

*Landscape architectural research in Canada:
developing a certain future in uncertain times*
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LANDSCAPE ARCHITECTURAL RESEARCH in Canada is defined by the uncertain and complex global issues of the times, the significant theoretical and methodological debates facing the world of research in general, and the increased academic pressures for research in a less well-funded and more constricting research environment. It is also affected by the political environment in which its few researchers are outnumbered by the larger disciplines and professions which seem to be getting bigger all the time, and by its own internal struggles between its disciplinary and professional roles. Landscape architectural research efforts in Canada are, as such, both vigorous and hesitant, aggressive yet underfunded, well focused yet somewhat uncertain in their ultimate intention. This paper begins with a brief examination of the present context of our research. It next looks at the basic problems that have and continue to plague design research. With these contextual issues established, the paper then recounts a brief history of the profession and its emerging educational-research base in Canada and gives an overview of current research efforts. It concludes by suggesting several important directions that are needed in Canadian landscape architectural research over the next 10 years. It is hoped that this personal, historical account of research efforts, problems and opportunities in Canada will allow others in the Asia-Pacific region to recognise the similarities to their own situations.

RESEARCH EFFORTS in the discipline of landscape architecture have been influenced heavily by three important contextual factors. First, the uncertain nature of the times has made it difficult for the discipline to maintain a clear and controlled focus on its research efforts. Secondly, the world of research faces its own uncertainties, which have confused the methodological intentions specific to landscape architectural research. Finally, a professionally trained cadre of academics, new to the academic scene, are only now beginning to understand their mandate within both the profession and the university. Despite these difficulties, research is advancing on a number of levels. The last five years in particular have witnessed a highly productive discipline demonstrating a clearer sense of purpose and renewed energy.

The paper begins with an exploration of the context in which Canadian landscape architectural research operates. It then reviews recent research and writings. It concludes with several recommendations for focusing these research efforts to further clarify our future in these uncertain times.

The research context

These are difficult and uncertain times for researchers, particularly for anyone concerned with landscape. The environmental, experiential and cultural crises experienced globally strike at the heart of every aspect of landscape and landscape architecture. The emerging global-corporate economy, worldwide urbanisation (as opposed to city-making), the emergence of the universal and decline of the regional, the loss of the authentic, the decline of community and

the public realm, the fragmentation of both society and individual experience, and the almost 'show business' quality to our existence assault our sense of nature, culture and landscape, and confound our fundamental definitions of the research 'problem'. At the same time, threatened landscapes, polluted places, and the rapid rate at which the gene pool is being depleted add to the confusion and general state of panic. Given this apparent widespread chaos and impending doom it is only natural to ask of what use is yet another study on the visual preferences that tourists have for different forest clear cuts, another ethnographic study of children growing up in suburbia, another historical account of some long-abandoned villa, or another analysis of how tourist travel patterns are influenced by the distribution of short-term and long-term camping grounds along the coast.

These difficulties are further compounded for research professionals by their loss of effective time for research and design. First, significantly less time is expended on the design of all aspects of landscape and place than ever before—this in some ways explains many of the inadequacies of current design. Further, because most landscape architecture programmes have a small faculty, the average faculty member spends more time than is usual on general administration rather than on research—and the amount of administration required in the university setting seems to be increasing daily! Thus the time needed for reflection is lost, yet research and design are reflective practices (Schöen 1983). This situation is exacerbated on a number of levels. With the pace of world change increasing daily, and with more and more information to be 'consumed', we have ever less time to determine whether or not the information is of any value in the first instance. Moreover, university systems are demanding that our students be taught in less time. Can well-considered, long-term research and effective professional education take place in such a frenzied existence?

At the same time, research funds are decreasing, being directed more by political and corporate agendas, and being channelled more to the major disciplines. It is not uncommon in Canada for landscape architectural research to 'fall between the cracks' of the research objectives of our two leading research agencies—the Natural Sciences and Engineering Research Council (NSERC) and the Social Sciences and Humanities Research Council (SSHRC). Further, landscape architectural research submissions to NSERC or SSHRC are often recommended for funding by their blind reviewers but not approved by the council on the grounds that they do not meet the council's funding priorities. As such, landscape architectural faculty have had to generate funds from many other sources, which often requires extensive additional time.

The research issues of the times

If global and local crises, together with loss of time and funding, confuse and limit our research agenda, so too does the general confusion that exists among the more experienced researchers and professions. The splits between the pure and applied, the quantitative and qualitative, the specific and the whole, the ethical and the factual, and the ideal and the pragmatic are issues underlying great debates that are at once both exhausting and daunting.

It is worth outlining a number of these more important research issues briefly. Each issue is, of course, a text or several texts unto itself. To not understand these issues, however, is to not understand the predicaments facing

current and future research and, of equal importance, the opportunities for our future research. It is important to note at the same time that, over the last 15 to 20 years, the particular issue of what constitutes valid and essential landscape architectural research has been central to many of the discussions of the Council of Educators in Landscape Architecture in North America (CELA), and has taken up many pages in the *Landscape Journal*. While significant progress has been made (eg Corner 1990; Riley 1990; McAvin et al. 1991), the issue still confuses our thoughts and actions.

Any discussion of current research must begin with an understanding of the emergence of the positivist-reductionist viewpoint in the late 1700s which separated art from science decisively (Corner 1990). Art became a matter of taste, initially that of the opinion leaders. As this view emerged, not surprisingly, philosophy, ethics, logic and the other basic disciplines of the qualitative world lost their importance (Paterson 1983); eventually the qualitative world became little more than opinion, a non-factual perspective open to doubt. The ultimate result is that both individuals and societies have become less 'qualitatively intelligent'. Yet design is fundamentally a 'qualitative' act—one that demands that we act rigorously in matters concerning the poetic aspects of our existence (Corner in McAvin et al. 1991).

With this demeaning of the qualitative, the quantitative world also has suffered because of a growing inability to assess the nature of its problems, processes and conclusions. We have lost common sense, a sense of purpose, and the rich sense of discovery that is so necessary to our actions. We undertake the 'quantification of the trivial for confirmation of the obvious' (Riley 1990). Or we use the quantifiable to hide from the need to think critically about our actions.

The reductionist approach has tended as well to split the world into smaller and smaller parts. Of course, we now 'recognise' that things must be understood not only in their parts but also as they come to together to create 'wholes' (Alexander et al. 1987; Alexander 1988) and as they work dynamically over time and across systems (Altman 1992). The reductionist viewpoint is the antithesis of design: through design understanding is sought of how things best come together; it is fundamentally holistic in intent. While we may now be seeking to give clearer definition to these holistic tendencies, design has suffered in many ways from the reductionist insistence informed, as Helphand (McAvin et al. 1991) has suggested, by the good intentions of organisations such as the Environmental Design Research Association (EDRA), particularly in the early years of what was then assumed to be significant design research.

Design is a 'doing' activity; the doing of design is crucial to understanding it. Knowledge and theory that emerge without reference or applicability to the doing have little relevance in a design discipline; they fail to inform. Yet the doing was seen as applied research, which was rejected by powerful notions of pure research that so dominated and, in many instances, still dominate university research and research funding priorities. Furthermore, on the other side, those designers who continued to 'do' design, invariably did so more as a form of rebellion than as a disciplined approach to thinking about and informing the discipline. As a consequence, the iterative and reflective aspects of design and the knowledge contained therein failed to emerge in any significant manner.

An important component of the doing of design involves projecting values and ideals into possibilities or ideas for the future (Jacobs 1991a). While the analysis of current conditions may tell us what not to do, it is unlikely, conversely, to always tell us what to do. There is no quantifiable procedure for analysing the future, despite what those who create predictive design models might like to claim. We must use our critical reasoning to 'correct' and 'improve' each iterative effort. Yet, most cultural theory, including much of the postmodern and deconstructivist discussions, have a profoundly analytical, even dangerously negative view that can only damage the need for design to move towards what is seen as being 'good', no matter what the global circumstances might otherwise suggest. In this respect the design activity is perhaps unique, as well as being uniquely difficult.

The development of the profession and research in Canada

The Canadian Society of Landscape Architects and Town Planners was founded in Canada in 1934. The title aptly described the wide ranging activities and concerns of the 10 founding members. Early landscape architects had played a significant role in the development of the Canadian landscape, from F L Olmsted (*Mount Royal Park*, Montreal) and his follower, Frederick Todd (*Assiniboine Park*, Winnipeg), to notable itinerant landscape architects such as Thomas Mawson (*Wascana Centre*, Regina). Nonetheless, it took the depths of the Canadian Depression to bring this group of like-minded professionals together to exchange ideas and promote a particular set of solutions to the problems of those times. These too were individuals who were often born elsewhere and were certainly educated outside of Canada. Unfortunately, it was to take until Canada's 100th birthday in 1967 for professional education to emerge in universities to support the profession. The universities of Guelph and Toronto initiated degree programmes in the middle 1960s, followed by the universities of Montreal and Manitoba in the late 1960s and early 1970s, and lastly the University of British Columbia in 1980. Most of today's senior professionals and educators in Canada were educated elsewhere—primarily at the universities of Harvard, Pennsylvania, Michigan, Wisconsin and Berkeley, California in the United States.

In the mid 1970s there were, at most, 250 members of the Canadian Society of Landscape Architects (CSLA, which from available records appears to be the direct descendant of the first society). As such, the profession in Canada was both old in presence and inordinately young in influential numbers. While the profession had been in practice for over 100 years, it had not emerged in a manner wherein a discourse of Canadian issues, needs and visions was central to the profession or its educators. Further, in the first 15 years of landscape architectural education in Canada (until the late 1970s), the demands for project-oriented professionals were so strong that many discussions about research and research-related issues were of secondary importance. The pragmatics of the time seemed to dictate this position.

In this period, moreover, the stance of the profession was confusing. Planning had emerged as a central discipline in Canada after the World War II with several university programmes located across Canada. The Canadian Institute of Planners (CIP) was formed as an organisation totally independent of CSLA. Planning quickly took on a political and policy focus and, by the late

1960s, physical planning, seen in the form of the 'grand master plan', was in disrepute. Concurrently, the modern movement had damaged the landscape architectural profession: site was irrelevant to building, landscape was irrelevant to city-making, and the public realm, so central to the activities of the profession, was dying. Despite these warning signs, Ian McHarg gave us momentary focus with his rallying call to *Design with nature* and Lawrence Halprin (ie *Lovejoy Plaza*, Portland, Oregon; *Sea Ranch*, California) seemed to reinforce McHarg's dictum that we return to nature by creating a design style that emerged from the essence of nature.

In retrospect, despite evidence to the contrary at the time, the profession seemed to believe that the future belonged to landscape architecture. The 1970s were optimistic times, there was a feeling that there was nothing the profession could not do if they put their minds to it and they had the moral rhetoric of 'stewardship' on their side. Besides, they were all very, very busy—who had time to stop and think!

By the late 1970s, however, many changes were beginning. There was a growing realisation that research was needed urgently to resolve a wide variety of complex issues. Moreover, most universities were making greater demands on their design faculty to undertake research and publishing. Despite this, many of the faculty being hired were trained to practise their profession and were hired on the strength of their professional experience. They were not educated to be researchers and had no clear idea what their research agendas might be. Further, there was little in the way of a learned history of the profession, a central body or bodies of work to operate from, or a set of research methods specific to the profession. It would take these new 'researchers' (approximately half of the current landscape architecture educators in Canada) the better part of the 1980s to clarify their intentions and understand their role in an ever more demanding academic community.

Current research efforts: an overview

Despite such a young and uncertain history, landscape architectural research and publishing in Canada have made substantial progress in the last 10 years, and in the last five years in particular. There is good reason to be optimistic. The areas of research are highly varied and often multi-disciplinary, and generally tend to have a value-applied focus. While efforts are made difficult by limited research funds, limited education in research methods, and small faculties, research is nonetheless assuming a significant role in the lives of all Canadian landscape architectural programmes. In addition, faculty members are extensively involved in university, professional and community service—notably so, given their small numbers and many other teaching and administrative responsibilities. In all, in 1994 some 34 full-time faculty taught 475 undergraduate students and 130 graduate students.

In order to provide an overview of landscape architectural research in Canada, the author interviewed two members from each of the five landscape architecture departments in Canada. While the selection of individuals to be interviewed was subject to their availability, a conscious effort was made to talk to a senior member or department head in each programme, as well as one of the newer, recently tenured members of each programme. The interviews focused both on the participants' overall assessment of the current research

condition and the research efforts and achievements of their colleagues. In addition, the author reviewed several major journals containing the work of various Canadian landscape architects. Finally, a rough draft of this paper was sent to all 10 participants, requesting them to criticise the paper and identify possible oversights. The paper, however, represents the author's particular perspective on landscape architectural research in Canada.

Landscape architectural research efforts in Canada are briefly discussed below around the topics of design education and teaching methods; design theory—design language; design as critical practice; the garden; urban open space, greenways and the public realm; community planning and design; cultural and heritage landscapes; place theory and critical regionalism; landscape perception and visual resource management; landscape planning, environment and sustainability; landscape management and reclamation; and computers, landscape architecture and the environment. Each topic is reviewed in terms of the current status of research, the specific research efforts of various Canadian researchers, and the particular questions or future research efforts that need to be addressed. Mention is made also of the various efforts and approaches that Canadian researchers use to attract research funds and disseminate research information.

DESIGN EDUCATION AND TEACHING METHODS

The inadequacies of design education and university teaching in general have always plagued the discipline. In turn, the manner in which teaching has been assessed in the university has also been problematic (Stoltz 1992). New teachers always find the issue of particular concern; each year at the CELA annual conference, they present various papers on the problems of teaching and evaluating design.

From one perspective, Quayle and Paterson (1989) have examined the problem of superficial knowledge and how it impedes design learning; they have found that it takes a substantial amount of time before knowledge is 'taken on' to the extent needed to adequately inform a student's design-making activities and products. Their work has explored the idea of 'knowledge bridging' and a range of techniques for reflection that attempt to deepen and clarify students' design learning. They have also assessed the role of design studio problem statements (Paterson and Quayle 1985) in a student's understanding of the nature and purpose of design, and Quayle (1985) has developed a wide range of idea generation techniques for use in the design studio. Similarly, Paine and Anderson (1993) have examined ways in which the issue of the 'design concept' can be taught in the studio.

Brown and Stoltz (1993) have studied the manner in which students' learning styles influence their design. Using psychological assessments such as the Kiersey Temperament Sorter they have evaluated individual student learning styles as well as class profiles and used such information to inform students about their own individual approaches to learning, and to structure the way different types of class personalities are taught. Stoltz (1993a) has also examined methods for improving the effectiveness of the individual student critique. In addition, Stoltz and Brown (1994) have begun to develop a comprehensive pedagogical framework for the design of university courses in general. In this respect, Stoltz spends a substantial amount of his time improving the teaching methods and performance of faculty at the University of Guelph.

Much attention has also been directed to the role of the computer in the profession and in design education. Fife, Danahy and Wright (Fife 1994b) at the University of Toronto are experimenting to overcome the difficulties of making the computer an effective interactive tool in design learning, rather than using it merely as an elaborate drawing and drafting tool. Their work with the computer as a tool for teaching students and informing communities is well recognised across Canada. Stoltz (1993b) reinforces their approach, believing that various student learning styles can be better accommodated by the current use of computer-aided design (CAD).

In these various research efforts to date, however, it is apparent that there is still much to learn about effective teaching in design education. It remains to be proven, for example, that the expensive and time-consuming tutorial process in design is really necessary. There is also good reason to question whether design can be 'adequately' taught and learned in the three-year, first-professional degree programmes at the Masters level, towards which North American universities are continuing to move; these programmes may well be attempting to do too much in too little time. Finally, the role of landscape architectural styles, the 'moral poverty of the information age' (Bowers 1993, p.82), and the extent to which computer-aided design and geographic information systems (GIS) influence and alter our sense of self and place have yet to receive the substantial investigation they deserve.

DESIGN THEORY—DESIGN LANGUAGE

Design theory in landscape architecture has only really started to emerge from within the discipline in any significant way in the last five to 10 years. While the tendency remains to apply theory from other disciplines to design, there is a notable move towards theory arising from landscape and the design activity itself. Such work focuses on language, landscape typologies, landscape experience, and a sense of the sacred. Those developing theory of this nature have in common a desire to provide a solid knowledge base that can be built upon over time (Wright 1994) and a way of elaborating on the purposes of design, culture and landscape. Moreover, they are distinctly phenomenological in inquiry; as Wright (1994) notes, 'We need to be able to see with our bodies' or we need what Mooney (1994a) terms 'an ecology of mind'.

The Canadian cultural critic, Michael Ignatieff (1985, p.140) asserts that 'We need words to keep us human'. From this perspective, the decline of landscape and place-related, experiential words in our everyday language should give us great cause for concern (Paterson 1993a, 1993b). From Wright's (1994) perspective, this loss of language is only part of the reason that much of postmodern design discussion is overly self-referential, inaccessible and often irrelevant to the needs of our everyday culture, people and places. Simon, McLachlan and Nelson (1993) argue, however, that we have not paid adequate attention to the current post-structural debates in order to fully understand their implications for design and place making. While Simon et al. are no doubt correct in this assertion, the question arises as to whether post-structural notions should be allowed to drive design, as in the horrors of a *Parc La Villette* (Paterson 1991), or merely to inform us about the problems facing design today. Both Paterson (1993b) and Wright (1994) argue for an elaboration of the role of language and design as a 'conserving activity', as a means of creating and holding onto a knowledge base for landscape architectural design.

The desire for a sound knowledge base is also found in Condon's (1988) and Condon and Moriarty's (1991) work on 'designed landscape typologies'. Condon argues that there is a distinct set of fundamental, design types (ie the grove, the orchard, the stair) that can be repeatedly used and elaborated upon in the creation of landscapes and place. He further argues that all great landscapes, both the designed and the vernacular, contain one or several of these fundamental types as their basic building block. While Wright agrees with Condon's approach in principle, he argues that the types that are present in the natural as well as designed landscapes are greater in number than what Condon has proposed to date. In both cases, however, there is again an underlying assertion that design must be more 'essential' in its approach and in its basic design-propositions.

In this vein, Condon (1991) also calls for a position of 'radical romanticism'. The Romantics saw culture as 'hell-bent' towards a materialistic interpretation of the world, offering no sense of the spiritualism or *élan vital* that give form and substance such special meaning (through the arts, poetry, religion and daily life experiences). Condon argues that this romantic position is needed again, in a radical form, primarily because the problems of the world are greater than ever before. This position is supported by Paterson (1993b) who argues for a greater understanding of the dualities and dialectics of experience, the manner in which most landscape theory to date (ie prospect-refuge theory (Appleton 1975) or place and placelessness (Relph 1975)) fits into this dialectical position, and the opportunities that exist for further research grounded in such an 'experiential reality'. In this respect, Quayle and Driessen van der Lieck (1994) have explored the dialectics of the rough and refined, both as an aesthetic notion and as a definition of 'good' for community life.

Clearly much more work is needed at this theoretical level. More, well-articulated theories are needed—theories that are tested in the ground, in 'action'. Equally, there is a desperate need to show that nature and culture cannot be, must not be seen as opposing forces. Jacobs (1994) is firm in his assertion that 'the false dichotomy that exists between environment and place must cease if design is to function at all'. Such a dichotomy, he argues elsewhere (Jacobs 1991a), is at the root of the current crises of built form and the creation of landscape. The crises can only be resolved by more comprehensive theoretical and applied propositions that are aimed specifically at resolving the differences and expanding the set of possibilities.

DESIGN AS CRITICAL PRACTICE— THE IMPORTANCE OF DOING

It is in the act of doing, in the creation of specific landscapes with specific theoretical intentions, that in addition to describing the possibilities for an improved future, design can assume a role of critical inquiry. As Myers clearly argues (McAvin et al. 1991, p.157), there is a need for 'a form of landscape architectural critical inquiry that is founded in design practice and that is situational'. It is with this notion in mind that a number of Canadian academics are also undertaking specific design and design-planning projects, their work going well beyond the 'normal' practice in intent and form.

It is perhaps not surprising that Peter Jacobs, one of the first to identify the nature of the current design crises, and several of his colleagues at the University

of Montreal have initiated their particular view of critical inquiry. Place Berri, in Montreal, and La project de paysage du Fauberg Quebec (both projects by Peter Jacobs, Phillippe Poullaouec-Gonidec and Bernard St Denis) explore issues of landscape as an art and experience that emerges from their highly specific analysis of a particular culture, location and time. Both projects have won several awards.

Robert Allsopp (1987a, 1987b), at the University of Toronto, has produced a similarly long list of award-winning projects that are noteworthy for their conceptual integrity and contextual responsibility. Such projects include the *Parliamentary Precinct* in Ottawa, the nation's capital, and *Dominion Square* in Toronto. In addition, Allsopp was awarded the prestigious Canada Council Arts Award for Residency in Barcelona, 1988–1989.

At the University of British Columbia, Patrick Condon and Stacey Moriarty (1991) are applying their notions of designed landscape typologies and radical romanticism to a campus plan for a small central Iowa university, while Moura Quayle (1994) is exploring the dialectics of the rough and refined in her plans for an urban greenway through a new, high-density residential development.

These are specific initiatives—designs with a purpose—and acts of critical inquiry that can only lead to increased knowledge. They point to another area of academic activity that I believe will assume much greater importance in the coming years in Canada.

THE GARDEN

In the act of critical inquiry in landscape architecture, it is not surprising that the garden retains a central position. It represents the philosophical and spiritual nature of our beginnings; it is our meta-metaphor. It is also a place for great experimentation.

John MacLeod (1988, 1992) has spent several years researching and writing about the role of landscape in the cause of peace and as a place of healing. He has made a substantial contribution to documenting and analysing the numbers and types of peace gardens to be found throughout the world and, in particular, in North America. Patrick Mooney (1994a; Mooney and Everett 1993) has researched the role of the garden as therapy for alzheimer patients, as well as undertaking critical analyses of significant Japanese and Chinese gardens in Canada. Charles Thomsen (1988) has contributed nearly 20 years of design service and advice to the *International Peace Gardens* on the Canada–United States border. Jim Taylor has focused his attention on the role of the arboretum as garden. In addition to his master plan for the *University of Guelph Arboretum*, he has gained placings in several arboretum design competitions throughout North America.

Each of these efforts has focused on elaborating the purpose of garden and clarifying the ways in which the garden can be given new order today. It can perhaps be said, however, that we remain too timid about the possibilities for the garden as a place of experimentation and as a place to teach others about the possibilities for life.

URBAN OPEN SPACE, GREENWAYS AND THE PUBLIC REALM

A substantial amount of research, writing and activist work has been done by the discipline on open space and public realm planning, and urban and regional greenways. Hough's (1984) landmark text on *City form and natural process* not

only served as a form of conclusion to the major efforts of the profession in Canada in the public realm (and this has indeed been the great achievement of the profession), but also opened a whole new discourse on where open space planning and city-making should go in the future. His work has had a significant impact on the much revitalised interest in the development of greenways throughout North America.

Efforts to improve the public realm and the open space of our cities are being undertaken in numerous ways. Several important assessments of major, existing open-space systems in Canada have been made with a view to both documenting their development and suggesting how such systems act as a catalyst for extensions and improvements to the systems (Jacobs 1989; McLachlan 1993; Taylor, Paine and Fitzgibbon 1993). Moura Quayle (1992), as chair of the City of Vancouver's Urban Landscape Task Force, has made several significant recommendations, including the need for: reclaiming city streets as a major component of the public realm; a broader view of the role of parks, landscape and open space in the life of the city in general; and a greater emphasis on the use of open space as a means of structuring and giving identity to the city. Quayle (1994) sees landscape as a central issue in the city and asserts that open space is the one city-making activity that can bring together what has essentially been a fragmented approach to city building over the last 35 years in North America. In this respect, Allsopp (1993) argues for a return to the figure/ground view of the city, wherein open space becomes a positive component in the city's fabric. Additionally, Simon, Thomsen and Rattray, in current research for the City of Winnipeg Department of Parks and Recreation, are exploring new definitions and types of open space and the manner in which current public perceptions of 'parks' influence the use, nature and future direction of park maintenance and development in the city.

Much needs to be done, too, to improve the ecological patterning and management of our urban greenway systems. From this perspective, McGuckin and Brown (1994) have developed a model for the enhancement of wildlife through appropriate stormwater management practices for urban greenways, while Baschak and Brown (1993) have developed an ecological framework for the planning, design and management of urban river greenways. These represent important first steps in ensuring a more scientific approach to ecological considerations in the preservation, development and management of greenways.

Parks, open space and public realm planning and design will continue to dominate the research and writings of many. The issues that require exploration and greater understanding are endless, ranging across such topics as: the economics of urban open space; how the split between parks and recreation interests can best be resolved; how new cultural groups in Canada will require different kinds of parks and open space; new forms of parks that elaborate on the nature of experience and dwelling in the modern city; and ways that landscape, as both a resource and genetic pool, can enrich the viability and sustainability of the city.

COMMUNITY PLANNING AND DESIGN

Perhaps because of a growing recognition and sense of embarrassment that the landscape architecture profession has in recent years largely abandoned the middle landscape in North America (those endless miles of ubiquitous edge cities that now so seriously scar the landscape and deny community), there is

now a significant re-examination of community within the profession and discipline. Nelischer and Taylor (Nelischer 1994) recently invited some 150 community leaders in southern Ontario to a conference at the University of Guelph to discuss the problems and potentials for the future of their local communities; Nelischer and Burcher are editing an upcoming special issue of *Landscape and Urban Planning* specifically addressing the nature and future focus of community design in North America. Nelischer (1994) argues passionately that we must be out in the community—in the media and other public forums—constantly battling the general public's lack of awareness and concern for what constitutes good community. He asserts that issues of neighbourhood and community must be taught in schools, such that, from an early age, children learn to think intellectually and spiritually about their social place in the world.

In this respect, the ideas and discussion go well beyond the Neo-Traditional and Pedestrian-Oriented Pocket Community discussions that have so dominated recent design literature on the community. Routaboule (1992), and Quayle and Driessen van der Lieck (1994) see community as a constantly evolving concept around a flexible, participatory landscape; it is the landscape which is the key to community identity and the location where community ideas and ideals are discovered and revealed. Paterson (1994b) argues that the neighbourhood must again be the central building block for urban democracy and suggests that a series of radical changes in the way people participate in society and the creation of place are necessary if both democracy and the urban landscape are to survive in any meaningful form. Connery (1994) in turn argues that sustainable communities are, by definition, participatory and participatory communities are sustainable.

In all of this, however, the work to date is only a small beginning. The confusion and blurring that occurs between top-down and bottom-up planning processes must be resolved. The lack of adequate community inventories, or of any holistic analysis of community problems and potentials, further confuses design-planning propositions for communities. Moreover, as many new suburban communities are initially very much the product of corporate image-making by developers, the democratic, participatory focus that must be at the basis of communities is again weakened. In such issues there is further, substantial opportunity for landscape architectural research, reflection and radical reform.

CULTURAL AND HERITAGE LANDSCAPES

Despite the youth of their country, a number of Canadian landscape architects have given much energy to improving the manner in which heritage and cultural landscapes are understood and incorporated into the design-planning decisions affecting landscape and place. Their efforts may be divided into four distinct categories. First, there has been considerable attention given to expanding the definition of landscape beyond being garden or mere artefact (Jacobs 1986, 1988; Paterson and Colby 1989). Secondly, there have been a number of detailed documentations made of specific landscapes ranging from the cemetery (Simon, McLachlan and Nelson 1993) to early prairie settlements (McLachlan 1988a). There are, thirdly, advocates such as Paine (1992a, 1993) who have made considerable progress, both through consulting and writing, in improving the way that historic places are developed, managed, and programmed. Paine

(1992b) also continues in her efforts to document the contributions of early Canadian landscape architects and organisations. Finally, several studies have been undertaken to define how heritage and cultural landscapes are identified, documented and inventoried (Paterson and Colby 1989); one study has developed a system for an eventual Canada-wide computer inventory (Pollock-Ellwand 1993).

Much work, of course, remains. Heritage sites and cultural landscapes are too often fixed or 'museumified'. In the process, they quickly lose their sense of authenticity and the very qualities that drew them to our attention initially. In addition, the nature and importance of the 'unseen' aspects of the cultural landscape (eg the unique order-structure of a small fishing village, or a trail that has long since vanished) are still poorly understood. If landscape, as Jacobs (1991a, p.48) suggests, 'is the field upon which our ideas of nature and culture are inscribed in continually changing reflections of each other', then it is apparent that we are only now beginning to consciously understand our role in dealing with past landscapes as we attempt to hold them in our memory for future generations. Further, at the other end of the designed-vernacular landscape continuum, Canada still lacks an authoritative text or set of papers that begin to describe the historic landscapes of Canada and their creators.

PLACE THEORY AND CRITICAL REGIONALISM

At one level, of course, notions of place and regionalism begin with an understanding of how past citizens expressed themselves in a specific landscape, or with an examination of our heritage and cultural landscapes. At another level, however, as understood in the notion of critical regionalism (Frampton 1985; Corner as quoted in McAvin et al. 1991), the concepts involve considerably more than this; it is on this expanded sense of regionalism that many Canadian researchers and writers are now focusing. For Hough (1990), in his second major text, *Out of place: restoring identity to the regional landscape*, it is an issue 'of necessity': until we realise effective energy and material conservation—until we see the need to cherish and sustain—true regionalism will never emerge. For McLachlan (1988a), Condon (1991) and Paterson (1994a), it is also a need to understand the art, poetry, colours, moods, and forms of particular landscapes and places. Lastly, for Routaboule (1993) it is essential that memory of particular places is part of every landscape design and management decision.

Ratray, the founding chair of the Department of Landscape Architecture at the University of Manitoba, has long championed the notion that landscape architectural programmes must assume a serious regional stance in their curriculum, and has focused much of his attention on specific regional studies (1994a). Both Ratray (1994b) and Paterson (1994a) argue that, in the face of a fast-growing universal culture, radical steps are needed to give culture the opportunity to express itself locally. Moreover, restating Hough's notion of necessity, Jacobs (1988; Jacobs and Mooney 1987), Mooney (1994b) and Connery (1994) assert that bioregionalism, expressed through the realisation of sustainable place, is the means by which good place is created—the manner in which culture and nature merge. From a different perspective, but envisioning a similar conclusion, Paterson (1993c) and MacLeod (1994) assert that it is through rediscovering the nature of the sacred—through the act of redefining the sacred in these times—that local place with its own regional sense of self will emerge.

No matter what perspective is taken, however, it is apparent that critical regionalism will assume an ever greater role in the research and writing activities of Canadian landscape architects.

LANDSCAPE PERCEPTION AND VISUAL RESOURCE MANAGEMENT

Research on landscape perception seems to be at a standstill. Too much of the work, particularly recent work on the landscape preferences of various visitors to forest and national parks, tends to operate in a theoretical vacuum. Several landscape architects (Hough 1990; Paterson 1990) and others (Carlson 1993) have questioned the approaches and results of recent investigations, particularly as they are used to make a variety of resource management and planning decisions. Such studies invariably ignore the role of meta-world views, personal experiences, knowledge, vocabulary and many other factors in perceptual preferences for various places and scenes. These recent studies often lead, as well, to recommendations that call for buffering 'unsightly' landscapes, 'blending' forest clear cuts to reduce their visual impact, or locating less 'acceptable' scenes and activities together where they are unlikely to offend viewers. These recommendations are essentially negative or coercive in their perspective; they border on the dishonest (Hough 1990). As Perkins (1994c) notes, a real breakthrough is needed for perceptual research to move forward.

Perkins (1992, 1994b; Perkins and Haider 1994; Perkins and Wong 1994; Wong and Perkins 1993, 1994) is the primary researcher on landscape preferences and visual resource management in Canada. His work ranges from an examination of how videos and various visual simulation approaches can assist in incorporating and improving a variety of visual resource management decisions, to more detailed assessments of highly specific visual resource management issues. In addition, he continues in his efforts to place visual resource management in the larger context of the world of aesthetics (Perkins and Wong 1994).

Miller (1988) has attempted to look for a breakthrough in visual resource management of forests by testing the proposition that there is a direct link between a healthy ecological landscape and an aesthetically pleasing landscape. While much additional work is needed on this topic, it can also be argued that if ecologically sound landscapes are not always found to be those which are preferred, then the issue is one of informing the viewers in order that they are able to consider scene as better than merely 'aesthetically inadequate'. In this respect, by examining perception in the context of values and place, Waring and Taylor (1993) are probably taking the issue in the right direction. As Mooney (1994b) notes, however, 'As landscapes come under greater and more diverse land use demands in an increasingly populated world, the conflicts will increase. The need, as such, to understand human perceptions and their role in resource management will never go away.'

LANDSCAPE PLANNING, ENVIRONMENT AND SUSTAINABILITY

Since the publication of McHarg's seminal text, *Design with nature*, virtually every discipline remotely interested in some aspect of landscape has undertaken major studies related to landscape and attempted to assume a major role in environmental planning. Such moves are desirable if landscape and environment

are to receive the attention they deserve but, often, given their numbers, these professions and disciplines have tended to push the landscape architectural profession (with notable exceptions) into the background. Moreover, despite this great increase in interest regarding landscape planning and, more recently, sustainable landscapes, effective landscape planning decisions remain rare. It is in this gap between traditional research and policy, on one hand, and everyday action, on the other, that landscape architectural writing and research in Canada have been the most active and effective. Three examples are given here.

In many ways the leader in the profession has been Peter Jacobs (1986, 1990, 1991b; Jacobs and Munro 1987; Jacobs and Kemp 1988; Jacobs, Mulvihill and Sadler 1993; Jacobs, Bouchard and Lepine 1994). As the chair of numerous environmental task forces in Canada and a member of the International Union for the Conservation of Nature (IUCN), Peter Jacobs has made the roles of values, time and people explicit in the environmental planning process. He (Jacobs 1988) describes landscape as the 'confluence of our ideas of nature and of culture'; as such, it is crucial in any environmental decision-making process to consider what we value, who the 'we' are in the valuing, and how such values are likely to hold up over time (Jacobs and Munro 1987; Jacobs 1991a). Further, Jacobs has made this necessity central to the political process in Canadian environmental planning. All the computer-generated models, planning theories and techniques, and rules and regulations, he argues, will not work without an overriding commitment to values, people and place. Jacobs has also been one of the first in Canada to openly attack the inherent conflicts that exist between sustainability and a global economy.

At a second and equally important level, the profession of landscape architecture in Canada has really been the first to recognise and begin to use the work that is being developed in spatial ecology by landscape ecologists (Domon, Bouchard and Garipey 1993) and certain landscape architects (Mooney 1993; Baschak and Brown 1993). They are helping to structure better methods for landscape assessment, and to replace traditional, two-dimensional ecological modelling with a three-dimensional spatial modelling that more accurately describes the natural environment and its processes. Similarly, Deadman, Brown and Gimblett (1993) have pioneered the use of cellular automata to model the growth of rural residential development in agricultural areas; the model provides a vehicle for predicting the consequences of bylaws, policies and procedures on the landscape and environment.

Finally, the profession has argued, with increasing success, that much recent planning theory, including such concepts as disjointed incrementalism, provides models and views of the planning process that are too reactionary and too slow to respond to the needs of the times (Mooney 1990; Paterson 1990; Quayle 1994). What is required instead is a more visionary, proactive description, of the possibilities (Jacobs 1988; Perkins 1994), including the possibilities of catastrophe, and a recognition of the need for risk management.

LANDSCAPE MANAGEMENT AND RECLAMATION

Given the extent to which landscape has been altered and, in many instances, seriously degraded, the manner in which we manage and reclaim our landscapes is growing in significance in landscape architectural research in Canada. Attention is being directed to how we manage natural and cultural conflicts in

park and heritage landscapes (Paine 1993); how we use landscapes to control water pollution and control energy, as in Ron Williams' 1991 award-winning design for *Parc Plage*, Isle Notre Dame in Montreal; how we restore native prairie landscapes and improve water conservation in prairie landscapes (Thomsen 1993); how we manage heritage urban forests (Fife 1991); how we manage regional landscapes ecologically (Domon 1994); and how we reclaim highly disturbed landscapes, notably wetlands (Mooney 1992). This is an aspect of landscape which is still developing, but it can be expected to receive growing attention in the coming years. As Mooney (1994b) notes, 'Ecosystem reconstruction is a central issue in sustainability. Many landscapes are huge vacuums awaiting renewed opportunities for ecological structure and function. One important role of landscape research is to determine that landscape structure and how it can be realized.'

COMPUTERS, LANDSCAPE ARCHITECTURE AND THE ENVIRONMENT

The profession has made significant efforts to incorporate computer technology into landscape design and planning. The work of Danahy, Fife and Wright (Danahy 1991, 1992; Fife 1994a) at the Centre for Landscape Research (CLR), University of Toronto, has been notable in this respect. The work of the Centre has focused on three major concerns: to improve three-dimensional modelling in motion and through time as a way of better understanding landscape and change; to merge GIS and CAD information quickly, such that the computer serves as both an interactive and iterative tool for design-planning decisions; and to provide clear, visual interpretations of design-planning decisions that can facilitate public participation in the planning process. The work of the Centre has ranged from modelling several downtown cores (as a basis for assessing a variety of zoning propositions), to modelling the proposed National Ceremonial Route in Ottawa (as a means of communicating the proposals and various options to the client and general public). Their work has won several national and international awards.

Similar efforts are being made at the University of Guelph (Brown and Stoltz 1993; Perkins and Haider 1994) through the Landscape Research Group at Guelph (LRGG), where greater emphasis has been placed on modelling regional, agriculture and resource landscapes; and at the University of Manitoba (Perron, Epp and Dexter 1994) through their CANLAB and Housing Research Institutes, where various simulations are being undertaken to assess different medium density housing environments.

Many significant problems remain despite these major efforts. Work continues to be hampered by the costs of keeping up with the rapidly changing technology, the difficulties of having good inventory information available as input, and the difficulties in keeping the technology user-friendly (Wright 1994). Nonetheless, Perkins (1994c) believes that 'Maintaining our role as a profession in Canada is tantamount to maintaining our ability to be in charge in the management of information'.

There are, of course, a number of other areas of research interest being undertaken by various faculty members across Canada. Brown (Brown and Gillespie 1994a, 1994b) continues his detailed, highly scientific examination of climatic modelling for landscape planning and design decision-making.

McLachlan (1988a, 1988b) still researches and photographs the Canadian prairie landscape with love. Nelischer's (1988) role in investigating the technology of landscape architecture remains important. Given the endless aspects of landscape that are there to explore, it is not surprising that most faculty members maintain two or three specific research interests rather than simply focusing on one aspect. As well as being necessary, this diversity is, I suspect, extremely healthy and enriching.

At the same time that these research efforts are being realised, faculty members are also serving their universities, professions and communities at a number of significant levels. Bernard Lafargue is an Associate Dean in the Faculté de l'aménagement, and Irene Cinq Mars is Vice-Rector of Teaching at the University of Montreal. Ron Stoltz and Maurice Nelischer have chaired the North American Council of Educators in Landscape Architecture. Al Rattray, Peter Jacobs, Jim Taylor, Doug Paterson, Michael Hough and John MacLeod have completed terms as presidents of the Canadian Society of Landscape Architects. Further, virtually every faculty member serves on two or more local, provincial, national or international executive bodies or boards.

Future directions

In describing above the various activities in landscape architectural research in Canada, I have attempted to identify some specific areas for future research in each general research category. It is my belief, however, that there are seven overriding factors that must guide the future of all landscape architectural research, no matter what an individual's particular research focus might be. They are: the need for many, varied research approaches; the importance of rigorous evaluation systems; the necessity of clarifying and elaborating our knowledge base; the need for 'good' ideas and theories that can be tested; giving research priority to issues of critical regionalism and sustainability through design as critical inquiry; the improved dissemination of information to others such that design and landscape are more inclusive; and the fundamental need for and expression of joy in all aspects of the research. Each of these points is briefly elaborated upon below.

MAINTAINING MANY, VARIED RESEARCH APPROACHES

Both quantitative and qualitative standard research methods must be taught, used and improved as they relate to landscape, place and design. One approach should not be seen as better than the other; they must each be understood in terms of their relationship to one another and the needs of the specific research questions at hand. Any split between quantitative and qualitative is ultimately both limiting and counter-productive. In addition, those undertaking qualitative research in particular need to learn how to 'think better' (Riley 1990), to ground their work in logic and philosophical thought.

DEVELOPING MORE RIGOROUS EVALUATION SYSTEMS

Both quantitative and qualitative evaluation methods are essential if design is to function properly as an iterative process. On the one hand, Post Occupancy Evaluations (POE) must be used more frequently and effectively; on the other hand, design as an act of critical inquiry must develop a tradition and set of acceptable procedures for design criticism. To date, we have been woefully afraid of criticism.

ELABORATING OUR KNOWLEDGE BASE

Rigorous research methods together with equally rigorous evaluation procedures give us the basis for slowly, but with certainty, developing a distinct knowledge base. It is essential to have a proactive knowledge base in order to define the important confluence of nature and culture through the designed or managed landscape. Too much of the current knowledge base is reactive; it tells us one view of what has happened but it rarely moves on to tell us what should be done; it is a form of post occupancy evaluation with no long-term purpose in mind.

CREATING 'GOOD' IDEAS AND THEORIES

There is a serious shortage of good ideas in the world at present and an even greater shortage of theories that postulate what 'might be' as well as 'what is'. The human condition must be driven by the world of possibilities; design is about possibilities. Good ideas, tested through the act of design as critical inquiry, in turn drive our knowledge base forward.

GIVING PRIORITY TO CRITICAL REGIONALISM AND SUSTAINABILITY THROUGH DESIGN

The position supporting this idea is essentially that universal culture is not sustainable; it is a condition in which nature and culture never merge and design operates without meaning or purpose. Giving intellectual priority to critical regionalism and sustainability through the act of design (and management) as critical inquiry allows us to find our intentions and, in so doing, to understand the nature of our knowledge base. It is suggested that all other quantitative and qualitative research and design investigations must clarify their intent with respect to this overriding priority.

INFORMING AND INCLUDING OTHERS

As Peter Jacobs (1994) and Maurice Nelischer (1994) so often insist, we must talk more about our ideas for landscape and place to others; we spend too much time talking covertly to ourselves. This discussion with others is needed for several reasons. First, it reminds us that our activity is a highly multi-disciplinary adventure. Secondly, we must continually be advocates for landscape and place, for nature and culture, reminding our fellow citizens of this crucial aspect of our being. Finally, as Wright (1994) so correctly states, we must reach a state where '[t]he landscape architectural discourse becomes part of the common discourse of our culture'. To achieve this state we must include everyone at all times in the process of making.

EXPRESSING JOY IN OUR THINKING AND DOING

Aldo Leopold (cited in Jacobs 1991a; Perkins 1994a) once stated that 'it is inconceivable that an ethical relationship to land can exist without love, respect and admiration for land and a high regard for its value'. Similarly, Jane Jacobs' (1961) observations in *The death and life of great American cities* showed us what is there to be seen in a place, and in human nature, when we look upon that scene with open, attentive and caring eyes. Both Leopold and Jacobs grabbed our attention—included us in their knowledge—precisely because of the clear evidence of joy expressed in how they saw and thought about the world. Such expressions of joy must be central to how we, as landscape architectural

researchers and designers, look at, explain and create our landscapes. To do less is to risk certain failure.

A brief conclusion

The American essayist and critic Joseph Wood Krutch (1929) once stated that every time a value is born, existence takes on new meaning and every time one dies, some part of that meaning passes away. Later, the Japanese critic, Jun'ichiro Tanizaki (1977) asked what the modern world would be like if Japan had risen to industrial and technological prominence before the western nations and placed their own particular aesthetic sense over the productions that ensued. Such observations and questions never cease to astound; they are precise, rich, pertinent and, above all else, eternal; they are the fundamental stuff of inquiry in and into the human world in which landscape architecture is situated.

Despite a late and uncertain beginning, and despite the small size of our profession, as well as of our discipline in the halls of academe, the last five years have witnessed an explosion in landscape architectural research and publishing in Canada. The discipline is clarifying its intentions; it is in a position to postulate better questions; and it is certain enough in its aspirations to reach out to others in the larger society. The discovery, explication and creation of landscape will continue to excite and challenge those who love landscape and care enough to ask questions.

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