

SUSTAINABLE ARCHITECTURE AS A CULTURAL PROJECT

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Keywords: sustainability, critical regionalism, history, bioclimatic design, material culture, Canadian architecture, place-identity, environmental ethics

Abstract

The practice of sustainable architecture has largely been understood as an issue of technology and energy performance. Consequently the discourse surrounding it has remained separate from the broader discussion of architecture as a cultural project. However, for sustainability to fully take hold and bear fruit, it must be understood within the broad cultural scope it clearly embodies. This paper discusses the important contribution that strategies for sustainable architecture can make to the broader architectural culture. This is done in the context of an ongoing research project, *41 to 66: Regional Responses to Sustainable Architecture in Canada*, examining the relationship between sustainable building practices and regional architectural and material cultural traditions. The project also involves an examination of contemporary green building design in Canada, using the analytic framework of three reference terms—*culture, process and assembly*—to explore parallels between the current practice of sustainable architecture and other contemporary cultural discourse. The analysis builds on Kenneth Frampton's notion of Critical Regionalism, which seeks to simultaneously address local conditions and the contemporary global culture of architecture.

A critical re-reading of Frampton's 1983 essay "Towards a Critical Regionalism: Six Points for an Architecture for Resistance" provides an interesting touch point for the articulation of a cultural argument for sustainable architecture. In particular, section 5 of the essay, "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/emission-efficient confines.

Frampton argues in favour of an architecture resistant to an overwhelming global culture that threatens local place-identity. While Frampton couches this in the phenomenological concern for "place-making", a contemporary architectural response, sustainably appropriate to its context on a variety of levels, would have the tendency to be linked with local traditions of the material culture of the region. Many of the elements described by Frampton lend themselves to the pursuit of an architecture whose responsiveness to local conditions leads both to greater energy and material efficiencies, and addresses local cultural mores and tectonic traditions, leading to not only greener but also more meaningful architecture which departs from the canon of universalizing international modernism.

With this construct in mind, it is possible to begin to articulate a theoretical basis for sustainable architecture that brings the discourse outside of the simulation lab and into the mainstream of critical practice. This can serve as an important model for a contemporary architecture that adopts strategies of sustainability related to local climatic and geographic conditions, cultural practices and mores, but that also participates in a broader critical discourse by engaging sustainability not only as technique or method, but as a cultural paradigm.

Establishing the sustainability paradigm as a cultural discourse points to a more holistic foundation for architecture that encompasses and expands on vital benchmarks already established in current sustainable practice models. Herein lies architecture's potential, transforming from a contributor to the bedevilling problems of human impact on the global ecosphere, to being part of a sustaining solution to its, and our, ongoing viability.

1. Introduction

We are currently witnessing the early stages of what will be recognized as a major shift in the culture and technology of architecture. The move toward greater sustainability in all aspects of human activity is demanding from architects and critics a broad and sweeping critique of the way buildings are made and used.

Throughout history architecture has played a crucial role in helping to define humanity's relation to its larger surroundings. Architecture has not merely been a means for providing shelter, but has operated as a constructed model of a larger order, a vehicle embodying the temporal and cosmological understanding of the world in which we live. As such, architecture has the potential to bridge between the pragmatic and the transcendent, playing both a practical and a symbolic role. In this sense architecture can play a pivotal role in the larger paradigmatic movement of sustainability.

To date the practice of sustainable architecture has largely been understood from the perspective where "Scientific analysis... tends to occupy a central position in conventional methods for categorising, understanding and assessing the 'greenness' of buildings. The dominant approaches are characterised by *performance threshold* models, which assess the impact of a building against a range of criteria, which can be directly measured and weighted" (Guy and Farmer 2000: 74). In North America, this phenomenon is underscored by the adoption of the U.S. Green Building Council's (USGBC) LEED® Green Building Rating System (USGBC 2003) as the yardstick by which to measure a building's green credentials. Recently adapted for use in Canada by the Canadian Green Building Council (CaGBC), LEED® now forms the basis for an understanding of what constitutes green building across the many bio-climatic zones of the United States and Canada.

The adoption of such a universal framework inevitably rubs up against the fact that regional variation has long represented a significant aspect of architectural culture in Canada. This legacy is to some extent represented in the CaGBC's adaptation of LEED® for the Canadian context. Despite—and perhaps in response to—recent criticism that LEED® fails to adequately address regional variation in the allocation of credits (Kumar 2002), the Canadian version includes regional variation as an important element in the implementation of locally appropriate design responses. This is primarily reflected in the *LEED-Canada Guide for facilitating use of the LEED® Green Building Rating System* (Cole 2003), namely Section Four: Creating Regional Application Guides; Section Five: Sustainable Sites; and Section Eight: Materials and Resources, Credit 5: Regional Materials.

Despite this nod to regional practices, LEED® remains primarily driven by a model of sustainability that places priority on quantifiable assessment of energy efficiency. Under the LEED® scheme, buildings receiving high credits in certain technologically-driven criteria may score very well on the overall assessment without addressing qualitative issues of regional and cultural appropriateness. This is certainly not unique to LEED®, and is illustrated in a variety of assessment tools and methods. While such a model addresses the important goal of material and energy efficiencies, it presupposes a definition of green building too limited to capture the public imagination, a critical component of fostering a culture of sustainability as a broader public imperative.

Frampton (2001: 123) has noted that "It is not that we lack appropriate models for addressing the seemingly intractable problems of our time. It is rather that we lack the conviction or even perhaps the political means of convincing society of the necessity of adopting certain measures, particularly where these affect market forces and the rights of private property." It is therefore necessary to locate sustainability within the larger cultural discourse of architecture and to foster discussion and debate about the role of regionally inflected green building practice as a contributor to cultural identity and sense of place. At a time when formally spectacular architecture is popularly understood as a source of cultural identity—a phenomenon which Frampton (2001: 125) suggests is misguided—this paper explores how regionally inflected sustainable architecture offers an alternative construct for the establishment of meaningful places.

2. Regional Variation in Sustainable Architecture in Canada

2.1 The Role of Culture in Defining Sustainability

Challenging the dominance of quantitative assessment, Guy and Farmer (2000: 76) enumerate six "competing logics of green buildings", some of which address sustainability from a less quantitative, more qualitative perspective. Among these, what they term the "*symbolic* logic" addresses issues of regional and local culture as an important dimension of sustainability: "Rather than postulating a universal, radical change of attitudes, the *symbolic* logic emphasises a fundamental re-orientation of values to engage with both environmental and cultural concerns. The emblematic issue is authenticity and the notion that truly sustainable buildings need to relate more fully to the concept of locality and place. Our ethical responsibilities are to resist the phenomenon of universalisation prevalent in modern culture... current technologically based sustainable architectural approaches and design methodologies often fail to coincide with the cultural values of a particular place or people" (Guy and Farmer 2000: 80).

Citing Ujam and Stevenson's contention that "Without cultural awareness, any attempt to create a more sustainable environment is likely to falter as it encounters but fails to recognise very deeply structured personal responses to particular places that will tend to override shallow environmentalism", Guy and Farmer (2000: 81) conclude that "Contemporary architecture should therefore seek a greater understanding of local culture if it is to be sustainable." This view is further supported by the notion that to be truly sustainable, buildings need to remain relevant and functional to the community they serve over the long term. Energy efficient buildings that fail to address cultural needs and values may suffer premature obsolescence and invite major modification or outright demolition and replacement, undermining ambitions for sustainability. Vale and Vale (1991: 116) have argued that "One way to achieve longevity and avoid demolition is to design buildings that are capable of adapting to the users' changing needs." This argument can be extended to state that those needs may be defined not only in practical—i.e. programmatic or typological—terms, but also on the basis of cultural, aesthetic and material traditions specific to a local or regional population for whom such elements are fundamental manifestations of self-definition and place-identity. Such an approach tends to draw "inspiration from indigenous and vernacular building strategies which are seen as indicative of ways in which culture adapts to the limitations of a particular environment... [drawing on] the holistic nature of traditional building in which physical, spiritual and environmental needs were integrated within the greater context of social groups" (Guy and Farmer 2000: 81). Similarly, McDonough and Braungart (2002) address the notion of being "native" to a place, implying the more holistic relationship to local context, and by extension to the larger ecosphere. This links to the concept of the Traditional Ecological Knowledge (TEK) of First Nations peoples in North America and elsewhere, where the material culture of a place is a repository of cultural values, a primary condition of which is embodied in the role of stewardship of that place (Chakasim 2004).

2.2 Vernacular Sources

Despite the fact that green building practice has been dominated by quantitative concerns for energy performance, that there is an important regional dimension to sustainable practice should appear self-evident. Even from the narrow perspective of energy consumption, fundamental design strategies such as building orientation, location and nature of fenestration and viability of alternative energy sources (solar collection, wind generation, ground source heating) must all be closely attuned to local climatic, microclimatic and geological conditions if they are to perform effectively. At a more strategic level, procurement of locally available materials and regional construction practices taking advantage of local labour skills also constitute effective strategies for reducing the ecological footprint of construction projects (Rees 1996). These strategies have always been staples of vernacular traditions; Niklaus Kohler (2003: 85) 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." If this is true in the European context, which Kohler recognizes "as a society which is strongly marked by centuries of common history, intense cultural exchange and... approximately 200 years of identification with national states" (Kohler 2003: 83), it is even more so 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 models of vernacular architecture in Canada—that of indigenous peoples and those of early European colonization—offer distinct models of response to environment and consequently reveal significant cultural differences in the populations they represent. At the most basic level, there is a fundamental distinction related to overall attitudes toward the environment. In the case of indigenous peoples, the relationship to environment is primarily one of symbiosis. There was no concept of private ownership of resources such as land, water, minerals, or plant life, no inheritance of land from generation to generation, and no notion of improvement of the natural environment by human intervention. Nature is viewed as "being", and humans are seen as part of nature. Indigenous peoples' concept of time is synchronic rather than diachronic, with a much greater emphasis on cyclical rather than linear notions of time. Consequently architecture is understood as an extension of the natural world, and construction is often undertaken with the expectation that it will eventually dissolve back into the earth (Chakasim 2004).

The Western model practiced in Canada by European settlers operated on the Judeo-Christian notion of humans having dominion over nature; the wilds of the New World were understood as threatening and dangerous, and were to be domesticated to serve humanity. Settlement was devised not to act symbiotically with nature, but primarily to mitigate its potentially deleterious effects on human populations. Architecture is understood as a shelter from and barrier against the natural world, and construction is designed with durability in mind (Chakasim 2004). This aspect of early settler attitudes toward the natural environment is widely understood as a defining characteristic of Canadian identity, and is often referred to as the "garrison mentality" after literary critic Northrop Frye's (1965) description of the phenomenon.

These two competing yet complementary approaches to vernacular architecture continue to inform contemporary practice and offer rich possibilities for the pursuit of strategies for sustainability, albeit from different perspectives. The indigenous perspective offers unique insights into a strong ethic of environmental stewardship through a strategy of minimal intervention and a reduced ecological footprint (Rees 1996), and early settler models illustrate a wide range of cultural and technological responses to extreme climatic conditions. Both however are representative of practices that in some respects are no longer relevant or practicable in the present day. One of the serious limitations of reliance on vernacular sources is that many traditional approaches to architecture fail to address the needs of an advanced post-industrial society with certain expectations of the built environment. The challenge is to distil those

elements of the vernacular that address the issue of sustainability without sacrificing the standards of health, safety and comfort that form the basis of contemporary technologically advanced building.

2.3 Critical Regionalism and Sustainable Architecture

The pursuit of a contemporary architecture that addresses the precarious 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 for Resistance." In the context of the current need to articulate a cultural and not merely a technological or pragmatic understanding of sustainability, Frampton's seminal essay provides an interesting 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. This is most clearly and dramatically stated in Frampton's critique of the "generic window", which he argues should be abandoned for regionally inflected approaches to fenestration:

"Here, clearly, the main antagonist of rooted culture is the ubiquitous air-conditioner, applied in all times and in all places, irrespective of the local climatic conditions which have a capacity to express the specific place and the seasonal variations of its climate. Wherever they occur, the fixed window and the remote-controlled air-conditioning system are mutually indicative of domination by universal technique" (Frampton 1983: 27).

This reiterates the essay's opening lament that "Modern building is now so universally conditioned by optimized technology that the possibility of creating significant urban form has become extremely limited" (Frampton 1983: 17). Frampton also writes that "Critical Regionalism necessarily involves a more directly dialectical relationship with nature than the more abstract, formal traditions of modern avant-garde architecture allow" (Frampton 1983: 26). While Frampton couches this in the phenomenological concern for "place-making", a contemporary architectural response, sustainably appropriate to its context on a variety of levels, would tend to be linked with local traditions of the material culture of the region. 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 mores and tectonic traditions, leading to not only greener but also more meaningful architecture.

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2.4 Project Examples

2.4.1 Nicola Valley Institute of Technology, Merritt, B.C., Busby + Associates Architects



Figure 1: Nicola Valley Institute of Technology, Merritt, B.C., view from northwest (photo: Marco Polo).

Located on a forested, south-facing slope on the outskirts of the town of Merritt in the interior of British Columbia, this new 4,500 m² post-secondary institute has been recognized not only for its green merits,

but has also received prestigious design awards, including the Architectural Institute of B.C.'s Lieutenant-Governor's Award and a Governor General's Medal for Architecture.

The design team consulted with aboriginal elders from five local bands to address the needs of a modern academic institution while acknowledging the significant features of the site and the heritage and culture of the native students. A combination of environmental and cultural considerations influenced the site design, construction process, material strategies and the selection of systems for water and energy conservation. One manifestation of this is that the building orientation seeks to satisfy both cultural and climatic concerns, addressing the cardinal directions and locating the main entrance such that it faces the morning sun to the east, following aboriginal tradition. In response to the sloping site, the building is embedded in the ground at its north end and emerges to become a three-storey structure at its south end.

Climatically, the Nicola Valley experiences hot dry summers and moderately cold winters, which led local aboriginal people to devise two highly pragmatic forms of shelter. In summer, the tepee provided a simple and efficient ventilation structure that promoted cooling by convection. In winter, the pit house provided an earth-sheltered structure built with a southern orientation to maximize solar heat gain and which relied on thermal mass to minimize heat loss. Without resorting to overt formal references, NVIT uses environmental principles drawn from each of these earlier models: the principles of the tepee are embodied in a two-storey atrium that rises up to a glazed roof lantern with operable windows for natural ventilation; the precedent of the pit house is reflected in the building's embedding in the landscape. Using these principles as a basis for design, state-of-the-art energy modelling techniques were used to develop a fully integrated environmental system with advanced controls to optimize performance.

Wood is used sparingly to emphasize its structural and visual qualities, and its value as a natural resource: glue-laminated Douglas fir columns support concrete floor slabs, with cast steel capitals and bases transferring the loads. The primary building envelope consists of a faceted modular wood frame rainscreen wall, clad horizontally with Alaskan yellow cedar which, left untreated, will age to a silver grey and blend with the landscape and surrounding vegetation. Operable tilt-and-turn windows provide natural ventilation and are shaded by adjustable wooden louvers.

Of the three reference terms cited earlier—*culture, process and assembly*—used in this study to examine projects from a broadened cultural definition of sustainability, NVIT clearly embodies the first two, and less the latter. The abstract modernist language of the project is distinguished from other recent work for First Nations clients in B.C. where, in many cases, the architecture has referred explicitly to traditional building forms and symbolism. The approach taken at NVIT draws on intrinsic cultural values rather than symbols and metaphors, addressing the broader implications of the aboriginal relationship to nature. The building demonstrates how First Nations clients can express their cultural identity not through the sentimental replication of traditional formal typology, but by espousing the principles of green building in a contemporary re-interpretation of the imperative of environmental stewardship.

2.4.2 York University Computer Science Building, Toronto, Ontario, Architects Alliance in joint venture with Busby + Associates Architects



Figures 2 and 3: York University Computer Science Building, Toronto, Ontario, southeast corner and interior atrium (photos: Steven Evans).

The story of the York University Computer Science Building provides a valuable example of the way in which the objectives of sustainable building design can be brought to bear in the context the competitive construction market. The building is located on an infill site near the center of the York University campus in Toronto, facing a pedestrian concourse. The green strategies of the project provide for extensive natural illumination and ventilation, coupled with generous communal spaces, which play a key role in the building's mechanical functioning. The reduced energy and environmental load of the building is achieved with a wide array of factors. Where possible, recycled materials including brick, steel, and aluminium and

are used, as well as fly ash in concrete. Additional factors include provisions of a highly efficient building envelope, reduced mechanical system, employment of the thermal mass of the concrete structure, decreased lighting loads, and retention of storm water through a planted roof and cisterns. Collectively this results in a tremendous reduction in green house and acid gas emissions over the life of the building.

While these broad issues would be a positive incentive to any client group, the key factor in the proposal, given the current resource-starved environment of educational institutions, was of course budget. Higher capital costs for green buildings have been the most significant disincentive for developers and facilities administrators to a broad acceptance of sustainable building principles. Despite the comprehensive green strategy of the building proposal, the design team was able to match the cost of a conventional alternative.

The building consists of an elegant modernist three part composition, incorporating a rectangular donut and bar of offices and labs, both on three floors, linked by a full height circulation atrium with the large volume of a lecture hall in the south east area of the plan. A glazed entry lobby nestles under the tilted plane of the lecture theatre seating, from which basement access leads to additional labs, classrooms and storage areas. The circulation atrium together with a 'tree atrium' within the donut, provide an important communal amenity in the building, while also operating as the primary air movement devices, employing stack effect ventilation. Warm air is primarily provided in temperature-differentiated zones such as labs offices and lecture halls, where people tend to be seated and at rest, versus cooler zones like the circulation atrium where people tend to be in motion. Air within the building rises through the atria, creating negative pressure in the adjoining spaces, which in turn causes air to be drawn in through windows or from the north side of the building via subterranean air plenums. These plenums exploit the ambient 17°C ground temperature, providing pre-cooling of air in summer and pre-warming in winter.

One of the key successes of the building is the way in which the designers' green agenda appears to merge holistically and seamlessly with an elegant planning and compositional strategy, demonstrating the important link between good design and responsible practice. The focus on sustainable building techniques gives rise to a number of striking compositional devices, in both volumetric and envelope articulation. The three primary elements—the bar, the donut and the tilted lecture hall—provide striking compositional variety while at the same time creating the dramatic and clearly functional atria. Similarly, the lively surface articulation of external shading devices along with bold two storey faceted panels of the west façade hovering over a glazed ground floor level, referencing programmatic distinctions, are compositionally engaging and provide the interior with an important shield from excessive glare and solar gain.

While the building employs a strong contemporary urban architectural language, from a performance perspective it can be linked to such common vernacular architectural structures as the ubiquitous bank barn found throughout the rural Ontario landscape. These structures are true marvels of articulate and refined passive environmental technology. As alluded to above in the York Computer Science building, the barns employ programmatically zoned temperature differentiation, where building occupants and activities—people and computers on the one hand, livestock on the other—provide a portion of the thermal conditioning in the building. In addition, both employ stack effect ventilation as well as ground source and building structure thermal mass temperature fluctuation levelling, to compare just some of their holistically integrated environmental system attributes. In this sense, although York's designers were by no means making overt reference to such vernacular structures, the natural intelligence of integrated passive environmental systems found in both this landmark contemporary building and the vernacular regional counterpart, speak strongly to the themes of *process* and *assembly* rather than to overt cultural reference.

2.4.3 Angus Technopole, Montréal, Québec, Aedifica Architecture + Design + Engineering



Figure 4: Angus Technopole, Montréal, Québec, evening view of exterior courtyard (photo: Patrick Dionne).

The Angus Technopole is a 6.5-hectare business park in east end Montréal specialising in environmental technology, built on the former site of a Canadian Pacific locomotive assembly plant dating back to the end of the 19th century. As the primary employer in the large working class neighbourhood that surrounded it, the plant had a long history as the primary focal point of the community. Following the closure of the locomotive plant, with the decline of local industry in a rapidly shifting global economy, the building was threatened with demolition. In response to this threat, a grassroots organisation was formed to save the historic structure where thousands of Montréalers built a range of locomotives in one of the world's first assembly line factories.

The project is distinguished by its broad social and environmental vision. The renewal of this important historical landmark, responding to evolving economic conditions and the re-use of a large brownfield site in a major urban core, stand as an important model for the cultural interpretation of sustainability. While the building has not been developed with the same level of sophistication with regard to environmental systems as other buildings cited here, it establishes an important example in areas of recycling and re-use of materials and building assemblies and, very importantly, in community continuity.

The first phase of the Technopole consisted of a \$10 million renovation of the one third of the original locomotive factory, the Locoshop Angus, providing 10,000 m² of space for small and medium sized businesses, intended to revitalize the depleted employment base in the community. The building is divided into units ranging from 350 to 1,500 m² with offices and research studios on the upper level and light industrial uses on the main floor. A central interior street flooded with natural light from skylights extending the length of the building gives access to the individual spaces and operates as a central organising spine on both the upper and lower levels. The space also operates as a ventilation flue, similar to the York University Computer Science building, with extraction hoods required for fire safety, also used for ventilation, drawing away warm air to reduce cooling loads in the summer months.

The original structure of the building has been left exposed, providing a link to its industrial heritage and a dramatic counterpoint to the contemporary material palette of wood, fibreglass and lightweight steel of the new insertions throughout the building. The detailing of the new insertions is minimal and matter of fact, focused on exploiting the character of the original building. Translucent corrugated fibreglass panels are used to maximise daylighting and give a sense of openness in the office spaces. Elements signalling the former use of the building such as the overhead rails on which heavy lifting cranes ran, have been retained giving texture and character to the expansive interior street.

Much of the brick, concrete and wood from demolished buildings have also found new uses. Old bricks have become paving surfaces for walkways throughout the site and salvaged wood has been used in on-site artisan workshops. Site remediation included removal of heavily contaminated soil, while areas of low level contamination have been shifted to the west end of the site, forming a landscape berm that shields the site from the noise of adjacent rail tracks and forms a linear park with bicycle paths linked to the extensive cycle routes in the city.

2.4.4 Murdena Marshall Meeting Hall, Cape Breton, Nova Scotia, Richard Kroeker Architect



Figure 5: Murdena Marshall Meeting Hall, Cape Breton, Nova Scotia, assembly of small dimension lumber thinnings into structural members (photo: Richard Kroeker).

For more than a decade Richard Kroeker has been working with First Nations Mi'kmaq peoples of Cape Breton in Nova Scotia on the Atlantic coast of Canada, developing a building technology that deftly marries native and contemporary construction techniques. The primary element of the technique involves the use of small scale round wood poles, often referred to as pre-commercial thinnings, derived from plantation forests. Kroeker's concern for developing an appropriate technology linked to the craft traditions of the region and resonant with indigenous cultural practice has been based on use of the inherent structural potential of this material that typically goes to low value, low grade uses such as paper

pulp and firewood. Kroeker has worked closely with community elders of the Eskasoni Reserve on Cape Breton on several projects, refining construction methods and processes.

Young spruce and pine trees with a base diameter of not more than 150 mm, while still green and pliable, are fashioned as curved arch truss members. Pairs of these trusses are joined to form a lightweight structural arch, which when deployed in series, form a sinuous, lyrical vaulted space. "For Kroeker architecture is not a rhetoric of shapes and forms that signify culture; rather it develops out of a way people work with the material around them. In his view, technology is not neutral, it is an economically and geographically contingent process" (Macy 1998).

Kroeker notes that while the First Nations people he works with do not see the architecture as representative of their culture and symbolism, they recognize in it characteristics that resonate with their relationship to place. In this sense Kroeker's buildings demonstrate an inseparability of the three terms *culture*, *process* and *assembly* referred to earlier as touch points for a cultural analysis of sustainability.

2.5 A Model for Sustainable Practice

The examples cited above are chosen from four distinct cultural and geographic regions of Canada: the western mountain highlands of British Columbia, the Great Lakes plateau of southern Ontario, the St. Lawrence River basin—where Montréal lies in the French-speaking province of Quebec—and the East coast maritime lowlands of Nova Scotia. The climate, geography and cultural heritage of these locations differ widely, resulting in highly particularised architectures which, in varying ways, marry contemporary technological building practice with unique local conditions. These examples of contemporary Canadian architecture speak with a polyphonic voice which is nuanced, layered and complex, reflecting Kohler's statement (2003: 85) that "There is no conflict between regionally appropriate and environmentally appropriate building practice" as well as Frampton's call (1983: 21) for "a high level of critical self-consciousness" in his proposal for Critical Regionalism. As such the work resists the numbing effect of both the universalizing impact of International Style modernism and global technology, and of nostalgic superficial representations of self-referential historic revivalism. The projects included in this study suggest an approach that may prove to be among the most effective strategies for advancing the cause of architecture that is sustainable at a number of levels, fulfilling its role not only as environmental mediator but also as a cultural project.

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