The *Building Skills, Building Homes* Project: A Community Education Study in Alternative Lifestyle Practices through Straw Bale Construction

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Executive Summary

This paper highlights the *Building Skills, Building Homes* Project as an example of community sustainable approaches that seek to include alternative building methods as part of the affordable housing scenario. Proponents of affordable housing are pursuing creative and innovative options to advance a more solid and enduring housing situation for low-income people and their communities. The *Building Skills, Building Homes* Project was just such a creative venture that brought together diverse stakeholders to explore options to current housing and employability issues. I co-ordinated this unique pilot project, which trained 11 young, predominantly Aboriginal, women in construction skills utilizing natural building methods and included hands-on learning through the building of two straw bale structures. Participants also learned about many other techniques such as solar energy, composting toilets, and mud plastering. The aim of this paper is to show the links and the contributions that highly energy-efficient homes can have in long-term individual, community, and economic development policies as well as an approach for community educators.

Introduction: The Unfolding of the Building Skills, Building Homes Project

> Go to the people. Live among them. Learn from them. Love them. Start with what you know. Build on what they have. But of the best leaders when their task is done, the people will remark: "We have done it ourselves."
>
> Chinese Poem.
> (Prakash & Esteva, 1998)

At the beginning of January of 2004, I approached Marcia Klein, Program Leader of the Brightwater Science and Environment Program for the Saskatoon Public School Division, inviting her to submit a proposal with me for a project called *Building Skills, Building Homes*. Previously, in 2002, Quint Development Corporation (a community-based organization concentrating on housing and local economic development initiatives) had submitted a proposal for a similar project, which was funded by Youth Services, Human Resources and Skills Development Canada. Unfortunately, the project, the focus of which was to have unemployed women learn how to build ecologically sustainable homes, was cancelled because of a forest fire at the selected building site near Shell Lake, Saskatchewan. It was my intention, given my commitment to community education, adult learning, and sustainable development, to revive the project in conjunction with the Brightwater Science and Environment Program. Marcia and I developed the project proposal from January to April 2003, and I co-ordinated the program from April 28 to November 28, 2003.

Building Skills, Building Homes was a unique pilot project that gave eleven young, unemployed women (selected by Marcia Klein, the resource officer from Human Resources and Skills Development Canada, and myself), the opportunity to work as apprentices with skilled teacher-builders from the alternative building industry. As well as basic carpentry skills, the women were trained in numerous ecologically sustainable construction designs (yurts, vaults, and various straw bale structures). These buildings incorporated unique materials such as straw bale, cob (a mud plaster), and recycled lumber. The participants also learned about solar power, water and waste management practices, a co-operative land ownership model, and other alternative lifestyle practices – using materials and technology particularly suited to the northern prairies.

The project had four phases. The first phase focused primarily on training the women for a work and camp environment, which included:

- Food Safe Workshop (Saskatoon District Health)
- Food Nutrition (Child Hunger and Education Program)
- First Aide and CPR (St. John's Ambulance Training)
- Tool Safety (Salvation Army Camp Manager)

The participants and myself also spent time developing a Group Agreement, which was a process where the participants and I discussed individual and group issues such as work hours, payment schedules, as well as work and community living expectations. A contractual document was produced which each of the participants signed.

Figure 1: The vault cabin at Kissimmee Lake site, near Shell Lake, Saskatchewan

The second phase focused on building one of two straw bale structures. The first straw bale building was constructed from June 2 to August 15 at a site near Shell Lake, Saskatchewan[1], about 1½ hours northeast of Saskatoon. The name of this site is called Kissimmee Lake. Here the women learned essential construction techniques, predominantly using recycled lumber. They built a vault cabin with straw bale in-fill without the use of electricity or running water (see Figure 1). They lived in a community setting for this portion of the project, from June to mid-August, travelling to and from the site, Monday to Fridays and coming home to Saskatoon for the weekends.

This phase of the project entailed setting up camp at a distant and new place for most of the participants who, although identifying with rural First Nation communities had lived most of their lives in cities like Saskatoon. The first weeks of June are often rainy and chilly. The inclement weather and hard labour of clearing the land were taxing. Nevertheless, most of the women rose to the tasks at hand. Elders, Maria and Walter Linklater, came to share with us the importance of the land and the work these women were doing. The daily schedule consisted of early morning construction work, mid-day siestas, and more work in the later, cooler, part of the day. The women and the leadership were tested in their ability to live in community for that period of time. Yet, despite the usual ups and downs with both communal living and construction, progress was achieved and the women completed the shell of a fine vault cabin.

As well as coordinating the project and assisting with the construction, my role also included camp cook while at the Kissimmee Lake building site. This was satisfactory, but in the end the additional task of cooking interfered with the amount of time I was able to spend with the women and their concerns. However, I did spend time with the women conducting talking circles, group meetings, and teaching them about work ethics, attitudes, values, communication, and respect. As well, I involved them in cooking, cleaning, meal planning, and time management skills development. Extra time during and between construction periods was filled with educational and cultural workshops such as:

- Cultural experiences (Tony Sands, Elder Mistawasis First Nation)
- Hunting and tracking workshop (Glenn Ahenakew, Hunter from Ahtahkakoop First Nation)
- Birding workshop (Lynn Oliphant, Prairie Institute for Human Ecology)
- Herbal salves workshop (Rebecca Kennel, Herbologist from Shell Lake, Saskatchewan)
- Hide tanning workshop (Mary Lee, Elder)

Figure 2: *The Loo With A View* - Roofing the load-bearing strawbale structure at Brightwater Science and Environment Centre. Pictured from left to right: Carol Vandale, Alison Ledoux, and Stephanie Whitehead.

The third phase of the *Building Skills, Building Homes* Project was the construction of the second straw bale structure built on Saskatoon Public School Division[2] land south of Saskatoon. This site is called Brightwater Science and Environment Centre and is located 20 minutes south of Saskatoon. The Brightwater program is an Out-of-School education program with the Saskatoon Public School Division (SPSD) for middle years (grade six to eight) and high school students. Brightwater helps to inspire and sustain learning in the areas of science and environment education.

From August 25 to October 15, the women learned how to build a load-bearing, straw bale structure designed to house two composting toilets[3] (see Figure 1). The women learned basic carpentry skills necessary for the mainstream construction industry, including how to use some power tools. The women and I drove out to Brightwater, Monday to Friday. We were very fortunate to have a warm dry fall that year, although progress was slowed due to a number of women dropping out of the program for personal reasons or for other training opportunities that led to certification.

This experience was enriched and extra challenges were presented to the women when groups of visiting children, teachers, and parents would come through the site, asking many thoughtful questions. Further support for the women to conduct tours and teaching sessions was made possible through leadership and group facilitation training provided by Marcia Klein.

The fourth phase of the project, from October 18 to November 20, intended to take the women from their collective work experience and focus on their individual talents, career goals, and training or education needs or desires. I facilitated job search and group building sessions for the women. As well, I assisted them individually with resume writing, career counseling, and arranging meetings or one-day placements with prospective employers.

The whole project encouraged learning, growth, and reflection through participation in various workshops, gatherings, and teachings. There was an emphasis throughout the project on what is viewed by the stakeholders as lifelong learning opportunities (Human Resources Development Canada, 2003).

The leadership encouraged the women to foster life skills in numerous ways. This could be viewed as "together-living" (Forbes, 2001), an Aboriginal based understanding of culture as an on-going and informed notion rather than static and normative. This understanding of "together-living" included group work, which occurred throughout the project:

- Group communication, family tree/history, cultural teachings, and colonization (Yvonne Howse, Professor, First Nation's University of Canada)
- Iskweweyak Young Women's Leadership Workshop (Priscilla Settee, Director, Indigenous People's Program, University of Saskatchewan)
- Leadership preparation for two Open Houses at each site (Carol Vandale and Teacher-Builders)
- Two group process days spent developing a Group Agreement for each build site (Carol Vandale)

The program provided rich, intense, and diverse life experiences that have changed the lives of these women, increasing their sense of independence,

building their capacity to work collectively, as well as giving them new options for living more self-sustainably. From this perspective, and in terms of the specific construction skills acquired by the participants, the stakeholders view the *Building Skills, Building Homes* Project as a success.

Community Sustainability: Striving for a Sense of Place

I know a place in the woods, and if you go there, you will stay.

Traditional Cuban Song: Nan Fon Bwaa
(Bunnett & Descendann, 2002)

This section aims to make the link between affordable housing, ecological lifestyles, cultural perspectives, and rethinking a sense of place as developed by such environmentally oriented educators as David Orr (1992), Edmund O'Sullivan (1999), William Vitek (1996) and Gregory Cajete (2001). The connections that emerge indicate a profound basis of community sustainability that the *Building Skills, Building Homes* Project exemplified. Community sustainability is the activity of a community striving to incorporate ecological, economic, social, and cultural issues in their policies and programs where such activities seek to maintain a balance of interdependence as opposed to being too dependent on outside sources for their subsistence or too isolated (both of which lead to various kinds of poverty). Quint Development Corporation[4] is one example of a community-based organization that incorporates many ongoing community educational activities within its programming as well as including self-sustainable economic, social, ecological, and cultural endeavours.

The *Building Skills, Building Homes* Project allowed Sarah Lewis[5], one of the project participants, and I the opportunity to grapple with the problem of how we could sustain our own lives – part of which is a desire to build our own

home. Not only was learning the skills necessary for building a home stimulating but, through this project, we encountered the empowering stabilizing force of learning and experiencing that we could sustain ourselves in our environment, especially through meeting such a basic need as shelter.

As well as achieving satisfaction through this learning experience, it stimulated, in Henry Giroux's (1992) thoughts regarding empowerment, "the ability to think and act critically" (p. 11). The experience motivated us to continue in our commitment to include alternative and natural building options as part of our quest for our own house and to question what was getting in the way of accomplishing that goal.

There are obstacles to meeting our goals. Even though the experience of learning new skill sets was uplifting, there are ongoing barriers and limits to the continued learning of natural building techniques and the ability to apply that knowledge to our goals of sustainable living for ourselves and our communities. For example, Sarah has chosen to focus on carpentry as a career. In addition to the normal challenges of learning a trade she faces the concerns of positioning herself as a woman in the strata of predominantly male workers. The fact that the *Building Skills, Building Homes* Project employed an all woman crew initially helped her gain confidence in her ability to learn and practice carpentry skills. Yet, in the actual workplace learning is limited and political, especially in non-traditional trades such as carpentry.[6] Such workplace restrictions stall the kind of skills learning Sarah desires and needs in order to begin another stage of

meeting her goals. Nevertheless, Sarah has a vision of starting her own crew, or working on a family-based crew, to build natural and energy efficient homes in her own community.

For Sarah and my family, owing our own home is important because it could fulfill a sense of control and grounding in a place. Edmund O'Sullivan (1999) argues for a more profound sense of place stating:

> Our sense of belonging to a stable community and our security are lost in the shuffle of accelerated change and mobility. The result is the experience of a loss of connection to where we live, to people themselves and to the natural world that surrounds us. (p. 245)

More than increasing our "economic standard of living", we envision that home ownership would give us stability in a community of people and acknowledge that we are interconnected to them and their lives simply by being in proximity to them in a long-term way. The Core Neighbourhood Development Council (an ad hoc planning committee working towards improvements to Saskatoon's inner city neighbourhoods) worked on a process of producing visions and strategies some of which identified housing where the residents Saskatoon would:

> Advocate requirements that all new residential construction be designed to encourage pride of ownership and to facilitate communication among neighbours and links between households. (p. 4)

This is the general thrust of many of their strategies pertaining to housing: that home ownership be accountable and linked to community.

Being in control of your home and land brings an ability to personally act on matters of importance as well as responsibilities (such as maintenance) and rewards (such as personal aesthetics). For us, the crucial concern in the

autonomy that home ownership offers is an actualized attentiveness to our relationship to the land, our interconnectedness to it, and our actions regarding it. Embedded in the *Building Skills, Building Homes* Project was a growing awareness of just such interconnectedness to the environment and to each other. Improving the way we build our homes, both in the materials used and in the energy saved, could create less of an impact on our environment (McKirdy, 1999). We learned that attention to the care of our environment, our culture, and ourselves is integrally bound up in how we progress as communities.

The next section will discuss how affordable housing programs have developed over the last 50 years but are still lacking in accessibility and vision. Needed in that vision is the inclusion of more energy efficient options and choices that are accessible to all people. Another section will discuss how Indigenous people are grounded in a deep sense of place in their relationship to the land. Finally, two examples will describe the kind of change in thinking necessary to really incorporate ecological sensitivity into our lives and our communities. Introducing each section is a quote from the narrative I collaborated on with Sarah Lewis.

Affordable Housing: Including Ecological Concerns

I want to build my own straw bale home for my family. I want to get a crew of builders together who are into natural or alternative construction. I want to learn about this kind of building so that my community, my people, can begin to learn about another way of life. (p. 16)

For Sarah and me, a major barrier to realizing our own home is that we cannot afford to buy either the land or the materials, even if we consider recycled materials. We live in subsidized or rental situations where we have little power to change or improve the energy efficiency of our living situations, thus lowering our energy bills and freeing up meager cash flows for other areas of our family life.

Our personal situation is common for many families in Saskatoon[7], and along with the shift away from sustainable energy research and development in the last two decades, as will be discussed, is a similar downplaying of social responsibility regarding adequate and affordable housing for those who cannot buy their own homes. The Canadian Policy Research Network (Hulchanski, 2002) documented the history and current situation of the national policy regarding urban housing issues. In the last twenty years, there has been a significant decline in the amount of intervention from the federal government in housing issues stating, “there were very few homeless people and few, if any, homeless families in Canada before the mid-1980’s” (p. 2). Although there have been national initiatives, as well as municipal and community-based programs to deal with housing shortages, social responsibility to provide housing to all

members of its society has waned in the last 20 years (Hulchanski, 2002). Further to this reality is the following assumption:

> If housing all Canadians adequately is a prerequisite for a sustainable social fabric, the toughest problem is how to house people with moderate and low incomes when the market mechanism is the main provider and allocator of housing, and where the price structure for residential land is driven by the ownership market (p. 16).

What is meant here is that after the government has abandoned intervention in social housing schemas, the private real estate market is left to deal with any housing shortages. Yet, this is contradictory for the private markets' only interests are in those people with enough money or credit to buy or build a house.

This has to change, and to some extent it is changing. The fact is that the current municipally-led community plan in Saskatoon includes many sectors of housing, as well as poverty-oriented representation, for example community-based organizations such as Quint Development Corporation. They have successfully helped many families in the core neighbourhoods of Saskatoon purchase homes who otherwise would not have been able to do so. As of fall 2004 over 100 families have purchased homes through housing co-operatives and 20 of these families have taken over the title and mortgage of their own homes (Quint Development Corporation, 2004). As well, the broad range of participants in these discussions is indicative of the realization that no one sector can make changes on its own.

Yet, many affordable housing policy proponents do not see the cost benefit of building the best energy-efficient houses that not only make socially-provided housing more affordable to the individual (in lower energy costs), but promote a more equitable relationship with the environment. The City of Saskatoon recently published a "Saskatoon Community Plan for Homelessness and Housing" (2003) stating, only once in the whole document, the need to recognize "success, achievement, innovation, and good practices in serving the homeless and those in need of housing" (p. 19).[8] This report came about as a response to an announcement of federal money committed to the social housing issue in January 2001 (Hulchanski, 2002). Civic, provincial, and community-based representatives came together to produce a community plan:

> The Saskatoon Community Plan for Homelessness and Housing has been developed to guide the strategic efforts of stakeholders in Saskatoon. The following are the reasons a planning process was undertaken:
> • To create a range of affordable and supportive housing options
> • To co-ordinate and collaborate efforts focused on the root causes of homelessness
> • To find long-term solutions through sustainable initiatives
> • To increase the awareness of the importance of housing
> • To ensure adequate and affordable housing is recognized as a fundamental human right (p. 14)[9]

However, beyond the above statement there is no mention of how or what successful, innovative, and good practices are for the homeless and affordable housing. This thesis is attempting to speak to the potential of renewable energy sources as one measure of success, as well as projects that are community-based and where the community sees the benefits from its own economic

development. This is what the poems speak to at the beginning of this thesis; it is imperative that our development comes from our own choosing and doing.

Although policy states a willingness to provide appropriate housing, the idea of what is "appropriate" needs to be stretched to include innovative and creative ideas such as natural designs and construction, which promote an awareness of our relationship to the land. Transformative in its potential to contribute to meeting housing needs, especially for the poor, the use of natural building methods offers a long-term commitment to honouring the lives of people and place. David Orr (2002) explicitly states that, "designing with nature . . . disciplines human intentions with the growing knowledge of how the world works as a physical system. The goal is not total mastery but harmony that causes no ugliness, human or ecological, somewhere else or at some later time" (p. 4).

Ecologically Sustainable Lifestyles: Matters of Choice

I do want to live more gently on the land and not use so many of its resources wastefully. (p. 21)

Ecologically sustainable living has not been given due recognition. The term and concept includes those people who choose a certain way of living that comes from a keen awareness and sensitivity to humanity's impact on the land and all things living and non-living. For those people not involved with such lifestyle choices, perceive they are somehow inferior, impossible, or unnecessary compared to mainstream living options (Kennedy, Smith, & Wanek, 2002). This

unfavourable viewpoint is due largely to a lack of understanding of what ecologically sustainable lifestyles include, as well as an honest listing of the pros and the cons. It is important to bear in mind that such lifestyles, more often than not, are careful and conscientious choices based on strong moral beliefs and principles of relationship to the land. Choices of habitation, food and material consumption, and energy usage, are essential components to an individual, family, or community intent on setting the environment as a priority. One of the places Sarah mentions and where we went on a tour is the Craik Sustainable Living Project.[10] The town of Craik, Saskatchewan, in partnership with other ecologically oriented groups, is the most concrete example of a group of people who are acting on their choice to live a more ecologically sustainable lifestyle.

Although organized around the larger framework of sustainable lifestyles, the focal point of the *Building Skills, Building Homes* Project was the building of two straw bale structures. The reasons these two structures were chosen rests with each partner's goals and the owners' resources. The Prairie Institute for Human Ecology and the landowner of Kissimmee Lake have plans to use the vault cabin, constructed near Shell Lake, Saskatchewan, as part of an eco-educational venture. The second structure, a composting toilet facility, will be used by students and staff of the Brightwater Science and Environment Program (Saskatoon Public School Division) as a teaching tool for alternative building structures and human waste management technology. Both structures will

maintain a community education component, used by individuals and groups in educational settings. Many aspects of learning about ecologically sustainable lifestyles for the project were centred on the construction of these straw bale structures.

What makes a natural homebuilder different is the extreme attention given to energy efficiency, which often forsakes some or all conventional forms and designs.[11] However, there are several examples of energy-efficient homes, businesses, and industries that are within the realm of what most people would accept as normal.[12] There are three major principles a natural builder or designer takes into account: energy, practicality of space, and a rootedness in place. All three of these aspects were dealt with in the *Building Skills, Building Homes* Project through direct instruction, field trips, and informal discussions.

Energy

The builders involved with the project learned more than just construction skills. They learned why these skills were important to the design and why the design was chosen. One of the main reasons a particular plan was chosen and attention given to where it was placed on the land was how that building was going to access, store, and release energy: heat, light, and body energy.

What we became aware of was that although there are energy-efficient technologies, there is not the will in society to change the way we harness or use energy. This sentiment is seen in such documents as *The Canadian Renewable*

Energy Guide (McKirdy, 1999) where “the recognition of environmental damage and pollution from primary and secondary industries will set the stage for unprecedented use of renewable energy, in combination with energy efficiency – displacing fossil fuels and nuclear energy over time” (p. xi). Further evidence of the reluctance for using renewable energy is the push, since the “energy crisis” of the 1970s, to have more, not less, expansion of the fossil fuel and nuclear industry, thus minimizing further the development and potential of renewable energy technology (p. xi). It is interesting to note that when presenting the project to others, the aspect of energy efficiency is always most appealing. Therefore, a discussion of straw bale as the insulation of choice is significant at this point.

Straw bale is one of many alternative building options that attend to the core issue of energy savings and contributing to environmental benefits. Simply put, it is another form of insulation. Straw bale walls have an insulation rating of between 43-70 R-value compared to, for example, a wood-frame wall with batting in-fill at 10-15 R-value (Kennedy et al., 2002, p. 64) – a very notable difference. In numerous designs, bales also have structural significance. One of the buildings in the project demonstrates a design called “load bearing”. This means the “bales act as both the structural load-bearing component and as insulation simultaneously” (McKirdy, 1999, p. 11). The upside of this technique is that less wood needs to be used. One of the oldest surviving North American straw bale structures, a church built in Nebraska in the late nineteenth century,

is a load-bearing structure. The fact that this church, still in fine condition, is over 100 years old is a testament to straw bale's longevity. Yet, such durability requires due care and, just as conventional housing is subject to fire, pests, and maintenance, so too alternative homebuilders must pay attention to the same hazards and concerns.[13] Obtaining knowledge of the particulars of these concerns is very necessary and specific but is neither a pro nor a con; all buildings, no matter how they are built have to be safe and maintained. A perceived negative might be that, because natural building methods are a niche industry, they are often labour intensive. Most often, though, they are a labour of love for the owners and their crews of friends and relatives[14].

A straw bale design was chosen for the *Building Skills, Building Homes* Project because the bales are more readily available, require little or no preparation, and are relatively faster to construct than some other alternative methods (such as stackwall/cordwood, rammed earth, or adobe). The trick about getting straw bales (not hay bales) is that in drought years (like the prairies have seen recently), straw bales are in shorter supply and can cost a little more. It is also necessary to know a farmer who still bales straw in the "old fashioned way", that is, in small rectangular-shaped batts, rather than large, round bales. There are also advances being made with straw insulation with such products as strawboard. [15] Nevertheless, the cost of ordinary straw bales is still lower than for regular insulation.

Another factor to consider is the total cost of a building, which can range from as low as $10 to as high as $200 plus per square foot (Lacinski & Bergeron, 2000. p. 56). Straw bale homes have the perception of being less expensive – which they can be. But in our western society there is a tendency to get complex and plain greedy: "buildings are complicated enough that no one material choice can have all that great effect on their total cost" (Lacinski & Bergeron, 2000. p. 20). One of the teacher/builders on the project put it another way, "most of the cost of any building is in the foundation and the roof" (Mainland, 2003). Even as the energy-saving technology of choice, there is still much to be learned about straw bale construction.

Space

The next aspect of ecological concern is space – how much of the land will we use, and with what will it be filled? The *Art of Natural Building* (Kennedy et al., 2002) talks about space and the practicality of utilizing only what room and materials we need. The idea of efficiency of space is central to many, though not all, alternative builders.[16] The generally smaller size of most energy conscious homes is contrary to the conventional North American ideal of larger houses for fewer people. These kinds of homes require more natural resources and more energy to heat and light, not less, per person:

> The WorldWatch Institute estimates that if the rest of the world used natural resources at the rate we do in America, it would take two additional Earths to meet the global demand. Overall, the 1.1 billion wealthiest people

> in the world consume 64 percent of the resources while the 1.1 billion poorest consume only 2 percent. (Kennedy et al., 2002, p. 154)

As well, Ghandi said, "Mother Earth has enough for everyone's need but not for everyone's greed" (Bhasin, 1992, p. 30). Kamla Bhasin goes on further to relate this story:

> Once a journalist asked Mahatma Gandhi whether he wanted India to have the same standard of living, which Britain had. Gandhi replied, "To have its standard of living, a tiny country like Britain had to exploit half the globe. How many globes will a large country like India need to exploit to have a similar standard of living?" (Bhasin, p. 30)

Like this journalist, I really wanted to believe that everyone on this planet could want and have the same standard of living as we do in North America. Now, due to the impact we are having on the environment, resources, and space, I doubt the validity of claiming all the space and materials I desire. How we use our space, that is, our environment also has an effect on our relationship, or lack of relationship, to place.

Place

There is more in the nature of a place than meets the eye. There is, embedded in the forms our shelters take, a story, but too often in our modernistic, industrially driven buildings there is a lack of attention to historicity, as David Orr (2002) relates in his book *The Nature of Design: Ecology, Culture, and Human Intention*. For example, he critiques campus building architecture as giving the message that it does not matter where we are being taught:

> The design of buildings and landscape is thought to have little or nothing to do with the process of learning or the quality of scholarship that occurs in a particular place. But in fact, buildings and landscapes reflect a hidden curriculum that powerfully influences the learning process. (p. 127-8)

Orr further describes the negative learning that occurs in buildings which teach us nothing of our locality, of how that place connects to our identity, or of how we give and take from our environment (energy usage). Most modern architecture is based on squares and lines, intending to be "functional, [production] efficient, minimally offensive, and little more" (p. 128). Such designs, he proposes, basically teach us to be numb to our surroundings or to the effect our lifestyle has on the environs; that, in essence, "disconnectedness is normal" (p. 128).

On the contrary, the structures built by the people involved in the *Building Skills, Building Homes* Project will relate a story, in pictures, in words, and in the telling: an understanding of humanity in relationship to self and the land. The purpose of story embedded in the building design is not only to entertain the sensibilities but also to teach, to continue the learning and the creating by drawing the attention to the importance of that particular building in that particular place. For the builder and the users of such buildings, that is, the community there is a strong sense of identity and belonging. William Vitek (1996), in the book *Rooted in the land: Essays on community and place*, also makes this argument:

> . . . [The contributors] speak directly to the challenges of rediscovering community in an industrial age. All of them believe that social

> communities placed in a landscape are both necessary and possible, despite the challenges and drawbacks, seen and unseen. (p. 6)

Another aspect of place is the use of resources at hand. Using local materials is very important to natural builders. As much as possible, they often utilize recycled materials, which require time and energy to gather and store. A person needs a unique ability to discern what recycled materials are useful and how to use them in a particular building project. This was a skill that one of the teacher/builders possessed and shared with the participant builders at the Kissimmee Lake site; the vault cabin was built almost completely with recycled materials. However, as valuable a resource as recycling may be, it becomes a limitation when you do not have land or need to support jobs and lives that do not allow for the space, time, and energy recycling requires.

Fortunately, there are initiatives by the government to encourage homeowners to become energy efficient.[17] Unfortunately, these incentives are only for those who can afford them. For the majority of people who cannot afford such options, and especially for those who rent, the power to influence society's direction to more energy efficient homes is limited by the current capitalist system of supply and demand. The argument that people buy, for example, sub-standard houses, processed food, or fossil fuel energy because they want to is false; it is more likely because they have few other choices, especially ones they can afford.

Another major difference for many, although not all, energy efficient options is that they are very local solutions, where individuals and communities

build or retrofit designs, using such choices such as solar heating, photovoltaic (electric power from sunlight), wind, microhydro, and biomass technology.[18] For example, Winona Laduke (2002) writes in an article called *Debbie Tewa: Building a Future with Her Community* about a village that chose not to have power lines installed. The decision was ecological, aesthetic, and cultural, but it was also political; it was about self-sustainability. Utility companies would gain right of way onto the land and could take the land if the band members were unable to pay their bills. Without power lines, and with the solar-powered system that Debbie maintains, they keep their lands and their autonomy (p. 218).

As we can see, what is really at stake here is the dominance of macro-organized industry for the sake of an economic world order at the expense of the development of locally sustainable solutions. Wolfgang Sachs (1999) has intricately exposed this rationale:

> The justification for economic globalization, then, is supposed to be that it establishes an empire of economic efficiency, and that this effect often extends to the use of energy and raw materials (OECD 1998). . . . [Yet] market rationalization may lower the use of particular resources – that is, input per unit of output – but the total use of resources will nevertheless grow if the volume of economic activity expands. (p. 136)

Even the capacity of a national solar industry, for example, would be miniscule compared to the present fossil fuel industry infrastructure and control of the ability to access energy. Alexandra McKirdy (1999) confirms this state of affairs when she says, “renewable energy resources can meet Canada’s energy demand many times over as they can meet all of our current electricity, heat and fuel requirements” (p. xiii). By this she means that once people are equipped

with individual solar panels or small wind generators the primary source of energy (for example, the sun or wind) would be free. The major costs would be in the production, maintenance, and replacement of units. Energy, along with the economic, political, and social structures that govern and disperse it, is an integral part of everyone's lives.

Indigenous Perspectives: Rekindling the Old Ways

For me, the old ways are the guiding principles and values that shaped our unique way of connecting to the world around us, our territory . . . We learned from the environment – the animals, the plants, and the weather – how to live with the land that was our home. (p. 21)

Throughout the previous sections, an attempt was made to convey a sense of the importance of why ecologically sustainable ways of living should be included in community development issues such as affordable housing. In this section, cultural perspectives on ecological living are discussed. Even a few environmentalists have a hard time understanding and maintaining a really good perspective on how other cultures view their relationship to the land (Cajete, 2001). Such perspectives are fundamentally a part of traditional Indigenous teachings historically and worldwide (Apffel-Marglin & Proyecto Andino de Tecnologías Campesinas, 1998; Cajete, 2001; Grim, 2001; Kawagley, 1995; LaDuke, 1999; Vasquez, 1998), although ecological activists vary in their inclusion and understanding of First Nations' realities.

Because of this gap, it is vital to understand that, as Winona LaDuke (1999) expresses from her people's teaching, "our commitment and tenacity

spring from our deep connection to the land. This relationship to land and water is continuously reaffirmed through prayer, deed, and our way of being – *minobimaatiaiiwin,* the "good life" (p. 4).

In my life I came to question my relationship to this land I was born into. In my mid-twenties, I attended a family reunion. My heritage is German-Russian and Roman Catholic. The priest, a cousin, spoke in his homily about the Old Testament Abraham and compared his life to how our family had prospered (gained lands and resources), increased our progeny (from the time my great-grandfather arrived in 1905 to 1985 there were more than 900 descendants), and produced much bounty (production is a key value of being German-Russian). I asked myself, in true black-sheep form, that like Abraham, "from whom did we prosper?" I was vaguely aware that these were not our lands initially and I began to question if we were prospering at the expense of others, namely the First Nation's people of this country. I felt then the stirrings of a critical awareness that the pioneer's impact has been not just a take-over of land but an even more devastating destruction of culture. In this section, I do not want to give an expose of that defeat but to explore the beginnings of what non-Aboriginal people need to learn and what needs to be unlearned.[19] The issue is not so much about any one ethnic group but about the living culture, locale, and spirit. This commitment seems vital to Indigenous peoples. Euro-Canadians must be more open to learning from those people whose lands we share.

Indigenous peoples interpret everything from land ownership to language-driven concepts, such as the term culture, differently.

The *Building Skills, Building Homes* Project encouraged participants to seek knowledge of identity and place through ceremonies and teachings. Sarah spoke eloquently about her desire to rekindle the old ways of her people. This was an unexpected part of our interview. I was surprised that she would think about what we were doing as "learning the old ways" rather than as "community sustainability" and other language similar to what I was using.

It is crucial to understand the difference in how we use words and word concepts. For example, in an analysis of words like "culture" and "nature," Jack Forbes (2001) notes that the Lenape (and similarly other peoples of North America) have a different meaning for the word "culture." They use "culture" more as a verb, "doing, acting, behaving, or living in a certain way . . . 'together-doing'" (Forbes, p.118-9). Conversely, in non-Aboriginal contexts, "culture" is used more in its noun forms, to name statically something in a category of place or time, "providing the illusion that there may be something out there in the real world which corresponds with the word" (p. 116). He states that although "culture" is used as an abstract noun, it cannot be "inherently fixed, static, and separate, while the reality is that what we, as humans, do is always changing (however slowly) and is never separated from other humans or the environment by absolute boundaries" (p. 116). Basically, everything non-Aboriginal people do, think, and speak is done differently from Indigenous peoples' perspectives of

reality. It is essential to learn that this difference is valid and necessary, moreover with openness of heart and mind the shift in thinking is not difficult to grasp.

In terms of a sense of place, Indigenous peoples have succeeded in preserving the land in relatively pristine naturalness, thus making environmentalism a non-issue for thousands of years over vast spaces. Whereas non-Aboriginal people have sought to control the land and mold it to their idea of what it should be and do, Indigenous peoples have done the opposite:

> The traditional relationship and participation of Indian people with the American landscape includes not only the land itself but the very way in which they have perceived themselves and reality. Indian people through generations of living in America have formed, and have been formed by, the land. . . . The land is an extension of Indian thought and being. As one Pueblo elder states, "it is this place that holds our memories and the bones of our people. . . this is the place that made us!" (Cajete, 2001, p. 623)

The key difference here is that Indigenous peoples have been formed and informed by their environment. Each culture has created its own unique blend of traditions and ceremonies, language and story, that has allowed Mother Earth to teach the people how to live with her. They do not hold this knowledge captive or the property of a select chosen few. Many First Nations people realize that their existence and the restoration of traditional values are "fundamentally about the collective survival of all human beings" (LaDuke, 1999).

Yet, as Sarah indicated, going back to the "old ways" is not that easy or direct. Nor is it about going back, but about bringing forward the values, the discourse with the land, and the communality. The values for Indigenous people

are embedded in teachings, traditions, language, and action (Forbes, 2001). The discourse with the land is a relationship born of patient listening, observation, and acceptance of limitations. Failure to accept our limits is something for which Wolfgang Sachs (1999) criticizes globalists and environmentalists alike (p. 153). We just do not know when to stop or hold back on progress, be that technological, social, economic, or political. Such thinking is deeply rooted even in the most socially progressive thinkers of our time. Following are two examples of the kind of thinking necessary to effect community sustainability.

Learning and Unlearning: Two Examples

I know I would not feel as strongly about self-sustainable living if I had not had the experience of the Building Skills, Building Homes Project. It gave me the opportunity to really learn, not just in my head, but with my hands, what this sustainable living is all about. (p. 18)

Re-thinking human waste

Following is an example of how many people in the "developed" nations must continue the process of unlearning old messages of what is normal and acceptable in building, living, and structuring community. Madhu Suri Prakash and Hedy Richardson (1999) convey, in a pithy article entitled *Turning human waste into gifts of soil?,* how a Latin American community, unable to access modern sewage infrastructures, has opted for its own alternative waste management system that is turning human waste into reusable compost. They succinctly present the waste management problem:

> Being as opaque as all other modern technologies, modern sewage systems fail to reveal to their users that by promoting convenience today, they are inconveniencing those yet to be born; that by absorbing vast proportions of the water piped into private homes and public institutions, involving an inordinately high consumption of energy, they are creating scarcities of drinking or irrigation water for those that constitute the Two-Thirds World ("social majorities"). (p. 67)

After reading the article, one has the sense that there is something more than just using a lot of water in the flush toilet that needs to be reconsidered. There is a connection to a larger picture of the myth of convenience that is governed by modern norms of behaviour in matters considered private, obscure, and disconnected, as well as controlled by a complex array of bureaucracy and official regulations. To demonstrate the level of such a reality in our country, imagine for a moment trying to install a composting toilet in our house or business. Even if one were personally sold on the idea, the actuality would be nearly impossible. Nevertheless, composting toilets are becoming of more interest to cabin owners who once again are able to afford such a "luxury."

The project, in Xico-Chalco, Mexico, described in this article mirrors the kind of learning experience we were attempting with the *Loo with a View* – the second building constructed in the *Building Skills, Building Homes* Project. Similar to the project in Mexico, ours was communal, involved integrated hands-on learning, and implemented a uniquely localized solution. The *Loo* will house two different kinds of composting toilets, as well as a third for liquid waste. In sharing this technology with students, teachers, and visitors to the site, participants and leaders of the *Building Skills, Building Homes* Project had to

breakdown some of the common conceptions of human waste management that we basically take for granted. Similarly, the project in Xico-Chalco involved a community-based, ecological literacy project around the installation of dry latrines (very similar to composting toilets), with comparable learning components.

Prakash and Richardson (1999) describe four principles that need to be unlearned. This kind of learning and unlearning can be applied to how we build structures and utilize all forms of energy (as well as their example of the dry latrine project): by shifting our thinking, attitudes, and perceptions. First, there is the false perception of *less than*, that somehow a technology that participates in ecological restoration (like dry latrines, strawbale homes, and solar power) is not as good as technology that wastes and bleeds the earth. Second, there is a need to "liberate [ourselves] from the blind faith" (p. 69) that technologies of the developed nations are superior or more desirable. Third, it is now known that even if such developed technologies from the North are offered, the catastrophic nature of these ideas are based on "a whole set of ecological, economic, political, health, moral, and educational reasons" (p. 69). Finally, the awareness must be developed whereby nurturing strong leadership in the community is necessary to sustain a radically different lifestyle choice. It is this unlearning that so many writers of ecologically alternative ways of living are trying to communicate through their words, their actions, and in truth, their prayers. It is this shift in awareness that the *Building Skills, Building Homes* Project was trying to impart to

its students, whether they were participants, leaders, visitors, or others, either directly through instruction and discussion, or through the action of doing something different.

Re-thinking Praxis

Paulo Freire is a progressive thinker and activist of our times. His development of the concept of praxis can be viewed as the basis for an understanding of the dynamic of action and reflection that intersect and inform each other. Here we are concerned with the interaction of our relationships in the quest for alternative lifestyle practices. However, throughout this thesis much attention is given to the environment and the spirit of the land, its animals, trees, rocks, and birds; they have been part of this discourse, within the action and reflection. Many Indigenous people and some environmentalists seek to include the sentient ness of Mother Earth in our conversing and knowledge sharing. This inclusion, however, is actually in stark contrast to the foundational starting point of "praxis" for Freire. Influenced by a Catholic and European scientific dualistic mindset, Freire (2000) states:

> Humankind, as beings of the *praxis*, differ from animals, which are beings of pure activity. Animals do not consider the world; they are immersed in it. In contrast, human beings emerge from the world, objectify it, and in so doing can understand it and transform it with their labor. (p. 106)

It is not that he is wrong; it is just that he has it backwards. We do not understand the world by objectifying it; we come to understand the world by submersing ourselves wholly, humbly, completely, and sacrificially into a stance of learning from the world and are thus transformed by it. Animals are "pure"

(p. 106), but in the Indigenous teachings it is we who must choose to learn from them. Yupiaq researcher, Angayuqaq Kawagley (1995) states:

> Alaska Native peoples have traditionally tried to live in harmony with the world around them. This has required the construction of an intricate subsistence-based worldview, a complex way of life with specific cultural mandates regarding the ways in which the human being is to relate to other human relatives and the natural and spiritual worlds. . . . [For example] attitude was thought to be as important as action; therefore one was to be careful in thought and action so as not to injure another's mind or offend the spirits of the animals and surrounding environment. For one to have a powerful mind was to be "aware of or awake to its surroundings". (p. 8)

Implicitly, Freire would agree with the need for an appropriate attitude. And he might agree that with diverse experiences comes different awareness that affect our thinking. He might be reluctant, though, to acknowledge learning directly from things non-human. William R. Wilson (1997) concurs with the need to readjust our thinking and acting in this regard:

> Deep ecologists argue that anthropocentrism is an epistemological error, shared by many large philosophical traditions, which leads to individuals perceiving and evaluating their actions in Creation as if only humans are of value. . . . [It] is an epistemological error, deep ecologists claim, because it is a belief which denies the fundamental truth that all parts of Creation are inter-connected and inter-dependent. (p. 5)

George Cajete (2001), a Pueblo Indian educator, completes this adjustment of attitude to the land by saying, "the Americas are an ensouled geography and the relationship of Indian people to this geography embodies a sacred orientation to place that reflects the very essence of what may be called spiritual ecology" (p. 623). He encourages more place-oriented learning

approaches in a real and tangible understanding of what it means to be human in relationship with nature, self, and others.

How does this affect the identity of community educators? It might be better to ask, who are the community learners, and who are leading projects of learning? They are the people involved in directing, managing, and promoting community development, issue-driven organizations. In this case, the *Building Skills, Building Homes* Project was an example of community sustainability, where diverse community groups and individuals learning together about how to become attentive to our relationship with the land and with each other.

[1.] For more information on this resort village see: http://www.rkc.ca/shell_lake/.
[2.] This land is adjacent to the Salvation Army Camp and both sites are used to run ecological and science oriented programming for children, youth and adult groups, from the public school system and other educational related facilities interested in outdoor education opportunities. Follow the links to Brightwater Science and Environment Centre at http://www.sbe.saskatoon.sk.ca/www/programs.html.
[3.] For a good discussion of strawbale construction in Canada see *Serious straw bale: a home construction guide for all climates* (Lacinski & Bergeron, 2000). And for a description of one of the composting toilets used at Brightwater see: http://www.sun-mar.com/. The other composting toilet was a passive solar design by the teacher/builder, Craig Shearer.
[4.] For more information on this organization see www.quintsaskatoon.ca.
[5.] In the thesis there is a chapter devoted to a narrative from Sarah and myself identifying issues based on our reflection of our experience of the project.
[6.] Numerous studies have been conducted in this area: Court, G., & Moralee, J. (1995). *Balancing the Building Team: Gender Issues in the Building Professions.* (No. Report 284.): Sussex Univ., Brighton (England). Inst. for Employment Studies. BBB33290. Eisenberg, S. (1998). *We'll call you if we need you: experiences of women working*. Ithaca, NY: ILR Press. Goldfrank, J. (Ed.). (1995). *Making ourselves at home: women builders and designers*.
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[7.] In 2001, the average household income in Briarwood (an new suburb) was $133,468 while the average household income in Pleasant Hill (an inner city neighbourhood) was $22, 603 (Quint Essentials Newsletter, Winter 2004, p. 11).
[8.] See: http://www.city.saskatoon.sk.ca/org/city_planning/affordable_housing/index.asp. To date the City of Saskatoon will not allow any permanent straw bale structures to be built.
[9.] This report is available at the following site: http://www.city.saskatoon.sk.ca/org/city_planning/affordable_housing/resources/FinalReport.pdf

[10.] See their website at: http://www.craikecovillage.ca.
[11.] See the following web sites for examples: http://www.greenbuilder.com/sbat/2001_Home_Tour/, http://www.archibio.qc.ca/pages/bale.html, and http://www.alternatives.com/cob-building/whatiscob.html.
[12.] For local examples of other cities and rural areas see these selected sites: Saskatchewan: http://www.rkc.ca/~studiotrail/brochure2004.pdf, http://www.sboa.sk.ca/remarks.htm, Regina: http://www.harvesthomes.ca/applications.htm, Calgary: Alberta Sustainable House Society (web site not operating), Edmonton: http://www.geocities.com/RainForest/8264/main.html, Alberta: http://www.greatexpressions.ab.ca/heartwood/index.htm. And the University of Manitoba: http://www.csae-scgr.ca/Perspectives/Winter04/Winter04Newsletter.pdf. For general listing of resources see the bibliography compiled by Canadian Housing and Mortgage Corporation: http://www.cmhc-schl.gc.ca/en/Library/whpu/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=14297.
[13.] See: http://www.thelaststraw.org/, and http://www.dsaarch.com/.
[14.] For example recent articles highlight this collaborative strategy: (Brooker, 2003; "Build a house of straw," 2002; Cruickshank, 2002; Mitchell, 2002)
[15.] There are also other types of straw insulation such as strawboard, which is mechanically compressed straw. See for examples: http://www.agriboard.com/, http://www.goldboard.com/index.html, and http://www.quantexdesign.com/gen_x/straw/strawbale.htm.
[16.] See for example Harrowsmith (No. 175, April 2004). They promote luxury sustainable living, that is, a 5,000 square foot home for two people. This is not sustainable living; it is just luxury.
[17.] See: http://oee.nrcan.gc.ca/english/index.cfm?Text=N&PrintView=N.
[18.] Not all energy efficiency options are local and communal, for example, wind farms. Although touted as ecological, they are very dangerous to the environment. Winona LaDuke (2002) tells the story of the Cascade Klickitat, *The wind that blows over our ancestors: nature's power, Enron and Native lands,* where they have fought energy broker Enron's wind farm on their ceremonial mountain. Again, the issue is not wind energy, but the disrespectful way outsiders are imposing their shortsighted desires of oversized projects (p. 12-17).
[19.] Exposure of the cultural genocide and the swelling movements to decolonize Indigenous thought, structures, and actions are well documented and growing. (See for example: Cardinal, 1999; Churchhill, 1998; Duran & Duran, 1995; Stannard, 1992; Tuhiwai Smith, 1999; York, 1990).

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