Three-Phased Sustainable Design and Development Project at Université de Moncton.

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Abstract

Since 2000, Université de Moncton is the site of a three-phased academic environmental research, development, creation (RDC) initiative: (1) installation in 2000 on the University's main campus of a 4 hectares Millennium Ecological park; (2) integration since 2002 of permanent and growing nature art installations towards an open air nature art museum in the park; and (3) development project of an Atlantic Canada Housing and Environmental Technology Centre. From a societal modernization theoretical approach, we will examine the direction and scope of this partnership based initiative which seeks to develop, demonstrate and communicate sustainable practices that contribute to social change regarding environmental and climate change issues.

1. Introduction

Since the year 2000, Université de Moncton has been actively involved in a three-phased project (<http://www.umoncton.ca/babinr/centre/>) developed early on as a community and institutional education program aimed at raising and strengthening environmental awareness activities of professors, students, surrounding community, as well of artists, businesses and policy makers. In addition, the installation of an Ecological park (phase 1) followed by the introduction of activities for integrating nature art (phase 2) and the ongoing development of a Housing

Centre project (phase 3) in the Ecopark are also aimed at integrating Université de Moncton in the overall development of sustainable green campuses in NB, Canada and elsewhere whereby universities are increasingly becoming involved in developing and demonstrating various initiatives favouring sustainability.

Such environmental activities are being developed in a context of a significant societal debate concerning the nature and scope of sustainable development that began with the publication in 1987 of the well known Brundtland report entitled *Our Common Future* and which continued and deepened during the Rio de Janeiro Earth Summit of 1992 and the follow up Johannesburg Sustainable Development Summit of 2002. At issue is a fundamental conflict and persistent large gap between neoliberal objectives of maintaining the existing rhythm of capitalist development while minimizing negative effects on the natural environment and its resources on the one hand and on the other environmentalist objectives of institutional and societal reorientations capable of producing positive effects on ecosystem integrity and the strengthening of democracy. This deep divide remains largely present in the formulation and make-up of two modernization projects that are simultaneously antagonist and interdependent, and concern the ecological modernization of the economy and the societal modernization of the grammar of life. Tables 1 and 2 give a succinct overview of this societal conflict with at stake forms of management of social change.

In Acadia as elsewhere, there are various environmental initiatives inspired by one or other approaches and an analysis of differences is not the

object here as done previously (Babin 2003, 2004).

Table 1. Ecological modernization of the economy

Instituted techno-scientific rationality
Instrumental control logic
Direct power and laissez faire mentality
Ordered management of ecosystems
Optimization and performance
Reproducing the economy: individuality, profitability, competitiveness and financial equilibrium
Unlimited technological solutions
Domination and mastering nature
Scientific and technical knowledge to “preserve” the environment with little care for cultures and democracy
Key role for leaders and expertise: socio-political planning, political apathy and social exclusion.
Targeting ruling classes and resource allocations
Human person: object of chance; adapting communities to change
Educate and passively inform
Sustained development
Culture of objects and means

Table 2. Societal modernization of living conditions

Instituting communicational rationality
Relational logic of interdependence
Relational power and social involvement ethic
Dynamic management of human activities
Efficiencies and development
Reproducing society: protecting the commons, solidarity, participation and ecological equilibrium
Knowing and understanding natural limits
Mastering science and appropriate technologies
Human and social knowledge as well as a break towards new learning processes and actions on society
Key role for citizens and civil society: social politization, remobilizing and rehabilitating democracy
Objective of institutional cultural adjustments and innovations through communities
Human person: agent of change; engaging communities in fostering change
Taking responsibility and actively involving
Developing sustainability and viability
Culture of persons and objectives

Rather from a societal modernization theoretical approach, this paper will examine the question of direction and scope of this three-phased partnership based initiative which seeks to develop, demonstrate and communicate sustainable practices that contribute to social change in regards to environmental and climate change issues. In 2004, an important commemorative year of the 400th anniversary of modern Acadia, this forward looking approach brings together a variety of academic disciplines as well as partners from various artistic, governmental, non governmental and private sector organizations that are brought into play as actors in human and natural settings where new questions are asked and new initiatives find their social relevance.

Figure 1. Park logo

2. Ecological park

The development of the Millennium ecological park (3-4 hectares) is of course linked to the general vision of greening university campuses for environmental education and demonstration purposes. But in terms of conceptualization and content, it offers much more than a mere walk in the park as the project seeks also to input into a larger debate regarding the need to redefine the existing notion of nature parks that for the time being is far too often associated with directives and constraints. What is now required to foster new learning processes is the promotion of multi-use territories that encourage integration of populations into activities that promote resource protection and better understanding of ecological functions of nature and their restoration if needed. As such, the main objective in developing this Eco park has been to work in partnership with the community to demonstrate a new generation of nature parks in an urban setting that highlight the need to restoring various ecological functions of nature such as natural drainage systems, soil conditions and native plant communities, re-

establishing storm water control and wildlife corridors where possible, and promoting passive energy conservation strategies that respond to local climate, etc. In addition, as the park is to be linked to the tri-communities (Moncton, Dieppe, Riverview) linear park that is also integrated into the Trans-Canada trail system, the park offers a resting area where people can contemplate this particular nature setting in the middle of a city and on a university campus. Moreover as the park has been conceived as an important vehicle for awakening and promoting environmental awareness and in view the multi-use integration of nature art and a proposed housing centre, it is also possible to envisage this site becoming an important learning milieu as to the possibilities that exist and that should be promoted in order to foster sustainable community development practices.

The initial development of the ecological park has been brought about by an association of 17 community, private and public stakeholders [1] that accepted often enthusiastically to participate through financial and in kind contributions of 600 000\$ to launch the project. Initial development work consisted mainly of eliminating mowing of this terrain, a very large green lawn area containing 100 trees, in order to allow natural succession that was aided by the planting of selected areas with 650 native trees, shrubs and groundcovers. A constructed wetland was achieved by the restoration of an abandoned eutrophied pond and by the integration of swales and filter strips. In addition, in order to encourage community access, gravel pathways were incorporated in the least intrusive manner possible as well as the construction of a gazebo in lieu for a public meeting place at the center of the park.

Figure 2. Eco park plan

3. Nature Art

From the onset, an artistic component was seen as an essential element in the Ecopark. This led to an active collaboration with l'Association des artistes acadiens professionnels du Nouveau-Brunswick (AAAPNB), the Visual Arts department and the University's art gallery in order to guide the integration of growing and permanent nature art work installations in the park. As a starting point, an invitation was addressed to Nils-Udo, a world renowned artist and pioneer of nature art, in order to create the park's first nature art installation. During his first visit in the autumn of 2001 in order to scope the site, the artist produced conceptual sketches (figures 3 and 4) of his proposed installation that he entitled "Entrée" (Entrance) as a metaphor of the need for societies to enter into a new relationship with nature in order to correctly address our ongoing ecological crisis. These sketches as well as the artist's notoriety were key to securing financial commitments near the 50 000\$ required in order to complete the project a year later.

Figure 3. Entrée side view

[1] Acadia Crushed Stone, Association acadiennes des artistes professionnels du NB (AAAPNB), Basic Design Associates, Branch Graphic Design, Canadian Millennium Partnership Program, City of Moncton, Eastern Fence, Enseignes Hansen Signs, Fondation Médias Verts, Goguen Lumber, Katimavik, MacArthur's Nurseries, Modern Construction (Moncton Crushed Stone), Nova Construction, Oh! Communications, Price Contractors, Université de Moncton.

Figure 4. Entrée from above

Figure 5. Entrée October 2003

Following this first initiative, the longer term objective is to reedit such an undertaking every two years with other renowned artists in such a manner as to constitute over time an open sky nature art museum. The next step is projected in the context of an upcoming nature art symposium in October 2004 entitled "Art nature en Acadie 2004". This in effect constitutes an unedited artistic, aesthetic and social concept in Acadia and New-Brunswick, and the choice of launching this project with a respected international artist speaks volume of the willingness to distinguish and position this new artistic initiative whose scope and range holds considerable interest in view of its innovative character.

In addition, to promoting dialogue and cultural exchange via an international artist, this creative approach not only allies art and nature but academically and socially it associates the departments of sociology and visual arts of the university[2] as well

[2] This project is being developed in a collaborative inter-disciplinary manner by: Ronald Babin, professor of sociology and coordinator of Ecological park

as diverse stakeholders from public and private sectors. This new initiative has also been developed with the active involvement of l'Association acadienne des artistes professionnel.le.s du Nouveau-Brunswick (AAAPNB) which regroups 230 artistes members in six artistic disciplines [3] who embraces this project as an excellent occasion to help create an new audience for the arts as well as a means to favour the development of a new nature art approach in Acadia and New-Brunswick. Support from the federal government (Canada Council for the Arts) and by the provincial government (New-Brunswick Arts Board) has also been an important factor in getting this partnership based dynamics off the ground.

Success in mobilizing persons and resources is in itself very significant and corresponds to a new expression of the social functions of artistic creativity in contemporary societies. By bringing together various social categories in creative processes of producing nature artwork expressing sentiments of nature, nature art seems to favour greater efficiency in expressing ideas and working together, two important factors favouring in return greater interest and participation by concerned individuals in questions of interest to society. This is quite significant and should by no means be dismissed but rather encouraged in these times of growing democratic deficit.

However, it also should be understood that from an instrumental point of view and for various reasons linked to the digital economy, to neoliberalism and to globalization, it appears that non material investments are increasingly becoming a key factor in the conduct of business in the world. In fact, national, provincial and local governments increasingly limited in their capacities to effectively regulate economic cycles through traditional macro-economic instruments are now turning towards increasing the attractiveness of their productive milieus all the while enhancing and promoting overall national, regional and local socio-economic conditions. Art plays an increasingly important role as can be seen by the use by civic and political leaders of the Bohemian index [4] that

projects; André Lapointe, professor of sculpture and responsible for the artistic component of the park; Luc Charrette, director of the University art gallery; and Carmen Gibbs, general director of l'Association acadienne des artistes professionnel.le.s du Nouveau-Brunswick (AAAPNB).

[3] Visual arts, literature, dance, theatre, video-cinema and music.

[4] This index has been developed following observations and research conducted by Richard

measures the relationship between the density of a bohemian population of artist and their creative activities on the one hand and on the other the presence of dynamic and innovative technology companies that are seen as the principal motor for growth and economic vitality of city-regions. What this suggests is that knowledge, creativity and ideas have replaced energy, property and resources as the principle source for creating value and growth but also that the intrinsic capacities of regions to attract modern competitive technology based industries is in direct correlation with their capacities to attract and nurture a varied and culturally diversified bohemian creative artistic community composed of artists, writers, composers, etc. On the whole, this also signals movement away from a company centred economy to a people driven economy shaped by creative and talented people for whom the quality of the social environment where they live is of considerable importance.

Cities that wish to prosper should be attentive to the needs of this new “creative class” that Richard Florida estimates represents more than 35% of the active population in the leading centers of this “new class geography”[5]. For this to happen, cities must to what is required to develop and nurture a significant cultural scene by offering fiscal advantages to bohemians and by opening up to ethnic and gay communities. This is without a doubt a significant broadening of the concept of culture seen here in a quality of life strategy and also a strategic territorial development strategy in view of contemporary challenges linked to increasing global competition and influx of migrant populations. Yet, this particular approach is also characterized by a kind of fusion or confusion of the arts, of concepts and of powers that authorize a general instrumentation of important elements of culture whereby artistic values are identified to merchant values. From this flows a loss of meaning or more aptly a merchant appropriation of artistic meaning. As such, it thus appears that this significant overture towards culture is in fact limited by an attitude of economic glorification that occults important socio-political and education dimensions of culture, all the while neglecting to highlight the significance of various forms of development and organization of artistic productions with more profound cooperative, democratic, and ecological values in mind.

It is then quite important to understand more

profoundly the question of artistic meanings and sensitivities that nature art conveys in order to better appreciate how this contemporary art form there is a genuine refusal to resign oneself to an instrumental loss of meaning of nature artworks coupled with a firm determination to control meaning and diffuse it widely often through photography, catalogues, books and digital communication. In fact, important fundamental questions are to be addressed, particularly with permanent and growing nature art because is there not up front as a creative criteria the central importance of working on meaning in a continuous, engaged and evolving manner rather than agreeing with the more static merchant view of the arts? And more generally, is it not true that the creative act in nature art seeks consciously to maintain control over process and scope all the while trying to ensure wide scale memory and diffusion through photography published in catalogues or books in order to foster public communication and also exchange of meaning and ideas, all of which is very much in line with contemporary central challenges and debates concerning environmental and developmental issues?

4. Housing Centre project

Housing is a reflection of society, economy and environment. People require shelter. The housing industry provides employment and generates wealth for many communities. Housing also impacts on the environment over the short and long terms. While some innovative eco-conscious design practices may be used in expensive model homes, not much has been done in the way of green buildings for low and moderately priced housing. Sustainable and affordable housing represents challenges for builders, industry, government and the public. Research, education and experimentation into the use of innovative materials and building techniques are required. Demonstrations of healthier and more environmentally conscious consumer practices are also needed to generate more awareness of our impact on the environment. Communicating the benefits of environmental and healthy housing decisions and practices must also form an integral part of any initiative that aims to further the concept of healthy housing.

Florida, regional economic professor at Carnegie Mellon University in Pittsburgh, Pennsylvania.

[5] FLORIDA, Richard. « The Rise of the Creative Class », *The Washington Monthly*, Online, May 2002.

Figure 6. Housing centre south face

Figure 7. Housing centre north face

According to Statistic Canada, housing consumes 20% of the total energy used in Canada. Of this percentage, 67% of energy is devoted to heating and air-conditioning, 18% for lighting and appliances, and 15% for water heating. Today, technologies exist to help reduce the total energy consumed by Canadian households and businesses. Many of these can easily be applied when decisions are made to build or renovate residential, commercial and industrial buildings. Other innovations are more complex and require further development before they can be implemented on a much broader scale. The *Housing Centre* project of *Université de Moncton* aims to engage the community, industry, government and non-government organizations, as well as academia in a collective effort to raise environmental awareness around these issues and in regards to Canada's commitments within the Kyoto Protocol on Climate Change.

The Project's purpose is to educate and to advance the application of environmental housing practices, technologies and know-how and to demonstrate ways in which individuals may change their consumption patterns. The *Housing Centre* will help channel efforts in testing and demonstrating new environmental building technologies. The Centre will strive to bring about change on three levels: raising awareness,

educating and fostering technology and innovation.

Awareness

People and businesses can play a vital role by making conscious decisions in favour of non-toxic, renewable or recyclable materials that are not produced from sensitive ecological environments. Raising awareness in support of environmental technologies to create healthier living and working environments requires communicating relevant information and demonstrating their application to the community at large. The *Housing Centre* will raise awareness by showcasing environmental innovation and energy-efficient construction techniques and by communicating the benefits of healthy housing. Proposed program highlights include: green campus initiative, materials and construction demonstration program and resource centre, Web-based information clearinghouse, volunteers training program, and consumer communications program.

Learning and Teaching

Adopting environmental technologies and using innovative construction techniques requires learning how to apply new concepts and products. The *Housing Centre* will foster learning in the use and application of advancements in non-toxic, renewable or recyclable materials. A multi-disciplinary approach to experimenting and researching new products and building procedures will ensure that knowledge of environmental technologies is transferred between academics, students, practitioners, industry and the public. Opportunities to learn from the concepts and procedures used in building more efficient housing are also part of the process aimed at increasing healthy housing know-how. Other training environments include a healthy home-building school, technical seminars, and conservation workshops.

Technology

Healthy housing requires a number of important ingredients. Most importantly, industry must play a significant role in creating the healthy housing concept promoting sustainable building technologies. Initiatives will include product demonstrations, applied research and knowledge transfer to global markets.

5. Conclusion

As it should now be quite evident, the inspiration leading to innovation in these three distinct but integrated projects is not while present mainly technical in nature but very much more social in essence in that they together seek to communicate a simple, logical message but with important

implications : resolving the escalating ecological crisis will not come about by mainly modernizing management of ecosystems and technological fixes but rather by inviting modernization of societies as a whole in such a manner as to change cognition, increase commitments, take responsibility, and strengthen involvements in processes leading to significant societal changes in regards to our natural environment and to how we organize ourselves. The environment is not the problem; rather it is our various societies relationships to nature, and also our own relationships amongst ourselves. Thus, it is from within societies that we have to foster the reflexive learning processes leading to new lifestyle choices, to more appropriate socio-political actions and to new institutional arrangements that will also guide the development of more environmentally appropriate technical tools that will be needed to correct our present situation.

The outcome of the 21st century will very much depend on how we go about this. Measuring success will be much more related to improved qualitative societal involvement than to greater quantitative technical prowess. And as there is no proven recipe, it won't necessarily be easy, but do we have a choice other than taking on this defining challenge? As has been showed briefly, Université de Moncton's three-phased sustainable design and development project seeks not only to participate and demonstrate but to actively engage in this key process. Therein lays its key innovative characteristic as a project which has the potential to affect the rhythm and sensitivities of a region by opening the door to ecological, aesthetical and technological experiences that can serve as a model in Atlantic Canada and elsewhere in Canada.

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