

Regional Narratives of Sustainable Architecture in Canada

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ABSTRACT: The emergence of regionalism as a theme in contemporary Canadian architecture has been paralleled by an evolution in sustainable design; recent manifestations of regionalism revisit the instrumentalist roots of modernism but take their cues from local material and formal traditions, many of which represent passive and low energy design solutions developed in direct relation to local climatic and environmental conditions. This paper proposes the idea that sustainability can be understood as part of a larger contemporary postmodern sensibility that is linked to current thinking in the area of regionalism. Building on Kenneth Frampton's 1983 essay "Towards a Critical Regionalism: Six Points for an Architecture of Resistance" – which promotes the pursuit of an architecture that responds to local conditions – recent publications such as Vincent B. Canizaro's Architectural Regionalism: Collected Writings on Place, Identity, Modernity, and Tradition help to frame a discussion of regionalism as an expression of the nuanced, contextual and multivalent quality of the post-colonial voice in contemporary critical discourse. In Canadian architecture, a clear and sustained national identity has remained elusive, challenged by a multiplicity of cultural influences, diverse geographic conditions and distinct regional narratives. This paper outlines some particularities and regional variations across distinct bioclimatic zones in Canada that characterize this phenomenon.

Keywords: sustainability, regionalism, history, material culture, Canadian architecture, place-identity, narrative

INTRODUCTION

In the final years of the last century, as the practice of sustainable architecture gained traction within the architectural profession, it was largely understood through an approach that favoured scientific analysis and quantitative assessment methodologies. In North America, this phenomenon was underscored by the adoption of the U.S. Green Building Council's LEED™ Green Building Rating System (USGBC 2003) as the yardstick by which to measure a building's green credentials, which was adapted for use in Canada by the Canadian Green Building Council in 2004.

Since that time a considerable literature has emerged that seeks to situate sustainable design within the larger critical discourse of architecture. Challenging the dominance of quantitative assessment and calling for a more holistic approach to sustainability, Guy and Farmer propose "a fundamental re-orientation of values to engage with both environmental and cultural concerns... current technologically based sustainable architectural approaches and design methodologies often fail to coincide with the cultural values of a particular place or people... Contemporary architecture should therefore seek a greater understanding of local culture if it is to be sustainable" [1].

Despite the fact that green building practice had been dominated by quantitative concerns for energy

performance, the important regional dimension of sustainable practice should appear self-evident. While such an approach addresses not only environmental but also cultural and social aspects of sustainability, even from the narrow perspective of energy consumption, principles of passive and low energy design (solar orientation, natural airflow and drainage patterns) are key to effective building performance. At a more strategic level, use of local labour, materials and energy sources help reduce the ecological footprint of construction projects [2]. These strategies have always been staples of vernacular traditions; Niklaus Kohler notes that "Because of the shortage of resources, traditional vernacular building practices have tended intuitively, through trial and error, towards economically and environmentally optimal solutions" [3]. In Canada, where a harsh climate, geographic isolation of settlements and limited access to technology demanded the development of vernacular responses—in both indigenous and early settler architecture—very carefully attuned to local conditions.

These two narratives of vernacular architecture continue to inform contemporary practice and offer rich possibilities for the pursuit of passive and low energy strategies for sustainability. The indigenous narrative is centered on a strong ethic of environmental stewardship achieved through a strategy of minimal intervention resulting in a reduced ecological footprint [4], while that

of the early settlers demonstrates highly pragmatic cultural and technological responses to extreme climatic conditions. Both however pose difficulties relative to the expectations of building performance in contemporary architecture. The challenge is to distil those elements of the vernacular that address building performance and sustainability without sacrificing the standards of health, safety and comfort that form the basis of contemporary technologically advanced building.

The pursuit of a contemporary architecture that addresses the delicate balance between local place identity and a global architectural culture, between vernacular traditions and modern, technologically advanced building practices, formed the basis of Kenneth Frampton's 1983 essay "Towards a Critical Regionalism: Six Points for an Architecture of Resistance" [5]. Frampton's seminal essay provides a starting point for the articulation of a broader argument for sustainable architecture. A critical re-reading of Frampton's essay—in particular, section 5: "Culture Versus Nature: Topography, Context, Climate, Light and Tectonic Form"—raises the possibility of a discourse on sustainable design that reaches beyond its traditional energy-efficient confines. Frampton states, "Critical Regionalism necessarily involves a more directly dialectical relationship with nature than the more abstract, formal traditions of modern avant-garde architecture allow." [6]. Many of the elements described by Frampton lend themselves to the pursuit of an architecture whose responsiveness to local conditions leads not only to greater energy and material efficiencies, but that also address local cultural traditions, leading to a greener and more culturally resonant architecture.

REGIONAL RESPONSES TO SUSTAINABLE ARCHITECTURE IN CANADA

In 2005 the authors prepared an exhibition and accompanying publication, *41° to 66°: Regional Responses to Sustainable Architecture in Canada*, which presented a body of work that approached sustainable design by adopting traditional regionalist strategies, but that also participated in the broader global discourse of contemporary architecture [7]. The projects represented the principles articulated in Frampton's description of Critical Regionalism, attempting to offer an alternative to a universalizing architectural culture (as represented by International Style Modernism) and superficial, nostalgic historicism (as represented by mainstream Postmodernism). Various critics have pointed out problems with this formulation; for some, the emphasis on criticality has resulted in the misrepresentation of traditional connections to regions as nostalgic [8]; others are troubled by the potential contradictions inherent in a

practice that "proposes to value both technological means and the propinquity of place as positive forces" [9].

An alternative view can be articulated that embraces the hybridity of these apparently contradictory values. This may be particularly relevant to the Canadian context, in which, by virtue of its history, has evolved an interesting tension between the specificity of local geographic and bioclimatic conditions, and the projects of colonization and nation-building. European settlement began in earnest in the seventeenth century and, within a period of 200 years, expanded from its original concentration in Eastern Canada across the continent to the Pacific Ocean. By the mid-19th century the predominant sources of immigration had begun to shift from France and the British Isles to include Central, Eastern and Southern Europe, as well as the first wave of people from Asia, rendering any claim to shared cultural practices increasingly tenuous. In effect, this condition situates Canada clearly within the project of modernity, whereby its population was effectively composed of individuals seeking to participate in the liberative project of the Enlightenment and of nation building, casting off ties to place in pursuit of opportunity [10].

Given the cultural diversity of the Canadian population, the regionalist discourse in Canada is much more directly tied to notions of bioclimatic region and performance-based building practices, which formed the basis of analysis in *41° to 66°* [11], than in the "blood and soil" chauvinism that informed the discourse surrounding regional and national identity in Europe in the 19th and 20th centuries [12]. Appropriate passive and low energy responses to the unforgiving climate that characterises the overwhelming majority of the Canadian land mass were developed not as a self-conscious or polemical pursuit, but as a matter of survival. In this sense it is possible to discuss regional building responses as less immersed in nostalgic notions of tradition, and more in terms of pragmatic instrumental responses to a set of physical rigours. This situates the work within the adopted narrative of modernism, whereby architecture is generated not from abstract theory or formal traditions, but in direct response to the requirements of program, site and building technology.

It is important to note that, in addition to the Modern narrative of technological optimisation, regionally inflected architecture in Canada can be understood in the context of a larger national narrative that informs Canadian cultural identity. This has been most famously addressed by the literary critic Northrop Frye in his description of the "garrison mentality", which maintains

that the Canadian identity has its roots in “Small and isolated communities surrounded with a physical or psychological ‘frontier’, separated from one another...: communities that provide all that their members have in the way of distinctively human values... confronted with a huge, unthinking, menacing and formidable physical setting” [13]. Paradoxically, Frye notes that despite this ambivalent relationship to nature, which results in the observation that “in both architecture and arrangement, Canadian cities and villages express rather an arrogant abstraction, the conquest of nature by an intelligence that does not love it” [14], the Canadian identity is rooted in a pastoral myth, a “nostalgia for a world of peace and protection, with a spontaneous response to the nature around it, with a leisure and composure not to be found today” [15].

This pastoral myth at the root of Canadian social mythology can be seen to inform a variety of regional narratives across the country. Despite the fact that today Canada is among the most urbanized nations on Earth (according to the 2006 census, 80% of the Canadian population lives in areas classified as urban) [16], the pastoral myth evoked by Frye continues to form the basis of regional identity. Eggener’s critique is relevant here, as it situates the discourse of regionalism within a tension between what might be considered the centre and the periphery. Arguing that this terminology is often applied to “the architecture of developing, postcolonial nations” and “imposed from outside, from positions of authority” [17], he reveals the tension that exists between a self-identified centre and an often marginalised and romanticised periphery. For much of Canadian history, this narrative found expression in the geographic distribution of political and economic power, with central Canada (and in particular the metropolitan centres of Toronto and Montreal, and the seat of the federal government, Ottawa) controlling the national agenda, resulting in the marginalisation and alienation of other regions in the country. This in turn has helped propagate a variety of regional narratives, in some cases imposed from outside in the form of stereotypes that continue to inform perceptions of regional identity today. This paper examines regional narratives of three distinct areas of the country – Atlantic Canada, the West Coast and the Arctic – to discuss the development of distinct regional architectures and attitudes toward sustainability that play on and have been influenced by these narratives.

ATLANTIC CANADA

As the first point of landing for European settlers, the Atlantic Provinces have the longest history of colonisation in Canada, predating the period of mass immigration and industrialisation. The region is still

understood as a repository of traditional, pre-modern social structures that value the importance of family and community, where individuals have a deep sense of connection with place. This is partly due to the fact that the majority of Maritimers share a common ancestry, represented in the durability of the Celtic culture that continues to dominate the region. The Maritime provinces are also recognized as a place of strong material culture and craft traditions, in building, folk art, music and storytelling, emerging from a culture of resilience due in large part to a history of economic deprivation and reliance on preindustrial economic activities. Traditional industries such as fishing, shipbuilding and agriculture are no longer central to the economy of the region but still strongly inform its cultural mythology.

The work of the celebrated Nova Scotia practice MacKay-Lyons Sweetapple Architects (MLSA) borrows the techniques and vocabulary of boatbuilding to create an architecture that is contemporary in expression, yet strongly invokes the region’s pastoral ethic. The firm’s body of work reveals an interest in prefabrication, economy of materials, an articulated response to the harsh North Atlantic weather and the flexibility demanded by changing seasonal occupancy. In response to the remote location and short construction season, several of the firm’s projects are approached with a strategy of off-site fabrication and on-site assembly of component elements largely prefabricated in a shop environment, reflecting the influence of the long-standing Atlantic Canadian boatbuilding tradition of lightweight portable structures.

Drawing on a more remote period of the region’s history, Halifax-based Richard Kroeker’s work with the Mi’kmaq First Nation of Cape Breton represents an important effort to extend and update the building traditions of the region’s Aboriginal people. Kroeker’s structural strategy incorporates the use of small scale round wood poles. Young spruce and pine trees are fashioned as curved arch truss members. These trusses are assembled to form a lightweight structural arch which, deployed in series, form a sinuous, lyrical vaulted space. While the First Nations people Kroeker works with do not see the architecture as directly or symbolically representative of their culture, they recognize in it characteristics that resonate with their relationship to place.

THE WEST COAST

At the other extremity of the country, the West Coast occupies a dramatically different but equally peripheral role in the national consciousness. The region is primarily recognised for its dramatic natural beauty and

its representation as a majestic wilderness. The relatively late arrival of European colonisation to the region and the extraordinary diversity of its current population has inhibited the establishment of a singular colonial cultural identity (its main urban centre, Vancouver, is a very young city that is influenced as much by Asian as by European antecedents), such that the dominant cultural identity of the West Coast is still strongly marked by the local First Nations. The Aboriginal presence is much more evident in Western Canada, which was still being settled in the late 19th century, long after the East had been extensively Europeanised. As a result, the influence of First Nations architecture has been more pronounced in the West, particularly on the Pacific Coast, the indigenous peoples of which, by virtue of a more benign climate and generous resource base than was typical in the rest of Canada, developed highly sophisticated monumental and sculptural traditions, with post-and-beam longhouses that typified the architecture of several First Nations including the Haida, Kwakiutl, Tsimshian, Tlingit and Coast Salish peoples.

In response to these iconic antecedents, an early wave of regional influence emerged, characterized by the expressive use of large timber post-and-beam structure inspired by First Nations architecture. As modernism came under increasing criticism during the 1960s and into the 1970s, regionalist responses emerged that invoked not just the pragmatic and phenomenological, but also the political and symbolic. One important example of this is Arthur Erickson's Museum of Anthropology at the University of British Columbia, completed in 1976. The Museum involves the transformation of the First Nations post-and-beam timber construction into a monumental concrete architecture that is at once resolutely modern and timeless. The iconic character of the tiered post and beam frames of the building reflects the robust tectonics of the monumental cedar structures of Haida and Kwakiutl longhouses. The abstracted yet explicit reference to the local vernacular type of a long-suppressed community represents a new, self-consciously symbolic and politically charged regionalism that resists the increasing dominance of universal culture.

More recently, Vancouver's Patkau Architects have emerged as important proponents of an architecture that is highly attuned to the specificity of a particular locale while still clearly participating in a global architectural culture. The work of the firm addresses pragmatic and phenomenological responses to place – including passive and low energy strategies such as orientation and massing, large and expressive overhanging roofs that deflect rain and create sheltered outdoor spaces that

emphasise the climatically optimized connection between interior and exterior, extensive glazing that admits generous daylighting, an essential feature in the context of the rain forest environment – as well as a strong cultural and symbolic agenda that represents these elements in an iconic, tectonic regional identity.

With projects like those of the Patkaus, we begin to see an emergent movement that marries an interest in a highly specific regional and local cultural response with issues of energy performance. In the Canadian context, the primary response to sustainability has been, for the most part, related to the development of passive performative strategies of building design, based on solar orientation, thermal mass, natural ventilation and daylighting, with careful attunement to local conditions based on a phenomenological, site-specific and idiosyncratic design methodology.

THE ARCTIC

Of all Canada's regions, the Arctic remains the most distant from the Country's primary population base as well as home to its most challenging climatic conditions, and therefore most subject to Northrop Frye's narrative of the garrison mentality. While the technologically advanced cosmopolitan society that occupies the southern extremities of the Canadian land mass has largely overcome this trope, the vast, sparsely populated north, with a "huge, unthinking, menacing and formidable physical setting" [18] is still very much defined by these characteristics. According to the 2011 Canadian census, the three northern territories – Yukon, Northwest Territories and Nunavut – which constitute almost 39% of the vast Canadian land mass, are home to only 112,000 of Canada's almost 35 million inhabitants [19], a paradigmatic example of Frye's sparsely populated "small and isolated communities surrounded with a physical or psychological 'frontier'" [20].

The harshness of the northern climate and landscape attracted far fewer European and other settlers than did other parts of Canada. As a result, the most significant regional architecture is derived from the highly resourceful vernacular forms of shelter developed by the indigenous northern people.

The work of two contemporary northern practices develops regional themes that draw, in part, on this Aboriginal precedent. The work of Kobayashi + Zedda Architects, based in Whitehorse, Yukon, is informed by the First Nations traditions of the Western Arctic, which made use of scarce but available timber to construct tepees and other temporary structures typical of nomadic peoples. Kobayashi + Zedda work within this tradition to produce buildings that are highly responsive to

extreme northern light conditions, seasonal variations and radical temperature fluctuations, while also reflecting important requirements for flexibility, an important dimension of sustainability in remote northern communities.

Pin/Taylor Architects, based in Yellowknife, Northwest Territories, have worked extensively around the eastern arctic and, in response to the remoteness and small size of northern settlements, have developed a highly efficient approach to building, including the development of hybrid, multi-purpose structures for communities that cannot afford the luxury of single-purpose facilities. The orientation and form of their buildings respond to the sun and wind patterns of the site, minimising snow accumulation and drifting around entrances. Clerestory glazing is designed to maximise the amount of light entering in the winter when daylight is limited, while reducing the amount of unwanted heat gain and glare created by a low-angle summer sun that never sets. Their work combines an intimate knowledge of the northern climate with an understanding of and sensitivity to social concerns, involving the community in the conceptualisation and construction of the buildings.

REGIONALISM AND POSTCOLONIALISM

The examples cited thus far demonstrate how the paradoxical narratives identified by Frye – the “garrison mentality” response that suggests “the conquest of nature by an intelligence that does not love it” [21], and the pastoral myth that represents a “nostalgia for a world of peace and protection” [22] – continue to inform contemporary architecture and the regional narratives from which it springs. The marriage of contemporary passive and low energy strategies with the evocation of early settler responses to the foreboding Canadian landscape and climate, and the extensively mythologised understanding of Aboriginal architecture developed with a keen affinity for the rhythms of nature, provides rich narrative sources that contemporary architects continue to tap.

While in many respects this approach to architecture appears to have yielded some very successful results in the Canadian context, it is important to consider critiques of Critical Regionalism that raise important questions regarding the appropriation of cultural antecedents to create an ostensibly regional architecture: “When applied, as it has often been, to the architecture of developing, postcolonial nations, the term *critical regionalism* exemplifies a phenomenon described by the urban historian Jane M. Jacobs: ‘Just as postcolonial tendencies have always been produced by colonialism, so colonialist tendencies necessarily inhabit often

optimistically designated postcolonial formations.’ Critical regionalism is such a formation. Identifying an architecture that purportedly reflects and serves its locality, buttressed by a framework of liberative, empowering rhetoric, critical regionalism is itself a construct most often imposed from outside, from positions of authority.” [23]

Despite Canada’s identity on the world stage as an advanced developed nation, it is widely acknowledged that it remains, in some respects, a developing postcolonial nation. This specifically has to do with the plight of its Aboriginal populations – the First Nations – who frequently live in third world conditions with vastly differing health care and social services than the remainder of the population. With this in mind, it is possible to understand how, applying Eggener’s critique, references to Aboriginal antecedent by non-Aboriginal urban architects can be read as a form of neo-colonialism. While this may seem a somewhat exaggerated critique in the context of the types of projects discussed thus far, it becomes a potentially more important perspective when applied to a reading of the north.

In recent years the north has become the focus of attention from numerous sources, including government, the resource industry, and most recently, architects. Southern urban architects have increasingly directed their attention to the Arctic in greater number than previously, not so much in the execution of actual built projects, but rather in the area of research and a resulting set of proposals that seek to address some of the difficult challenges of building in a region of climatic extremes and within a destabilised cultural context, where the population is overwhelmingly Aboriginal, and whose traditional lifestyle faces disruption from expanding economic activity driven from the south as well as the impacts of climate change. Several recent recipients of the Canada Council Prix de Rome in Architecture have focused their work on Arctic themes. In 2006 Kobayashi + Zedda visited the circumpolar regions of the north including Iceland, Greenland, Russia, Norway and Finland, areas that share common features like the boreal forest, extreme sun paths, harsh climates and predominant Aboriginal cultures [24]. The 2009 Prix de Rome recipients, RVTR, based in Toronto and Ann Arbor, Michigan, investigated traditional and emerging technologies, buildings and communities for living in cold climates, particularly in Japan, Iceland, Scotland, Norway, Sweden, Finland and Russia [25]. The following year’s Prix de Rome winners, Lateral Office, also of Toronto, investigated and documented cold-climate settlement forms, looking at the challenges and opportunities of a public infrastructure based on a highly dispersed, nomadic population [26].

While the work of Lateral Office clearly seeks to challenge the mythologised narrative of Canada's Arctic, the uneasy question remains of the relationship between a sophisticated, southern urban professional practice clearly participating in the globalised discourse of architecture, and a developing postcolonial culture at the crossroads of potentially profound changes. While these efforts clearly seek to provide an alternative to the thoughtless ravaging of local environments and cultures that typically accompany large scale resource development, it is also hard to escape the analysis that this represents, however well-intentioned, another example of ostensibly local solutions "imposed from outside, from positions of authority" [27].

CONCLUSION

We began this paper with the proposition that sustainability can be understood as part of a larger contemporary postmodern sensibility that is linked to current thinking in the area of regionalism. Building on the idea of Critical Regionalism and its associated critiques, we sought to frame a discussion of regionalism as an expression of the nuanced, contextual and multivalent quality of the post-colonial voice in contemporary critical discourse. It is clear that the adoption of regional characteristics, whether passive and low energy performative strategies or more culturally informed and inspired tectonic narratives, have resulted in a rich and diverse array of contemporary architectural expression that address questions of both environmental and cultural sustainability. However, architects practicing in this manner, especially those operating within the globalised discourse of architecture that typifies the cosmopolitan, urban, sophisticated nature of the Canadian profession and its institutions, must remain vigilant regarding the complex interrelationship of centre and margins, and wary of recolonising the periphery by imposing solutions from outside, from positions of authority. As Lewis Mumford, an early advocate of regionalism, reminds us: "Regionalism is not a matter of using the most available local material, or of copying some simple form of construction that our ancestors used, for want of anything better, a century or two ago. Regional forms are those which most closely meet the actual conditions of life and which most fully succeed in making a people feel at home in their environment: they do not merely utilize the soil but they reflect the current conditions of culture in the region." [28]

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