garden, hoping to contribute to a biological corridor that would allow for the movement of small birds through the larger

Figures 5 (left) and 6 (right): Kneed wallaby-grass (Austrodanthonia geniculata) *and sun orchid* (Thelymitra pauciflora). *(Photo: author's own.)*

environment. Smaller bird species, such as wrens, can be seen in the nearby foreshore reserve, which has dense vegetation that offers protection. The wildlife corridor along the coast is effective but requires sufficient cover in the adjoining private properties for the birds to venture far inland.

To strengthen biodiversity, we need to take a multi-scale approach, from small-scale lot regeneration to large-scale biological links, maintaining genetic, species and ecosystem diversity. Connected wildlife corridors are essential for preserving species' strength by allowing a wide variety of fauna to move through different ecosystems. Important diverse wildlife corridors, both potential and existing, could or do provide links across the Mornington Peninsula from Port Phillip Bay to Westernport (figure 7). As wildlife does not recognise land ownership, the establishment of corridors requires both large government reserves, such as Cerberus and Devilbend Natural Features Reserve, as well as habitat provided on private land. A private garden may be a small part of the connection, but each piece is vital in generating a link.

Figure 7: The garden contributes to wildlife corridors crossing the Mornington Peninsula. Somers sits in the south-eastern corner of the peninsula. (Image: author's own.)

Avoiding disturbance

If you crouch down and look carefully, you may see the hairs of the *Drosera peltata* (ssp. *auriculata*, tall sundew) with its leaves closed and wrapped around a small insect, perhaps a mosquito.

Droseras are small, carnivorous, perennial herbs. They trap insects on special sticky hairs on their leaves. The plants receive their nutrients from the insects and thus can survive in poor soils. Their presence is a sign of an intact ecosystem and undisturbed soil. Part of my discovery about the best way to garden here lies in knowing what *not* to do. To retain and strengthen the indigenous biodiversity and foster the plants that have evolved to survive in these conditions, the soil should be neither fertilised nor changed.

Many small, delicate plants do not tolerate much disturbance. In parts of the garden we have inset wooden 'stepping stones' to encourage paths through sensitive areas (figure 8). Our children enjoy these small-scale passages through the garden. These paths are found through observing and respecting the existing plants, rather than being planned and then planted. After a large tree died, it was used to make the steps as well as a child's climbing structure (figure 9). Other dead trees are left standing, providing habitat and food for birds and insects. The tawny frogmouths often roost during the day in a dead eucalypt, camouflaging well with its rough, grey branches.

Awakening what is dormant

Acacia mearnsii (black wattle) and *A. melanoxylon* (blackwood) have self-sown in the garden. When I notice a self-sown plant I wonder where the parent plant is or was, and why the seed has now germinated.

Gardening here is mainly a process of weed removal. Much more work is involved in carefully removing invasive species than in planting. The work is indirect or catalytic; nurturing what is there, allowing for vegetation to regenerate through seed dormant in the soil, carried by birds and animals or wind-blown. Most of this work is done in the winter and spring months when weeds germinate.

Figures 8 (left) and 9 (right): Inset timber garden steps and children's climbing structure. (Photos: author's own.)

By summer the garden is more dormant. Plants have flowered and set seed and now protect themselves from the heat.

As I write this, the pimeleas (common rice-flower, *Pimelea humilis*) are just about to flower. Their intricate, symmetrical flower heads, made up of many small flowers, are so pretty when seen from above among the grasses (figure 10).

Some plants are cultivated from seed, others from cuttings. Some are easily cultivated, others difficult. These pimelea plants were propagated from cuttings and have been planted in a group. They have a suckering habit and are starting to spread through their root systems.

Figure 10: Common rice-flower (Pimelea humilis). *(Photo: author's own.)*

Sowing seed

The *Allocasuarina littoralis* (black she-oak) and *A. verticillata* (drooping she-oak) were grown from seed and planted in a group now producing a veil of delicate foliage that catches the light. The fallen branchlets form a blanket underneath the trees.

The seed was collected nearby because local seed will help maintain the local species. The process of growing plants from seed takes time; it can take two years before the young plants are ready to go into the ground. Mature seeds can be collected only at certain times of each year. They need to be stored in specific conditions and then germinated in seed trays before being individually potted into small containers. There they can grow until they are established and ready to be planted out. Plants grown from local seed act as a seed bank.

Small beach houses providing flexible accommodation have long been built in coastal settlements such as Somers. They provide a means of staying in and enjoying the coastal landscape. In this area, private land was not clearly demarcated and, consequently, the landscape is more continuous between the coastal reserves and private property. Coastal walking tracks link the land subdivisions and provide pedestrian trails.

The enjoyment of this garden comes through an appreciation of the small detail of the plants within it and the ecosystems that extend beyond it. The garden cannot be understood in one moment or from one point of view. Each visit, each meander along its paths, is different and, like the garden itself, is best unplanned. It opens up the opportunity to observe and savour. Observing each moment of the plants' life cycles is part of the enjoyment of the garden.

There is no end to the work required to nurture this garden. Many more plants are yet to be identified and the challenge remains of trying to understand the boundless complexity of plant systems. At the same time, the garden has its own surprising life that needs to be left alone. This requires time to observe and learn its particularities – time that cannot be rushed. Just as each person can patiently enjoy the interconnected landscape knit between public and private land, an indigenous garden contributes to that broader landscape. Moreover, within its boundary, the garden provides joy in its own right as well as contributing to something beyond its boundaries.

NOTE

1 The Small Homes Service was instigated in Victoria, Australia, by architect Robin Boyd and the *Age* newspaper in 1947 as an affordable way for people to build well-designed homes.

Gardening for Food and Community

ROBIN TREGENZA

The sky is turning dusky on a balmy November evening, music is playing in the background and there is a soft heat radiating off the high brick wall behind us. I am at the annual Gino's Trattoria Barrio Fiesta hosted by Megan Floris in a small, gravelled car park adjacent to her house, behind a busy main street in an inner north suburb of Melbourne, Australia.

At least 50 people are milling about, sitting at picnic tables, perched on milk crates drinking beers and queuing cheerfully to use the sandwich press for their home-made calzones. The ingredients come from a combination of sources including a garden tucked into a reclaimed corner of the car park and established to provide food for this kind of event. It is supplemented by excess produce from Megan's home garden next door and the school gardens she works in, as well as from foraging and dumpster diving.

Food at these parties is used as a subtle tool for starting conversations about urban food production. The food is planned around what is easily accessible and free. 'People get excited about that stuff and it's a point to introduce the garden as well', says Megan. That is exactly what I am hearing as I eat my calzone; a conversation full of excited awe at the huge bunch of bananas hanging from the banana palm in the adjacent garden. Megan continues, 'I like to not push anything onto anyone … it's just subtly mentioning it and talking about it and hoping they enjoy the space … it's a conversation around food and growing food and what you can do with your space even if it is rental … most people feel like why bother in a rental'.

Two years ago the narrow backyard wedged between a high brick wall and old sheds in the middle of a commercial zone was mostly filled with morning glory and chickens, with nothing really established beyond a few random annual beds. Now its 35 square metres are crammed full of 90 types of plants and are a site for experimentation and demonstration (figure 1). In stark contrast to the abundance, next door a patch of lawn the same size as Megan's garden lies neatly between fences and buildings.

Megan and her partner Raf Schouten developed Megan's garden to its current state to explore and demonstrate the use of urban spaces for food production. They observe that 'knowledge and skills of food production and growing plants are likely to become a lot more important over the coming decades in sustaining resilience to climate chaos and energy shortages'. They chose to concentrate their energies on food growing in the city 'where most people live and where the most opportunities for learning and sharing exist'.

Robin Tregenza has worked as a community development project worker specialising in edible gardens in several supported residential services and has tutored in landscape architecture and environments at RMIT University and the University of Melbourne.
Email: robintregenza@gmail.com

KEY WORDS

Community gardening
Urban food production
Community engagement
Sustainable gardening models

REPORT

Figure 1: View of Megan Floris's productive garden extending from the backyard (on the right) out to the public car park (on the left), Melbourne, Australia. (Photo montage: Philip Smith.)

A broader aspect of growing food is the concept of a productive rather than consumptive use of private space. Megan and Raf note a home is valuable space for producing, creating, learning and sharing and suggest that an array of productive possibilities, including workshops, studios, a small brewery or a shared kitchen, would be equally valuable. A productive food garden demonstrating water and nutrient cycling techniques like theirs is just one example. They emphasise that, as well as being a source of material goods, such as food, productive space builds connections and local networks that are not formed when goods are produced elsewhere and allows for a depth of experiences: 'the banana isn't separate from the banana tree or the conversation you have about it at a party'.

Megan and Raf are particularly concerned with demonstrating the possibilities for inner urban settings with limited sunlight and space, establishing gardens in rental properties and using limited materials. The goal is for everything to be simple, low tech, cheap, replicable, automatic and easily repairable. Public exposure to successful outcomes is planned for the long term, spreading the word through friends, demonstration days and a local community nursery called Merristem. The nursery was established to contribute to urban food security by increasing the availability and understanding of 'genetically diverse permaculture plants … appropriate to this region' (http://merristem.blogspot.com). Eventually, Megan and Raf intend to share their knowledge with broader networks like the local permaculture community. 'The idea is to end up with simple little models that someone can copy in a similar space', says Raf. Conceiving of the garden as an experiment definitely makes it more valuable to them than if it was just for food and this drives their commitment to it.

The garden was started when a handful of experiences came together, creating the opportunity to combine their ideas and interests into one project. In 2009, Megan travelled to the United States of America and visited people such as Dave Jacke, Eric Toensmeier and Brad Lancaster, whose work includes the creation of

edible forest gardens and often incorporates rainwater and grey-water harvesting and re-use. Megan describes them as 'passionate and pragmatic people who have been actively designing, implementing and continuously researching design systems for urban food production on home, street and community scales using ecological principles'. After seeing what they were doing, Megan returned to Melbourne excited and inspired by their ideas and ready to apply them in her own garden. Meanwhile, Raf had been installing grey-water systems and perennial gardens commercially, as well as experimenting on friends' houses. Megan observes, 'we kind of mashed all the ideas together, we did all of them'.

Megan's garden was the perfect testing ground for their goals. The upstairs bathroom gave an ideal way of using gravity in setting up a grey-water system, and the fairly typical urban environment provided a good challenge. The garden, a small and easy space to manage, is narrow and shaded for most of the year. In winter, no direct sunlight reaches the ground and there is a lot of vertical shade. Much of the garden planting is based on the use of available sunlight and shade-loving plants. The choice of plants is entirely situational. The 4- to 5-metre-high wall along the south side of the garden triples the space and brings in a lot more warmth and light.

The couple started by setting up the grey-water system for the garden, putting pipes under the bath to divert water out of the house through a hole in the wall. Through the use of gravity, water from the shower, bath and roof is distributed through a series of pipes along the brick wall and straight into the garden, where the pipes are covered by mulch. 'There's tonnes of water; there's always someone showering', says Megan enthusiastically. The washing machine was also added later to the grey-water system. Between the water sources, the supply is fairly constant and mostly they do not think about it at all other than to turn it off in winter. The system is simpler, more reliable and cheaper than water tanks. A series of taps to control the flow of water is as high-tech as it gets. Raf observes grey-water systems generally focus too much on technology, when 'all you need is a pipe': their system dispels the expectation that grey-water systems have to be high-tech or dangerous. He reiterates that being able to see a simple working structure is an important normalising process for others. Anyone can set up and fix a similar system cheaply. The model is meant to be simple and formulaic so others can apply the ideas themselves.

Merristem nursery was a big driver in the development of the garden and Megan and Raf's ideas. Most plants in their garden are from there. Merristem had 'a whole lot of weird plants' that they did not know much about and that they wanted to work out how to grow and use, says Megan. Their original excitement about how many plants they could grow has been replaced by their enthusiasm for a simpler approach over the years as they have come to know and understand the plants better. 'We planted lots of plants that we thought would be great that weren't that great.' The ethos is to have a go at something and if, after a year, it is not quite perfect, it is dug up and something new is tried. Plants that failed to fruit, took up too much space or tasted bad have been abandoned. Plants that are seasonally complementary have been planted together – for example, asparagus for summer and onion weed for winter – making good use of the garden space. Megan emphasises that, despite appearances, 'there's no randomness in there'.

When using urban space for food production 'you have to change what you want to fit into the different spaces … there's no point growing brassicas when there's not enough sunlight', says Raf. Describing their agenda, they state, 'the growth habit of the plants is used to maximise space and available sunlight'. The property has a lot of vertical space so they use vines and tall plants, while the extra warmth and light brought into the garden by the north-facing wall allow them to plant an array of subtropical plants in some sections. In other sections, the focus is on shade-tolerant perennials. According to Megan, 'the "novelty" value of the plants selected has been an experiment, not a fetish, and if they are not appropriate or productive they are removed'. Meanwhile, their garden acts as a site to normalise the 'unusual' plants being grown and used.

Vines and trees share the wall's height and warmth. In one summer, 18 types of vines – including chokos and hops – covered the wall, growing up wire trellises strung all the way to the neighbouring roofline. The bananas grew up against the wall in a couple of months, much faster than deciduous trees would grow in the same spot, and were quick to produce their first crop. Raf describes the plan to prune the fig tree in the middle of the garden so that they can use the light that strikes higher up the wall; 'hopefully it won't take up much garden bed light … there's still so much room up the wall'.

Megan and Raf think they can be pretty lazy. Originally, the aim was to have all perennial plants in the garden. 'Perennials are great because they are easy producers. You don't have to plant or look after a seedling, it's all automatic, watered; it just grows', says Raf. The five shiny eggplants already on the grafted perennial eggplant in early November demonstrate this argument beautifully. Learning the limits of which plants do well in the space, particularly over winter, changed their original reluctance for annuals. Lots of perennials thrived but did not produce fruit because of the lack of sunlight. Now they have more annuals in the ground layer for summer, although they have proved to be a lot of work as many are lost because birds (some living in the banana palm!) dig over the garden.

While the garden is not a totally manicured space, the plants work well together. 'I think it's quite a beautiful garden as well', says Megan. 'The aesthetic comes as part of a good setup'. This emphasis on the practical and order is demonstrated in the car park of the Mediterranean garden where virtually no soil shows. The plants have been stacked, with lower plants at the front and big trees at the back. 'They're there because it's the easiest spot to get [to] them and they get the right amount of light. If it's easy to get in and pick and they're all getting enough light [it] is just going to look good anyway', adds Raf.

It is necessary to wait to reap the benefits from these types of garden. Perennials take a few years to establish, so much of the produce has been salad greens and summer vegetables. One year there were lots of beans and chokos from the vines and enough pumpkins to store for six months. While the garden develops, it can be relied on to provide sufficient greens like wild rocket, silverbeet, fools cress, sorrel, portulaca and dandelion along with alliums such as onion weed, chives and garlic chives. At the time of writing, they were hoping to harvest more bunching onions and leeks. Megan and Raf monitor how much of their food they can eat out of the garden over summer. 'This year should be a lot more exciting than

previous years', says Megan, 'because the fruit is just getting started with the first big raspberry and blackberry harvest, there are a few peaches and already two large bunches of bananas with more on the way.' While they are still waiting for the asparagus, grapes, mulberry and figs to really take off, Raf enthusiastically anticipates 80 to 100 eggplants from the eggplant tree!

Because the garden is a trial site and a propagation area for the plants growing and being distributed at Merristem, Megan and Raf take about a third to one-half of the food they propagate in the garden back to the nursery in the form of tubers, cuttings and self-propagating plants (like raspberries and blackberries). This means while they get root crops, such as canna over winter, they do not eat a lot of the tubers they collect. Instead, they return them for others to propagate in some of the 20 gardens across Melbourne where Merristem members share the process of experimentation and feedback, taking plants home and trialling them. Merristem tracks these plants and compares growing successes by recording growers' names and the plant strains they have on a database. This spreads the risk in case plants die and allows specific plant cultivars to be established more smoothly.

Learning how to use many of the plants they grow is a central part of Megan and Raf's project. Through experimentation and cultural exchange they aim to introduce themselves and others to new plants and food cultures, or new uses of old plants. They cite choko as the perfect example: sliced and stir fried it is delicious; boiled with gravy it is not so great! Megan and Raf aim to try out things really well before getting people excited about them. 'It's better to not be that excited till you know it really works; it's more thoughtful and simple', says Raf.

They also participate in Merristem's occasional public open days during which information sessions and general knowledge sharing occur, plants are for sale and freebies are given to people who want to test plants out. Tasting happens regularly. At the autumn perennial vegetable open day, Megan brought along a thick and tasty soup made from canna and stem taro so everyone could try out the plants they could be heading home with and learn how they might cook them. Over winter, Megan runs fermentation evenings at her house, where she occasionally uses produce from the garden. Hops were used to make 90 litres of beer, and taro was fermented to make poi, a food staple of the Pacific islands that Raf describes as tasting and having the texture of sour clag. Banana flowers were cooked into a curry.

While working as the programme manager for Cultivating Community in the Community Gardens Program in Melbourne, Raf engaged with gardeners from diverse cultures and often brought plants back to Merristem. The community gardeners were an inspiration and a particularly good source of plants that tolerate shade. Raf lists leaf goji and a mystery leafy green as interesting acquisitions. 'It's good learning and seeing how people use things … it would be good to be able to bring plants back to gardeners who want them and share things if they work', but he concedes they already have a wide variety of plants.

Occasionally, Megan takes things from her garden and Merristem to the school gardens she works in as garden educator for the Foodweb Education Program in Melbourne. While she likes to introduce new and easy-to-grow foods such as pepinos and novel root crops to the children, she does not expect

them to become central or important to the gardens in the near future. It is more about broadening the children's knowledge and experience. Sometimes produce is also used for school fundraising at markets, broadening community contact with new plants.

An important aspect to Megan and Raf's explorations and the establishment of their garden is making the cultural skills and knowledge they are coming into contact with more accessible. Raf has been building a website that will be publicly accessible to record all this information and broader related resources gathered by Merristem. He also hopes to include local heritage fruit orchards, plant collections and who is growing what in different neighbourhoods, so people can easily track down cuttings of specific plants.

While their garden took a lot of effort over the first six months, now that it is established there is less to do. Most of the work involves looking at how everything is working and doing maybe 20 minutes a week random pruning, training and picking. The main task is managing the birds and the annuals. Raf observes, 'it's probably no more work than mowing the lawn … it's enjoyable, it's mostly interesting and there's no menial tasks', and, because it is on the path they walk through every day to Megan's front door, 'it kind of happens as part of other things too'.

In the longer term, they would love to set up a composting toilet in the shed; the kitchen compost is not quite enough. Mostly they are aiming for a more stable environment that involves little work and lots of benefits. Following the many adjustments at the beginning, everything should settle into a long-term framework, smaller plants will be shaded out and 'eventually it will change and be more just a tree garden', says Raf. Perfect for sitting back, watching the vines grow and thinking about what to have for dinner.

NOTE

This article was originally written in 2011. Much has changed since then, reflecting the nature of this kind of situation.

ADDITIONAL SOURCES

Kumar, BM and Nair, PKR (eds) *Tropical Homegardens: A Time-tested Example of Sustainable Agroforestry: Advances in Agroforestry, Vol 3*, Dordrecht: Springer. Accessed 14 November 2014, www.springer.com/life+sciences/agriculture/book/978-1-4020-4947-7. This book includes excellent academic studies of perennial polycultures grown around homes in many parts of the tropics.

Jacke, D (2005) Edible Forest Gardens. Accessed 14 November 2014, www.edibleforestgardens.com.

Lancaster, B (2014) *Rainwater Harvesting for Drylands and Beyond*. Accessed 14 November 2014, www.harvestingrainwater.com/aboutbrad.

Ludwig, A (1997) *Laundry to Landscape*. Accessed 14 November 2014, http://oasisdesign.net.

Toensmeier, E (no date) *Perennial Vegetables, Edible Forest Gardens*. Accessed 14 November 2014, www.perennialsolutions.org.

A lot more literature is available in journals like *Agroforestry Systems* (www.springer.com/life+sciences/forestry/journal/10457).

PLANTS GROWN IN THE GARDEN

Crossed out names are those plants that were tried but unsuccessful. Annuals have not been included.

Trees

American pawpaw (*Asimina triloba*)
Apricot (*Prunus armeniaca)*
~~Avocado (*Persea americana)*~~
Babaco (*Vasconcellea* × *heilbornii*)
Blueberry (*Vaccinium* x)
Chilean guava (*Myrtus ugni*)
Fig (*Ficus*)
Lime (*Citrus* x)
Peach (*Prunus persica*)
Pomegranate (*Punica granatum*)
Red cherry guava (*Psidium littorale*)
Toon (*Toona sinensis*)
White mulberry – black fruit (*Morus alba*)
Yellow cherry guava (*Psidium littorale*)

Berries

Cape gooseberry (*Physalis peruviana*)
Golden currant (*Ribes aureum*)
Gooseberry (*Ribes uva-crispa*)
~~Midyim berry (*Austromyrtus dulcis)*~~
Raspberry (*Rubus idaeus*)
Red currant (*Ribes rubrum*)
Thornless blackberry (*Rubus*)
~~Youngberry (*Rubus caesius*)~~

Subtropicals

Babaco (*Vasconcellea* × *heilbornii*; syn. *Carica pentagona*)
Banana (*Musa x paradisiaca*)
Banana passionfruit (*Passiflora* x)
~~Fruit salad plant (*Monstera deliciosa*)~~
Passionfruit (*Passiflora* x)

Root crops

Achira (*Canna edulis*)
~~Burdock (*Arctium lappa*)~~
Chinese artichoke (*Stachys affinis*)
Chinese yam (*Dioscorea opposita*)
Groundnut (*Apios americana*)
Jerusalem artichoke (*Helianthus tuberosus*)
Oca (*Oxalis tuberosum*)
Salsify (*Tragopogon porrifolius*)
Scorzonera (*Scorzonera hispanica*)
Taro (*Colocasia esculenta*)
Yacon (*Polymnia sonchifolia*)
Yam (*Dioscorea* ?)

Vegetables

Asparagus (*Asparagus officinalis*)
~~Brazilian spinach (*Alternanthera sissoo*)~~
Cardoon (*Cynara cardunculus*)
Ceylon spinach (*Basella alba*, *Basella rubra*)
~~Chilacayote (*Cucurbita ficifolia*)~~
~~Chilli (*Capsicum annuum*)~~
~~Chilli (Capsicum ?)~~
Chilli (*Capsicum annuum*)
Choko
~~Cranberry hibiscus (*Hibiscus acetosella*)~~
Dandelion (*Taraxacum officinale*)
Fools cress (*Apium nodiflorum*)
French sorrel (*Rumex acetosa*)
Globe artichoke (*Cynara cardunculus*)
~~Ground cherry (*Physalis pruinosa*)~~
~~Kale (*Brassica oleracea*)~~
~~Kangkong (*Ipomoea aquatica*)~~
~~Miracle plant (*Moringa oleifera*)~~
Nettle (*Urtica dioica*)
~~Pepita pumpkin (*Cucurbita pepo*)~~
Perennial wild rocket (*Diplotaxis tenuifolia*)
Purslane (*Portulaca* sp.)
~~Red dandelion chicory (*Cichorium intybus*)~~
Rhubarb (*Rheum rhabarbarum*)
Stem taro

Herbs

Apple mint (*Mentha suaveolens*)
Bergamot (*Monarda didyma*)
Comfrey
Cuban oregano (*Plectranthus amboinicus*)
Gotu kola (*Centella asiatica*)
Hop vine (*Humulus*)
Lemon balm (*Melissa officinalis*)
Lemon thyme (*Thymus citriodorus*)

Herbs (*continued*)

Lemongrass (*Cymbopogon*)

Marsh pennywort (*Hydrocotyle vulgaris*)

Mint (*Mentha*)

Mountain pepper (*Tasmannia lanceolata*)

Oregano (*Origanum vulgare*)

Parsley (*Petroselinum crispum*)

Peppermint (*Mentha* × *piperita*)

Perennial basil (*Ocimum basilicum*)

Perennial chamomile (*Chamaemelum nobile*)

Pineapple sage (*Salvia elegans*)

Rosemary (*Rosmarinus officinalis*)

Thyme (*Thymus vulgaris*)

Vietnamese mint (*Persicaria odorata*)

Cacti

Dragon fruit (*Selenicereus megalanthus*)

Prickly pear (*Opuntia* spp.)

Alliums

Chives (*Allium schoenoprasum*)

Garlic chives (*Allium tuberosum*)

Perennial leek (*Allium ampeloprasum*)

Potato onions (*Allium cepa* var. *aggregatum*)

~~Society garlic (*Tulbaghia violacea*)~~

Three corner garlic (*Allium triquetrum*)

Welsh bunching onions (*Allium fistulosum*)