Case Studies for Colwood Presentation

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Submitted by

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Sustainable Community Development

Royal Roads University

Contents

Theme - Natural Systems

Women's Association (SEWA) Jeevika Project

Jeevika is defined as "means of livelihood"

The Self-Employed Women's Association (SEWA) is a member-based organization established in 1972 that represents over 300,000 female workers from deprived sectors of society in India (SEWA, cited in Datta, 2003). SEWA's aim is to organize social change by building the capacity, economic self-reliance and social security of Indian women (Coady International Institute, 2011).

Case Study by Leanne Bilodeau

This case study is based on the Jeevika Project spearheaded by SEWA in 2001, in partnership with the Governments of India and Gujarat and the International Fund for Agriculture and Development, with the support of the Coady International Institute. The Project's aim is to support the economic recovery and long-term sustainability of 40,000 members living in earthquake affected villages in Gujarat (Coady International Institute, 2011).

The Jeevika Project is an asset-based community development program that is organized and led by villagers and community development committees. Villagers allocate temporary seed funding provided by SEWA project partners to respond to immediate recovery needs and to identify and mobilize existing assets and resources. The goal is to increase the capacity and self-reliance of the people to build and sustain the socio-economic development and wellbeing of their communities (Coady International Institute, 2011).

The subjective quadrant of the integral model represents individuals' internal reality: it accounts for human experience, values and motivations (Brown, 2005). Within each quadrant are lines of development that represent human capacities (Esbjorn-Hargens, 2009) and intelligences (Dawson-Tunik, Dawson, Gardner & Graves, cited in Hamilton, 2008). Human interior development is critical to sustainable development and social change (Esborjn-Hargens cited in Brown, 2005) and human development has the capacity to move toward greater levels of complexity (Hamilton, 2008).

The Jeevika Project's approach to sustainable development acknowledges and builds capacities within the subjective quadrant. Below are several examples.

1. *Translating values:* a method that seeks to understand worldviews and tailor shared aims in ways that are relevant to the way individuals see themselves in their world (Brown, 2005; Hochachka, 2005).
    - The Jeevika program is not imposed; it is "grounded in the reality of the members" (Coady International Institute, 2011, p. 7). Individuals in the villages are approached, information is shared and rapport is built. The program honors the values of the people and proceeds at their level of interest, readiness, and commitment (Coady International Institute, 2011).
    - A worldview grounded in extreme poverty requires that individuals see immediate benefits to participation in order for the program to be successful. Immediate access

to economic generating opportunities and basic needs such as water are provided (Coady International Institute 2011).

2. *Evolving lines of development:*
    - Jeevika program activities must enhance human capacity toward employment and self-reliance. For example, evidence of leadership development within all women is required (Coady International Institute, 2011). This demonstrates an interior-individual focus to move individuals to greater levels of capacity within developmental lines and between levels.

3. *Self-Knowledge through Mapping Community Assets*:
    - Techniques are shared with village leaders that enable them to work with the community members to map community assets. For example, Kretzman and McKnight's model of mapping individual skills – hand, heart and head (cited in Coady International Institute, 2011), is used as a method to enable villagers to recognize their own unique physical, emotional and cognitive intelligences and that of others. This builds awareness and self-confidence and enables the community to identify, match and mobilize strengths to meet needs. (Coady International Institute, 2011).
    - Motivational tools, such as appreciative interviewing, community analysis of success, and positive deviance are aimed to maintain positive momentum of individuals in their efforts to become self-reliant (Coady International Institute, 2011)

Application to Colwood*:*

Climate change is linked to human development and behavior:

- Perceived benefits and barriers to participate in a Climate Action Plan (CAP) (UL) may be important, in particular, in the context of climate change where the impacts of individual actions are difficult to see and measure.
- A variety of tools and techniques exist to build awareness of self and others while mapping community assets for climate mitigation. These can be applied to supplement existing information (UL), to develop approaches that are aligned with existing worldviews and to begin to shift individuals toward new levels of development.
- Subjective perspectives will allow an understanding of how current initiatives are viewed. For example, does the provision of funding to implement Solar Colwood projects have an impact on beliefs about economic barriers to participate? Has the project resulted in greater awareness about climate change? Are people more willing to participate or change behaviors as a result?
- Interior-individual development and collective shifts toward achieving CAP can be assessed. For example, there is an opportunity to re-survey perceived community involvement and happiness, post-CAP implementation.

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Cortez Island

Case Study by Ione Brown

The Trust for Sustainable Forestry (the "Trust") was started by a few key individuals with the vision for a sustainable community on Cortez Island where the "ecological integrity of a forest (LR) can be maintained at the same time as providing space for living and allowing the creation of diverse economic occupations". The case study, found on Ann Dale's CRC blog (http://www.crcresearch.org/case-studies/index) describes the successes and failures of this particular project (called "Everwoods") as a pilot for similar projects in other communities. The lessons learned here can also be applied to the City of Colwood.

How did the Trust approach the consciousness (UL) of the individuals of this community prior to proposing plans (LR) for this new development and how could an integral SD framework help make the next community development more successful? According to Ling and Dale, the initial attempt at community engagement (UL, LL, interiors) was unsuccessful (n.d). It seems that the proposed development for Cortez Island was designed for the community without an integral understanding of individual values and beliefs (UL) and vision of the community itself (LL). Even though the values (UL) of the Trust and the community were essentially the same ("the desire to preserve the ecology of the forest (LR) and ensure the resources (UR) of the Island are protected), from these values had emerged differing worldviews and mindsets. The community had no prior experience (UL) with this type of proposed development so their desires and beliefs (UL) were rooted in a mistrust (UR) of typical development (LR) and developers which resulted in a preservationist culture (LL) on the Island.

Hamilton (2008, p. 112) states that "an integral approach to consciousness enables us to see the evolution of hierarchies of capacity and helps focus attention on what is valued and intentions on behaviours and outcomes that match those values". A facilitator or leader has to be very aware of his/her approach to community development. If the Trust has its center of gravity in a postmodern worldview, "showing an understanding (UL) of the earth and consideration for future generations" (LL), it may also show unhealthy expressions through trying to impose solutions or "to know what is best for" communities (Brown, 2005, pp. 30-33). If sustainable development is the vision (LL) of the community then we need to "learn to work with the values (UL) that people hold and translate what needs to be done so that it resonates with those core values" (ibid, p. 11). Ling and Dale describe the situation on Cortez as "…the vision may be ahead of the majority ….. the need for leadership that can demonstrate to the community the compatibility of their vision with the planned development, and is this a failure of the imagination of the community, and/or a failure of communication on the part of the Trust (n.d)? As described above, it would seem as though it was a failure on the part of the Trust to translate the communications to fit the worldview of the community.

In Colwood, one of the barriers that may arise is that of the city staff having different worldviews than that of the Mayor and Council and those of the sustainability leaders. Similar to the Trust project, experts can not impose the rational solutions because they believe them to be right, which can lead to mistrust, as happened on Cortez Island. Even a great idea can be met with skepticism and resistance as described by Brown (2005) if "their design and implementation (exterior) are

not rooted in an understanding of – and tailored response to – vastly different stakeholder values" (interior) (p.7).

The Living Forest Communities (http://www.livingforestcommunities.com/) group has another project in the works for an area within the Cowichan Regional District north of Victoria (http://www.elkingtonforest.com/) where they plan for another development with cooperative agricultural land and have already had the local zoning changed to include a "Community Land Stewardship Zone". Hopefully they have completed the community engagement using an Integral Sustainable Development Framework and there is an alignment of the purpose or intentions of the municipality, the individuals and the Living Forest Communities. Perhaps there is room for a "living forest community" within the CRD or Colwood itself, what a great way to appeal to the UL quadrant with beauty, aesthetics, meeting the personal values for maintaining the resources in a sustainable manner and living in densified neighbourhoods with live-work opportunities and retention of local resources!

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Chief Darcy Bear of the Whitecap Dakota First Nations

History & Culture

Case Study by Vickie Clarke

The people of the Whitecap Dakota First Nation are part of the larger Dakota First Nation that includes three Siouan-speaking culture groups: Dakota, Lakota and Nakota. About half of our more than 470 Whitecap Dakota members live on our reserve land.

Whitecap Dakota First Nation took up permanent residence in the Saskatchewan area in the 1860's; however, Dakota people have occupied areas of Canada for centuries. Archaeological evidence indicates Siouan-speaking people have inhabited areas from Lake of the Woods to what is now southeast Saskatchewan for many generations. The Dakota were military allies of the British during the American Revolution and helped defeat the Americans in the War of 1812.

Chief Whitecap (Wapahska) led his people to the Saskatchewan area in the early 1860s to escape political turmoil in Minnesota, where they were living at the time. By the end of the 1860s, his people were hunting and camping in a territory that reached west to the Cypress Hills and north to the North Saskatchewan River.

They tried their hand at farming, but the land was very sandy and the crops poor. They then moved to their current home, where they earned a very good reputation as successful cattle producers. After World War Two the band could no longer stay competitive and up until 1990 the Whitecap First Nation Band had no on reserve economy. Chief Darcy Bear had lived off reserve and saw the possibilities for his people. Chief Bear wanted band members who were living off reserve to return as well as improving the lives of the people still living on the reserve. Chief Bear had a vision for the future, a sustainable community.

As stated by Brown "All of the exterior things that sustainable development (SDv) calls for—opportunities, health, and education for all; clean air, water, land, and food; poverty alleviation; industries with zero harmful emissions; culturally and environmentally sensitive development; zero population growth, etc.—are made possible by interior human motivators that make us voluntarily want to bring about these changes" (Brown). Chief Bear set about acquiring these things for his community. As part of a sustainable community Chief Bear created long term permanent employment. Chief Bear understood the need to show short-term benefits (employment) on the way to long-term benefits (sustainability). Chief Bear understood the culture and value system of his people and related his vision to them on their level.

According to Hamilton, the upper left quadrant of the human condition relates to a person's subjective sense of well-being – health, safety, relationships, standard of living, achievements in life and future security. Chief Bear seems to have focused in on these and acquired them for the reserve.

Related to Colwood

It takes a leader with the power of 8 to change a community. Chief Bear was able to relate his vision to the community and therefore support his efforts in changing the community. Colwood needs leaders that can lead by the power of 8. Being able to see the overall vision for the betterment of the community and then be able to relate the vision to the residents at their level of understanding. One of the first things Chief Bear did was to give people employment. Not just minimum wage jobs but living wage jobs with room for advancement through education and mentoring. Colwood needs to give the residents short-term positive results; in this way the resident will buy into the Solar Colwood project. The leaders of the Solar Colwood project need to find out what the residents value and reflect this back to them. As well, the project needs to reflect the subjective sense of well-being to the residents.

Chief Darcy Bear

Darcy Bear is the Chief of the Whitecap Dakota First Nation, located 26 kilometres south of the City of Saskatoon. Chief Bear grew up in Whitecap, attending high school in Saskatoon where he obtained his Grade XII. He also holds a Business Administration Certificate from the University of Saskatchewan. His dedication to First Nations people has spanned more than 15 years.

In 1991, Darcy Bear was elected to the Council of the Whitecap First Nation. In 1994 he became Chief and is currently serving his sixth term. During his tenure, Chief Bear has been instrumental in creating a comprehensive **Economic Development Plan** and a **Community Sustainability Plan** that have positioned Whitecap as a leader among First Nations across the country. Some of Chief Bear's accomplishments include: **Community Infrastructure**

- New Elementary School (1996)
- Community Water and Sewer Infrastructure (1996)
- Public Waste Disposal System (1999)
- Waste Transfer Station (2001)
- Three Phase power and expanded Natural Gas (2002)
- High Speed Internet and Cellular service (2004)
- Expanded sewer and water including large commercial Water plant (2006)
- Paved community roads
- 60 new Housing units (2000-2009)
- Development of 49 lot Private Home Ownership subdivision (2008)
- Establish RCMP service on reserve (2008-09)
- Development of new retail facilities (2009)
- Development of for profit water utility
- Expanded Health Clinic (2010)
- School Expansion (projected 2011)

Partnerships

Partnerships with First Nations and Non-First Nations organizations have been key to the continued success of the Whitecap Dakota First Nation under Chief Bear's leadership. Economic development partnerships have resulted in the development of the $100 million Dakota Dunes Resort. The cornerstone of the development is Dakota Dunes Golf Links, awarded the "Best New Canadian Course, 2005" by Golf Digest magazine. The 80,000 square foot Dakota Dunes Casino and entertainment complex opened in August 2007. The Dakota Dunes Hotel is the next development in the resort master plan, scheduled to begin construction in 2010. Additional partnerships with surrounding towns and rural municipalities have already been developed that will enhance tourism and infrastructure development for the entire region:

- Whitecap Dakota First Nation and City of Saskatoon (Fire and Protective Services)
- Whitecap Dakota First Nation and Saskatoon Public Board of Education (Educational Service)
- Whitecap Dakota First Nation and Saskatoon Tribal Council (Health Services)
- Whitecap Dakota First Nation Tourism development partnership with surrounding Rural Municipalities and towns.
- Dakota Dunes Golf Course partnership (Whitecap Dakota, Muskeg Lake and La Ronge First Nations)

Economic Development and Employment

- Development of Dakota Dunes Golf Links Championship Golf Course 2005
- Development of Dakota Dunes Casino (opened 2007)
- Development of Light Industrial Park (ongoing)
- Development of Hotel Convention Center (construction to begin 2010)
- Development of Whitecap Trail Gas Bar Confectionary (expanded 2010)
- Development of Whitecap Development Corporation
- Creation of 600 jobs on reserve

Governance and Administration

Chief Bear initiated a governance and administration program to improve accountability and fiscal responsibility on the Whitecap Reserve. These accountability practices led to the alleviation of a 40% deficit on Reserve and allowed for a Financial Transfer Agreement with the Department of Indian Affairs in 1996.

- 15 consecutive unqualified audits
- 12 surplus operating budgets
- Financial Transfer Agreement with INAC (1996)
- First Nations Land Management Act (2004)

- Occupy Full GST on reserve Agreement with Canada Revenue Agency 2009
- Occupy Liquor Consumption Tax on reserve agreement with Province of Sask. (2008)
- Real Property Tax Bylaw

Chief Bear's accomplishments have made him a leader recognized throughout Canada and through strong governance and Economic Development has fostered relationships between First Nations and Non First-Nations people. Chief Bear is a passionate supporter of the links being created between the Aboriginal and Non-Aboriginal Communities in Saskatchewan, to improve the economic and social prosperity for all. He was recently named one of the "Ten Most Influential People in Saskatchewan" by Saskatchewan Business magazine. Whitecap was also awarded the CANDO "Economic Developer of the Year" for 2006. Chief Bear continues to play instrumental roles on numerous boards and commissions to enhance the future of First Nations people in Saskatchewan and Canada including:

- Federation of Saskatchewan Indian Nations Economic Development Commission
- Saskatoon Tribal Council Board of Directors
- STC Cress Housing Corporation Board of Directors
- Saskatchewan Indian Institute of Technologies Board of Directors
- Saskatchewan Indian and Training Assessment Group (SITAG) Board of Directors
- SaskTel Board of Directors
- Dakota Cree Sports Inc. Board of Directors
- Dakota Dunes Golf Links Board of Directors
- Dakota Land Holdings Inc.
- Whitecap Housing Corporation
- Whitecap Development Corporation Board of Directors
- Whitecap Hotels Inc.
- Whitecap Dakota First Nation Internal Portfolios & Committees:
  - Self Government
  - Administration & Finance
  - Economic Development
  - Housing and Public Works Committee
  - Whitecap Finance Committee
  - Taxation & Intergovernmental Affairs
  - Major Capital
  - Fire Protection

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OurWinnipeg

Case Study by Don Grant

This case study will focus on Winnipeg which developed "OurWinnipeg", a 25-year vision for the entire city and submitted it to the Manitoba Government for approval in July 2010 (City of Winnipeg, 2011, OurWinnipeg, para. 1) and will assess it against the integral model to determine the degree to which it follows the model. OurWinnipeg, is the City's new municipal development plan and it includes three Directional Strategies and a sustainability plan.

Winnipeg completed one of the most successful community engagement campaigns ever undertaken in support of municipal planning exercise with the involvement of more than 34,000 people through SpeakUpWinnipeg.com, at roundtable meetings, and at festivals and events (City of Winnipeg, 2010a, p. 5). This high level of involvement of the urban population provides an excellent opportunity to consider the four quadrants of the integral model in a case study.

When considering the UL quadrant it is important to consider the Obligation to Learn – "A city that can merely feed, clothe and shelter its citizens lacks the intelligence to sustain itself, because the sustainability comes from a commitment to learning about self, others and our shared life conditions" (Hamilton, 2008, p. 102). So should citizens be obliged to learn? Well the answer is sometimes. In some situations we use public education to reach citizens where it is deemed necessary with influenza vaccinations and flood assistance being two important examples. But these are rare instances with the threat of immediate consequences. Another great example was the One Tonne Challenge campaign – a challenge to every Canadian to reduce his/her greenhouse

gas emissions by one tonne. We work hard in cities to communicate waste management instructions – what to recycle, what to compost and what to put in the garbage. But we don't launch many campaigns of this magnitude and we don't force people, in most cases, to implement the behaviour change.

The City of Winnipeg worked with stakeholders to launch Speak Up Winnipeg! a significant public engagement campaign that not only attracted participants but also got the initiative into the press. (City of Winnipeg, 2010, p. 5). It was as successful as any initiative I have examined at attempting to get citizens to express their opinion. It generated interest and clearly established how citizens and stakeholders could influence the process. However, this represents the direct engagement of 5% of the population – is that enough?

Another important consideration from the UL quadrant is the Purpose of the City. From a citizen's perspective what is the purpose of the city? "The purpose of a city is the achievement of what its citizens can manifest together that would not be possible if they attempted it on their own" (Hamilton, 2008, p. 106). Hamilton also talks about meeting needs and references Maslow and Graves, sketching out the rise and evolution of cities. The key point for me is whether or not citizens understand this key point of interdependency that links local residents to each other and now to the rest of the global market. Our individual contribution is a fraction of the whole, but it is part of a self-organizing system that finds a way for us to contribute so that we may share in the benefits. For me the questions are do we recognize this interdependency, and are we prepared to do more to move towards local (and global) sustainability? Is there a pact between citizen and the city (as a collective of citizen) and a way of influencing that pact?

Winnipeg is a very cohesive community, perhaps because of the jokes inspired by cold weather and mosquitos, or by the challenges they face collectively. Although I have no data to support this assertion, I came to this conclusion when working with the City and facilitating sessions with its citizens and stakeholders. With regard to OurWinnipeg, the purpose is to revise the plans that manage the functional responsibilities of the City (waste management, water & waste water, and transportation) and that contribute to city-building – land use planning and urban design, all within the larger context of sustainability. In fact they have both a standalone document on sustainability and they are embedding sustainability into their master plans.

The other reason to select Winnipeg and Manitoba more generally is to consider the level of commitment to actions that will specifically address future flooding, adaptation to climate change more broadly and the adoption of mitigation measures. Of all of the places in Canada at risk due to extreme weather, Manitoba is one where they are thinking about changing infrastructure and even behaviour now in the face of future challenges. The situation is summarized well by Josh Brandon, the water caucus co-ordinator at the Manitoba Eco-Network.

The effects of global warming are already stretching communities across the planet to the breaking point. We share global environmental problems that threaten everyone. Just as we come together to build dikes and fill sandbags to protect our neighbours, we must all work together to solve this environmental crisis before it floods us all. (2011).

Winnipeg has an excellent series of plans informed by a significant public engagement campaign. They are coming off of their second major flood in 14 years where water levels equaled or surpassed 1997's once in 100 years levels in 2009 and 2011 (Brandon, 2011). They

should be motivated to come together as a community and implement their plan for sustainability.

Application to Colwood

Although Colwood is much smaller than Winnipeg it faces many of the same challenges as a part of the Capital Regional District and as a city in its own right. I would expect that I will be able to use this case study to inform our work for Colwood in the following manner.

- Complete Vision – OurWinnipeg is a set of five documents that cover the whole range of municipal affairs from transportation to waste to land use planning. Sustainability is integrated in all of the documents (City of Winnipeg 2010b, 2010c, 2010d, 2010e, 2010f). This should serve as an example and an inspiration to our team as we work on their plan.
- Complete Communities – With Solar Colwood as a prominent activity, the City can now look towards a complete urban development strategy. The Complete Communities document addresses a wide range of urban planning issues and in many ways map out the road beyond the Solar Colwood project.

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Mountain Equipment Co-op: A Sustainable Development

Case Study by James Gudjonson

The Mountain Equipment Co-operative (MEC), a Canadian owned and co-operatively run outdoor equipment store, recently celebrated its fortieth birthday (Mountain Equipment Co-operative Catalog, 2011). MECs' cooperative business model is based on co-operation rather than competition and this 'alternative' model has allowed them to remain competitive while integrating the environmental, social and economic imperatives of sustainable development throughout their business (www.crcresearch.org.).

Sustainable Development Characteristics

Community Research Connections (2011) outline that the MEC founders started with sustainability in mind, fostering a visceral connection between the outdoor, self propelled products they sell and the environment they enjoy. The MEC asserts that sustainability is inextricable linked to all aspects of their business and has decentralized sustainability from a function of management to integral part of every employee's responsibilities (MEC Website, 2011). The 1500 employees have a strong connection to the outdoor environment with 80 percent of them day hiking enthusiasts, 64 percent regular cycle commuters, and many employees active mountaineers, rock climbers, kayakers etc (MEC Website, 2011). The 3.1 million members are not only self propelled outdoor enthusiasts, 67 percent of them voted to have MEC advocate on their behalf on sustainability related issues, and rated wilderness conservation as their number one issue /concern (MEC Website, 2011).

Integral Connections

The MEC provides an opportunity for individuals to spend time in the outdoors and bond with nature, and through what they experience their Interior Individual consciousness, in the Upper Left (UL) of the Integral Model and their values are allowed to transform (Brown, 2005; Hamilton, 2008). Reichwein (2008) asserts that outdoor recreation inculcates awareness and social commitment to values of biodiversity conservation, wilderness advocacy and habitat protection. One example of this is Arthur Wheeler, the founder of the Alpine Club of Canada, who in 1923, through his 'attachment to place' as a result outdoor recreation, would go on to establish the Canadian National Parks Association, which advocated for conservation, in additional to recreational values (Sanford & Powter, 1994; Reichwein, 2008). McCarthy (2008) claims that environmental thinkers can learn from mountaineers (and other outdoor enthusiasts) and suggest they offer examples of human relations to nature, and how these relations might transcend their cultural context. The outdoor culture that permeates throughout the MEC is represented in the Lower Left (LL) quadrant of the integral map and identified as the "we", that is, the intersubjective realities, for example; shared values, culture and worldview, webs of culture, communication, relationships, norms, boundaries and customs (Wilbur, adapted by Brown, 2005).

The MEC is operated in a way that is consistent with the values of its members and in turn these values, that are shaped and nurtured by the members' attachment to the outdoors, guide how the business is operated by electing board members who reflect and champion these values. The exterior quadrants are made up of the Exterior Individual, the IT (the behavior of the board, mangers and staff) and the Exterior Collective, the ITS, (the systems, for example; purchasing policies, building operations, governance systems) (Brown 2005; Hamilton, 2008). The individual values in the UL quadrant 'drive' the sustainability agenda, keeping the exterior quadrants balanced and ensuring the social, environmental and economic imperatives of the organization are met (Brown, 2005; Hamilton, 2008).

Implications for Colwood

According to *Community Research Connections* (2011) the MEC has sustainable development and long term planning ingrained in its operations and their case study identifies 2 key features of sustainable development;

- A alternative governance system and cooperative business model
- A commitment to protecting the environment while providing safe, clean and plentiful spaces to recreate

The town of Colwood is similar to a co-operatively run business in that the Mayor and town council are voted in. This allows for the individual values (UL quadrant) and the collective values (LL) of the electorate to influence the decisions on the types of development in Colwood (through who they elect). The MEC case study proves that a connection to the natural landscape through recreation can influence the way an organization is run. This highlights the need to preserve Colwood's natural places and to encourage the community members to 'connect' to these places in order to transform their values.

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Community Action on Saltspring Island

Case Study by John Kirbyson

Introduction

This essay summarizes a case in which strong personal values, a community vision and a sense of place, galvanized the community into action to create a more sustainable human environment. Imagine seeing very stately, elegantly dressed grannies singing songs of protest, encouraging civil disobedience, or "lady Godiva" characters riding through a major city carrying signs criticizing local financial institutions. These are but a few of many individual and group actions that people of Saltspring Island, driven by their internal motivations, undertook to protect their community.

Background.

In early 1999, Texada Land Corporation purchased 10 percent of the land on Saltspring Island and legally began clear-cut logging. The area included; large areas of natural and ecologically sensitive habitat, salmon bearing streams, protection of a nearby pristine bay and a source for the community watershed. The site also had significant historical and cultural values as well as a history of recreation use and supported a local tourism economy (McEwen and Ling, n.d.).

Through extensive community engagement, media events, networking and lobbying, islanders were able to bring pressure on Texada to halt logging and to persuade all four levels of government and conservation societies collectively to purchase the land and designate protection status.

The Power of Personal Values.

The Integral framework provides a simple tool, a four quadrant perspective of the complex of individual, social and environmental phenomena essential in achieving successful sustainable development initiatives. Individuals are motivated by their own values, emotions and beliefs (UL), supported by cultural norms and shared worldviews (LL) and social systems (LR) to behave in ways that express their values (UR) (Brown, 2006a. p.10).

In the case study, the lands in question embraced the cultural and spiritual values of residents and the collective community (UL, LL) and created a strong sense of place that helped define the community. Logging was contrary to their vision, values and beliefs which provided the motivation, "provoked from their inner self", to take action. (op.cit). When we look at the Interiors or inner depths of motivation, the Signing Grannies and Lady Godiva were not street performers, they driven by their inner voice – their deepest motivations to protect their fundamental beliefs and in the end, achieved a successful sustainable initiative. The case demonstrates Brown (2006b) Integral Model concept that long term commitment to sustainable development occurs from a person's deepest motivations which in turn, are rooted in personal values. An individual will act in accordance with sustainability principles when he or she feels internally committed to doing so.

Implications for Colwood:

1. The city must recognize Brown's principle that motivation for residents to act sustainably must come from within their own personal values. The city administration must understand first how people with different value systems see and respond to the world and then, as Brown (2006b) outlines, must tailor communication programs that are psychologically and culturally appropriate to the various different resident groups so that the message resonates with their deepest motivations.
2. McEwen and Lang (n.d.) suggest that The Arts (music, plays, photography) helped achieve success because it was a strong medium of personal expression, public communication and interaction. In a strategy for sustainable cities, the International Society of City and Regional Planners (2010), advocate for cities to promote the Arts and also for cities to build public places to help citizens interact.
3. As Dale and Sparks (2008) conclude, any small city should recognize the strength of helping build relationships and developing social capital at multiple levels, thus creating opportunities for development of personal and social values and creating a cultural environment in which people feel empowered to act.
4. The stakeholders on Saltspring did not align in one cohesive group but instead in loose "affinity" groups which allowed more diverse views to be expressed. Brown (2006b,p.42) highlights the need to support diversity of views to achieve SDv.
5. McEwen and Lang (n.d.) recognized the resident vision for the properties help guide their sustainable actions. Colwood must continue to promote its OCP vision. Hamilton (2008, p. 111) states that for cities to function optimally, they must have a sense of purpose and that "without a vision, the people with perish" That vision begins with individual values which grow and develop through education and interaction and with other community members.

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The Case of Community Action on Salt Spring Island

Case Study by Iren Koltermann

Introduction:

This paper analyzes a case study of Community Action to halt a developers clear-cut logging operations on Salt Spring Island (SSI). The social dynamics are examined from the Upper-Left quadrant (UL) of the Integral Model. This quadrant represents "all the factors that directly influence an individual's experience of the world…one's thoughts, feelings, intuitions, sensations, and intentions… *what an individual experiences* (Brown 2005a, p.15-16)." Throughout the paper the other quadrants from the Integral Model are also referred to: the Upper-Right quadrant (UR) "houses *what an individual* does (p. 18)," the Lower-Left quadrant (LL) "encompasses *what a group* collectively experiences (p. 20)," and the Lower-Right quadrant (LR) houses *what a collective* does (p.23)." In conclusion, the implications of insights gained from this case study to the Colwood are explored.

Case Summary:

In November 1999, Texada Land Corporation bought 10% of the land on SSI and started legally cutting trees at 5 to 15 times the sustainable rate, on lands representing 40% of the Island's Forest Land Reserve (McEwan & Ling, n.d). Texada Land Corporation was highly leveraged and wanted to convert trees into cash quickly in order to meet mortgage payments.

Many of the Island residents were very opposed to this logging because they valued the natural environment, the old-growth trees, the tourism attraction of the land and they feared deterioration in the quality of water for community use and entering the pristine bay, as both were fed by the watershed being logged (McEwan & Ling, n.d).

Thus, the Island residents, and Texada had diametrically opposed views on the proper stewardship of this land.

Initially the residents attempted to transform the values of the owners of Texada to match their own. Once they realized that Texada was not susceptible to value transformation, they sought external points of leverage to influence the company. Over a period of two years, the residents organized themselves into affinity groups and used the arts, publicity stunts, and the media, to gain support and funding for their cause. They lobbied the government for assistance in purchasing and setting aside tracts of land. They researched the finances of Texada and appealed to the mortgage holder, the ethical investment fund who partly owned the mortgage holder and the lands prior owners for assistance in persuading Texada to slow logging and to negotiate a sale of the land to the community. They also conducted numerous fund-raising projects in order to raise money to buy land and carry on the campaign.

Ultimately, success was partially achieved. Half the land was logged over, but several government agencies did intervene to purchase tracts of the land. Texada was not willing to negotiate a reasonable sale price but the influence of the ethical investment fund acting upon the mortgage holder ultimately resulted in pressure that brought Texada to negotiate a sale.

Integral Model:

The campaign on SSI began with the values and strongly held beliefs of individual residents (UL). These residents supported each other emotionally and used their artistic talents to create an environment, where they were able to be express their thoughts, and emotions in a creative manner i.e. songwriters wrote songs for monthly town hall meetings, and they drummed and chanted as they blocked and protested logging practices (UL) (McEwan & Ling, n.d). They chose to persevere and showed a "long term commitment toward sustainable development" which "resides within an individual's choice. Voluntary choice is grounded in a person's deepest motivations, which are in turn rooted in his or her values… vital determinant for whether sustainable development remains a dream or solidifies into reality (Brown 2005b, p. 3)." As Hamilton points out "ultimately all attention and intention" in the community " is experienced at the level of the individual. It is only aggregated into political will through the coordination of multiple individuals (Hamilton 2008, p.100)." Through affinity groups the individual residents developed unity of vision and purpose (UL) and each contributed what they could to the process, for example, one person produced a documentary film for National Film Board of Canada and aired it on CBC TV to gain the support of the public (LL). They translated their values to many populations in British Columbia and solicited support (Brown 2005b). The sum of these individual initiatives culminated in a collective political will that sustained them through the two years and enabled them to achieve their goal of buying the land and keeping their environment safe.

Colwood Implications:

Colwood needs to become more aware of the values of all its stakeholders while pursuing the actualization of its sustainability goals. Inevitably the values of some of these stakeholders may be in direct conflict with the values of others. Colwood will either need a way to reconcile these conflicts (transformation of values), or it must go into the process with a clear vision of the dominant sustainability values of the community. In this way it can communicate its plans and goals by appealing directly to the values of stakeholders so that the message can resonate with them and create lasting changes in people's behaviour. (Brown 2005, part 2, p.11)

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The Perspective of "I" – Individual Motivation and Sustainable Development

Case Study by Deb Rasnick

Abstract

This essay briefly describes a situation where the influence point of individual mindset is leveraged toward creating a more sustainable human environment. Linkages with course concepts, and application to our community of interest, are then explored.

Tapping the Power of "I"

Ann Dale (2011) suggests that sometimes it's the little things in life that support change. Dale shares a TED Talk by Louie Schwartzberg (2011) on the *hidden beauty of pollination* and how, while vital to life on earth, pollination and the role of pollinators remain largely unseen by people. This story resonates with me as a brief and inspiring example of using the Integral Framework's upper left (UL) quadrant (Brown, 2006a) to create a more sustainable world.

Schwartzberg has time-lapse filmed flowers and pollinators for over 35 years and shares his view that "beauty and seduction... is nature's tool for survival, because we will protect what we fall in love with" (para. 2). Schwartzberg discusses the vanishing bees, and how learning about this crisis motivated him to take action. He articulates our dependence on pollinators for over 1/3 of the fruits and vegetables we eat, and how many scientists believe it's the most serious issue facing mankind. "If they disappear, so do we. It reminds us that we are a part of nature and we need to take care of it" (para. 3). When discussing his motivations, he connects them with pollinator motivations who act "because they want to survive" (para. 4). Schwartzberg closes by offering viewers "nectar" from his film (Appendix 1) along with a gentle call for action: "I hope you'll drink, tweet and plant some seeds to pollinate a friendly garden... take time to smell the flowers, and let it fill you with beauty, and rediscover that sense of wonder" (para. 6).

Dale (2011) ponders how much we risk by losing our seduction with the natural world, and ways to reintroduce this to our cities. "How much we take for granted, until it is gone, and some things we cannot afford to take for granted... that are so essential for life" (para. 1).

Course Linkages

I believe this story provides many linkages to the UL quadrant, including the importance of tapping into individual motivation, emotional intelligence, connections with aesthetics of nature and beauty, alignment with personal value systems and respect for life, love and safety, the desire to provide due care for others and the environment, and developing individual awareness of potential impact from committed personal actions (Brown, 2006b). Schwartzberg's communication style is humble but powerful and visually compelling. The latter touches on the sensory perspectives of individuals, complimenting the story's intellectual content supported through scientific thought. To see the potential of this presentation, one need only watch the discussion, and review the many viewer comments.

Brown (2006a) articulates that all the exterior things that sustainable development (SD) calls for are made possible by human motivators that make us want to change. Long-term commitment toward SD resides within an individual's voluntary choice, which is grounded in our deepest motivations rooted in values. An understanding of the essential role of value systems — and how we work with them — are therefore vital for SD. An individual will act in accordance with sustainability principles when internally committed to doing so; we must tap into such *mindsets* to entice commitment. As Meadows (1999) posits, mindsets are a significant leverage point, as the basis for collective paradigms, which in turn are the source for human systems; if you change the mindsets, you change the system. Such individual development "can happen in a millisecond. All it takes is a click in the mind… a new way of seeing" (p. 18).

Lessons for Colwood

This story provides many valuable lessons for the City of Colwood. The story highlights the importance of tapping into the personal motivations of community stakeholders in simple but powerful ways using multiple methods that speak strongly to both sensory and logical arguments; thus using methods that will resonate with individuals' multiple lines of intelligence (Hamilton, 2008). Brown (2006a) suggests that such development may be best facilitated through translation, which occurs when individuals are able to connect a proposed vision or initiative with their existing personal motivators to enable commitment. "If we can… work with the values that people hold and translate what needs to be done so that it resonates with those core values, then we may go much further and faster toward sustainability" (p. 11).

Colwood is already exploring the values of community members, which may improve their future systems, frameworks and actions in aligned support of SD. Initiatives such as their Genuine Wealth Report (2009a) and Economics of Happiness (2009b) provide initial indicators of value systems; such vital understanding will be enhanced as Colwood undertakes expanded conversations with broader community. Colwood leadership appears to understand the importance of interior motivation (Brown, 2006a) toward achieving sustainability – this in itself will hold the community in good stride as it moves forward.

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The case of how the Natural Steps came to be: The *'I'* Matters

Case Study by Tracy Steere

"The upper left (UL) quadrant of the integral map includes an individual's subjective experience and interior. It covers the entire realm of self and consciousness." (Brown, 2005 part1,p. 15). This paper briefly describes the daydream inspired from one man's subjective view of the world and the Sustainable Development model, now shared internationally. This paper includes suggestions for the City of Colwood.

Dr Robert was head of a cancer unit in Sweden, and while he was treating cancer patients he also noticed that pollution was increasing at an alarming rate. What that observation meant to him was that there must be some truth to environmental problems (www.context.org). "Learning arises from the endless interaction of attention and intention at ever-increasingly complex scales of observation" (Hamilton, 2008, p.102). He started to daydream about approaching peer scientists and writing and mailing a report out to 4.3 million Swedish households (Robert, 2002, p.14).

As a child Roberts (2002) loved being outdoors, particularly between town and open country where human creation co-existed with nature. He also felt a sense of anxiety around the expansion of city limits which continued as he grew older (p.6). Brown (2005) describes how "voluntary choice is grounded in a person's deepest motivations, which are in turn rooted in his or her values" (part 2, p.3) Roberts was motivated by his values and set out his journey, now known today as the Natural Step (TNS). TNS is a model developed to help communities and businesses better understand and integrate environmental, social, and economic considerations (www.naturalstep.org).

Brown (2005) says that "If we can learn to work with the values that people hold and translate what needs to be done so that it resonates with those core values, then we may go much farther and faster towards sustainability"(part 2, p.11). When Roberts began working with others they decided that they would take an approach "to be non-prescriptive: individuals would be free to apply what *(they)* we learned to their particular circumstances" (2002, p.25). This approach would have provided space to respect others and their values systems. As well Roberts (2002) wanted TNS "to evolve into an ongoing and growing dialog group whose specific purpose was to find guiding principles for sustainability that were neutral to political or religious beliefs" (p.24). Thus, making room to "reach decisions through reconciliation and consensus" a postmodern value (Brown, 2005, part 2, p.29), which also "promotes affiliation and personal growth" (ibid, p, 33) fitting well with TNS as they "were going to have an inviting attitude, so that they would be able to learn from anyone who wanted to take part in the search for (framework and details) "trunks & branches"" (Roberts, 2002, p.25)

TNS can provide Colwood with a model to work from. As well they can consider Roberts' initial approach.Roberts (2002) "made efforts to achieve consensus from scientists and business people. Then his group chose to ask advice of leaders in business and politics, instead of attacking them" (p.24). The City of Colwood can explore what value systems and world views their community members have, and work with them accordingly. Brown (2005) "describes that world views

dominate how we see reality, and that we cannot see the logic of a world view we have not passed through" (p2, p, 17).

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Inner City Farms

Case Study by Leanne Bilodeau

Background

Inner City Farms is a social enterprise developed by a group of friends committed to urban sustainable development. The group works in the City of Vancouver's communities to transform lawns and neglected gardens into small organic farms that produce local, sustainable food options, while generating relationships within the community (Blasberg, 2011). This case is supplemented by the Farmers' Markets and Local Food Systems Case Study on Ann Dale's CRC Blog (http://www.crcresearch.org/case-studies/index).

Inner City Farms contributes to developing sustainable communities in a number of ways. The farms build social capital by providing a means for social engagement and community participation (LL). The farms help build new capacities (UL) and opportunities to shift actions toward sustainable agricultural practices (UR). Ecological value is built by transforming water/maintenance intensive lawns into productive land that helps generate local food security (LR).

Urban Farms and Collective-Interior Development

In *Integral Cities*, Hamilton (2008) demonstrates that relationships are central to the development and evolution of city cultures. Relationships, social networks and connections between individuals that enable mutual support, trust and reciprocity define social capital (Putnam,1995). While these features enable collective social and economic benefits, they are found to be lacking within American communities today (Putnam, 1995).

The integral approach includes the interior-collective perspective, which reflects shared norms and values and addresses relationships within communities (Brown, cited in Hochachka, 2005). Urban farms as a local food system provides an example of how the interior-collective perspective contributes to sustainable development by generating social capital to help meet economic and social imperatives within the community.

Local food systems foster social capital by developing new bonds and human capacities (Hinricks; Lapping cited in Link & Ling, n.d.). Inner City Farmers work within a community-supported agriculture model (CSA), where members of the community are shareholders that fund farmers' operations in exchange for boxes of seasonal harvest (Inner City Farms, n.d.). This type of reciprocal relationship supports the cost of food production and helps foster a sense of trust and celebration in the shared risks and rewards of farming (Blasberg, 2011).

Urban farming also contributes to multiple community sustainability imperatives. For example, social and economic capital is built by local food systems that support the local economy, employ local staff and volunteers and provide creative solutions for sustainable agriculture (Link and Ling, n.d.). From an ecological standpoint, local food systems transform the use of urban land and help reduce emissions from transport (Link and Ling, n.d.).

Dale and Newman (2008) demonstrate that while social capital is critical to sustainable development initiatives, an infusion of economic and human capital is often required to sustain them, and the role of government is key in this process. In this case, the City of Vancouver has provided support for the community's interests in local food security through adoption of a Food Charter that defines the vision and enablers for sustainable local food systems. This is complemented by the formation of a Vancouver Food Policy Council and Urban Farm Network (City of Vancouver, Community Services, n.d.).

It should also be noted that there are many social challenges associated with local food systems. Among these are consumer expectations and choices associated with year round food availability that can only be met through industrial food systems; higher costs associated with urban land for local food production as well as higher costs of locally produced food; political systems and policy associated food production and export. (Link, n.d.)

Application to Colwood

The City of Colwood is taking steps toward greater civic engagement, through its Strategic and Official Community Plans and dialogue generated by the Economics of Happiness Roundtable and Public Forum. Social values are reflected in the community's desire for increased engagement in decision-making and active participation in the community through enhanced parks and trails, teaching gardens and an existing farmers market (West, 2009). There is a movement to expand local food systems on Vancouver Island, supported by the Capital Region (Link & Ling, n.d.). While the community needs to define its sustainability objectives, urban farms presents an opportunity to build on existing work and expressed values. It provides a model for community engagement and collective-interior development toward new social relationships and capacities that enable sustainable community solutions that help advance economic, social and ecological imperatives.

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Slocan Valley

Case Study by Ione Brown

The Slocan Valley of British Columbia is a region where intense conflicts over land management arose over 35 years ago and have remained substantially unsettled despite many attempts by government to resolve these issues. Stephan Martineau (2007) authored a case study to review how the Slocan Integral Forestry Cooperative (SIFCo)[1] was formed to obtain a Community Forest Agreement; an area-based forest tenure that will be managed by the local community.

A Community Forest is a small forest tenure recently created by the provincial government to benefit small communities and First Nations. Increasing the amount of small, local forest tenures in the province is one method for shifting the system so that more individuals and communities benefit from the local management of the forest. Martineau's vision was to utilize a new offer from the government to shift some of the forest tenure to the Slocan Valley to protect community values and goals (ibid, 2007, p. 36).

Case Study Review through the Intersubjective Perspective

The focus of this paper will be the lower left (LL) quadrant using Ken Wilber's four quadrant map, as adapted by Hamilton (2008, p. 62). The view into the "interiors of collectives" or the "intersubjective culture of reality" as described by Esbjorn-Hargens (2009, pp. 2, 3), will allow us to see how an integral approach was used to develop a cooperative (SIFCo) by working with the depth and complexity of the local community (p. 10).

Martineau (2007) had identified the Slocan Valley's environment challenge as a "local tangible" challenge, which is one that affects everyday citizens directly (p. 29). The strongly held and divergent feelings and beliefs held by community members in regards to how the surrounding forests should be "preserved" or "managed" resulted from decades and, in some cases, generations of using the local forest for livelihoods, for clean water, for cultural and spiritual traditions, for health and well-being, for aesthetics (beauty of nature) and a sense of place.

"This divergent and conflicted community would need to come together under one vision and replace the mistrust with a new direction to benefit all members of the community" (ibid, p. 36). "Community cultures depend totally on the quality of relationships" (Hamilton, 2008, p. 181) and this community would benefit from developing those relationships and intelligences.

The residents and stakeholders in this community are diverse and include: the Sinixt First Nation, the Doukhobors, former Japanese internment camp prisoners and their descendents, US migrants who were provided a "safe haven" in Canada during the war in Vietnam, a green community, domestic water licensees, forestry workers, forest companies, outdoor enthusiasts, farmers, miners, and the government (Martineau, 2007, pp. 30, 31). The identification of the "deep structures" of these divergent community members allows the practitioner to determine the worldviews, levels of development and complexities of the groups (Hochachka, 2005, p. 58). Martineau (2007) states that the "success in achieving a Community Forest depended on our capacity to navigate amongst the many differing value systems, worldviews, differing cultural norms..." (pp. 35, 36).

Hochachka (2005) describes "cooperatives" as having excellent potential to address sustainability and that participation in the decisions and functioning of the cooperative enables members to build the social capital necessary for a fruitful and sustained cooperative venture" (p. 100). An integral approach would also need to "include linking, bridging and vertical ties to create networks and take into account the economic, social, environmental costs and benefits and government policies" (Dale & Newman, 2008, p.18). Networks augment access to a greater density of social capital leading to greater capacity for linking ties, and ultimately, clustering creates greater critical mass for social change (ibid, p. 10).

Conclusion

Esbjorn-Hargens (2009) describes the SIFCo project as "a true testimony to the power of the integral model…in working with diverse perspectives to achieve a common goal that other approaches failed to manifest" (p. 21). Stephan Martineau, a local community member and environmentalist himself, utilized the integral approach in facilitating a process and garnered support from all aspects of the community so that the group could obtain a Community Forest tenure in the Slocan Valley.

"It was the articulated vision of a thriving community in a healthy ecosystem that brought everyone to see themselves in this vision and thus to support it" (Martineau, 2009, p. 38).

Implications for Colwood

- The key for Colwood may be a "qualified team of practitioners that include specialists with an understanding of interior issues (cultural and psychological) and others with exterior (behaviour and systems) proficiency" (Brown, 2005, p. 39). Our team of RRU learners, newly transformed through recent education, will be able to create an Integral Sustainable Development framework for Colwood utilizing relevant resources and learnings.
- The barriers and supporting forces described in Appendix 1 can be transferred to Colwood for ensuring effective participation and community support for development projects.

Notes

[i] SIFCo has a website with all information related to the Community Forest, found at http://sifco.ca/integral-forestry/

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Oslo Old Town - Community Participation in Environment Improvement Norway

Case Study by Vickie Clarke

Background

"The Old Town of Oslo is an inner city area of Oslo with 22,000 inhabitants. Education levels are very low by Norwegian standards and unemployment rates are twice the Olso average. The area is reckoned to be one of the most deprived areas in Norway. Some years ago initiatives were taken to turn the trend of a negative development into a positive social, cultural and environmental development of Oslo Old Town by civic involvement and partnerships between national, municipal and local authorities and community organisations. The main goals of the project are: to improve the environment, housing and health conditions, to create new jobs, to draw attention to the assets represented by historical monuments and sites and a living urban environment" (UNESCO).

"Process Planning with People's Participation: In the late 1980's the newly set up local administration and the local council responsible for primary health and social services saw the need for an action plan to improve the living condition of the people of their Urban District. The planning process was based on a series of workshops where representatives from the local administration and the different community-based organisations in Oslo Old Town participated. Later, working groups were established for the different issues raised. The first workshop identified the main problems threatening the inhabitant's health and well-being:-traffic (pollution, accidents, barriers, noise), -bad housing conditions, -lack of green spaces and children's play areas, -social problems (drug addiction, alcoholism, unemployment), -rubbish and litter in the outdoor environment (UNESCO).

The partnership with the neighbourhood associations was important in many ways. One of these neighbourhood associations was "The Environmental Town of Old Oslo" established as a comprehensive programme for integrated socio-economic development and environmental improvements. Some specific targets were to develop an environmental friendly transportation system and to recreate the medieval waterfront and historic adventure of Old Oslo including a Medieval Museum and a park displaying the medieval remnants. "Environmental streets" have been established with tree-lining, enlarged pavements and bicycle-lanes. Old parks and urban spaces have been upgraded and schools and school-yards have been refurnished (UNESCO).

The LL Quadrant

"We" relates to the cultural reality of a city. The collective, the goodness in life, knowledge bases of the humanities. "Everyday stories we tell each other in every informal connection of daily life. They also reflect the tales and myths we create to pass along our archetypal experiences" (Hamilton, 2008). This relates to Old Oslo retelling their stories, and history to each other and possibility to visitors. "Human desires about experiencing the release of stress through greenness in the city and make a moral choice to plant cherry trees on the street, to shade their coffee meeting place, instead of opting for efficiency and paving over the median."

(Hamilton, 2008). This relates to the fact that part of Old Oslo's plan is environmental streets.

According to Hochachka using Wilber model, the LL quadrant covers the interior-collective aspects of human consciousness. The context of LL is shared values, shared meaning, cultural norms, language, customs, stories and symbolism. Old Oslo already had these elements in place. To move forward we were able to develop a collective vision, relationship between development practitioners and the community, relationship between community members, and family relationships. The tools for transformation can be dialogue, community directed development, inclusive decision making, support groups, community visioning, and storytelling (Hochachka). Old Oslo has been able to use the LL to create a better place for its residents.

Colwood

Social capital refers to features of social organization such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit (Putman, 1995, Pg. 2). Colwood needs to create an open dialogue with its residents to create social trust. To accomplish this they need to bring the residents together in one place. This could be done through schools, senior centres, or art workshops. Anywhere that people have a chance to be together form relationships and talk in an informed way about the issue of sustainable. Once the dialogue starts it will be hard to stop.

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Oslo Old Town – Community Participation in Environment Improvement Norway
http://www.unesco.org/most/westeur4.htm

OurWinnipeg, the Community and Waste Management

Case Study by Don Grant

Our readings this week raise many interesting issues about creating the 'we' in a community which I would describe as the community finding its voice. In addition to the readings, I spent two days at a conference you all would have loved with the centre piece being the ABCD process or asset based community development. At its core, ABCD is focused on facilitation that allows community members to come together to discuss its vision for the future in a collaborative manner. At the core of all good engagement practices is organic bottom up or even inside out development where local residents take leadership and ownership of the process and the results.

This week I will drill down and consider efforts by the City of Winnipeg to create a conversation around waste management. I will look at what they did and I will our readings as a filter to assess how they did.

Summary: City Council directed the City of Winnipeg to develop a Garbage and Recycling Master Plan before proposing any more changes to existing services. The purpose is to develop a vision and plan for the future of garbage and recycling services based on the results of a six-month public participation process. (City of Winnipeg, 2011a, pg. 2) The process included the use of a range of typical consultation techniques including:

- Phone market research survey of 1,560 respondents
- A web-based survey linked from their web site that received 346 respondents from March 29 - April 11
- An omnibus phone survey – 467 respondents
- 154 posts on their website –posts
- Six phone calls through 311 Contact Centre
- 49 emails from our web form or direct to staff
- Eight letters handed in at the Open Houses
- Input from four round tables that focused on specific challenges and opportunities (City of Winnipeg, 2011a, p. 2)

Participants were asked about their vision for waste management using, for the most part, questions that listed options and allowed them to indicate if they were for or against the option. UL techniques including answers to one-on-one survey questions, and replies by email, letter or phone account for the vast majority of communications, with only two LL techniques being used posts to a web site forum (154 total posts with no accounting for the number of individuals) and four round table discussions which attracted only 25 people in total. My question is why the focus on individual feedback when they are trying to establish a community vision on waste?

Interestingly, the relationship of citizen to waste and the municipality would seem to be transactional (Hamilton, 2008, p. 182). However there is a learning component with the City teaching the citizen how to manage her/his waste and the City is seeking approval from the citizen to change the process. Does this make it a transformational relationship? Or maybe just a complex transactional relationship?

If we consider Marilyn's description of diversity generators and conformity enforcers (Hamilton, 2008, p. 187 and 190), it is easy to see both in this example. Conformity enforcers want things to stay the same and want to impose their will on others indicating that they are opposed to changes in service levels. Diversity generators are looking for better ways of increasing waste diversion from the current level of 17% to 50%. I would think that it would be best to have these two types of people in the same room in a facilitated environment (a LL solution) rather than asking them to provide their comments through survey instruments (a UL solution) without considering the views of others.

The other question worth considering is whether or not the OurWinnipeg team has a choice when doing public engagement. "The number of socially isolated Americans have more than doubled over the 2 decades from 1984-2004 from 10% to a quarter of all Americans" (Putnam, n.d., p. 1). If Canadians are becoming more socially isolated, perhaps we need to rely on UL engagement techniques to seek their opinions. As a practitioner I know that it is very difficult to get citizens to come to events designed to secure their input on planning documents. When I have asked, most people have said that they are just too busy to participate.

Application to Colwood

When completing this brief analysis of the work done in support of the *Garbage and Recycling Master Plan*, I was hit hard by the fact that as practitioners we tend to focus on UL engagement. We rely far less on LL engagement that we probably should. Certainly if we take to heart the lessons from our reading, we must seek out groups and help them to engage in their own conversations about community. "The city is the container where cultural life unavoidably flourishes" (Hamilton, 2008, p. 197) and we interact with each other all the time. Unfortunately it is usually at a transactional level, and from time to time we need to engage in a deeper conversation. As citizens we do need to think about how to shape and form our container, and in this case how to align an everyday occurrence – such as managing our waste – with our overall objectives for sustainability.

Colwood needs to set out sustainability objectives that are created by the citizens and designed for future use. For example if they develop objectives for waste it gives a starting point for a conversation about changing levels of service. Also, as the humble servants of Colwood, I feel that we need to advise them to blend their engagement strategies, completing UL engagement first and then convening a meeting of people committed to reviewing information and participating in a group engagement designed to seek consensus. This LL engagement would be asked then to consider the UL responses and blend them into their overall findings and recommendations.

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Canmore, Alberta - A Natural Step Case Study

Case Study by James Gudjonson

The town of Canmore, nestled in the Rocky Mountains and just a few kilometres away from the entrance to Banff National Park, has become a premier destination for mountaineers, rock climbers, hikers, white water enthusiasts and skiers (www.Canmore.ca, 2011). The town originated as a coal mining center but as the demand for coal diminished in the 60s, 70s and 80s, and the mining jobs disappeared, the town's future looked grim (The Natural Step, n.d.). What saved Canmore from becoming a ghost town were the artists and outdoor enthusiasts that moved to the area because of the natural surroundings (The Natural Step, n.d.). Canmore has transformed from a mining town of 2,000 to become a world renowned outdoor recreation center with 12,000 permanent residents, an additional 5,000 'weekender' and part time residents and 1 million tourist visitors annually (www.Canmore.ca, 2011).

The 10% growth rate that followed Canmore hosting the 1988 Olympics tripled the size of the town in 10 years and sparked concerns over sustainable development (The natural Step, n.d.). In 2004, Canmore became the second Canadian community (after Whistler, BC) to implement the Natural Step's community-wide engagement program. The "Natural Step to a Sustainable Canmore" provided training for eight early adopters with the intent of developing a shared understanding of sustainability and creating local success stories to inspire the rest of the community. The early adopters' model or the *Theory of Innovation Diffusion* claims;

> "The adoption of a given innovation will follow a predictable pattern, starting with a small group of innovators, and then spreading slowly through agents of change to "early adopters". The practice of the early adopters are eventually noticed and adopted by an early majority, which also begins to innovate and build a critical mass in the community". (The Natural Step, n.d.)

Culture of Mountain Towns - The Foundations of change

Notable historian and author R.W. Sandford, who lives in Canmore, suggests "we have made ourselves whole as a culture by restoring the places that have in the past meant the most to our identity" (2010, p. XXIII). Sandford (2010) goes on to claim that as the mountain regions of the west were developed people recognized a quality of place that meant more to them than immediate wealth and as a result it is not what was developed or built that defined their identity and culture, but what was saved. Bopp & Bopp identify that an important indicator of well-being in the cultural/spiritual (Lower Left Integral Quadrant) area is the presence of a vigorous dialogue on values, and a climate of deep mutual respect for diversity. The mayor of Canmore, Ron Casey, alludes to a 'vigorous dialogue' with an initial focus on wildlife and the natural environment, but he adds "once we got started down the road of questioning how and why we develop, looking at the broader picture of sustainability just seemed natural to us" (as cited in the Natural step, n.d.,p.3).

As organizations that foster the values associated with preserving the natural environment moved their head offices to Canmore and the town attracted more and more citizens that reflected these values, the culture (the WE of the Integral map) of the community was transformed (Reichwein, 2008; Sandford, 2010). Brown (2005) asserts that in order for sustainable

development to arise, individual behaviour and society's systems in the exterior world need to change; and the greatest leverage for this change may lie in the interior world-in motivations and cultures. Not all Canmore residents are outdoor recreationalists and Sanford (2010) notes that painters, photographers, poets and musicians have all drawn from the landscape and contributed to the local mountain culture. Sanford alludes to the notion of the sublime that is "generally taken to mean a pleasing dread that was felt when the forces of nature overwhelmed the familiar, with an aesthetic transcendence that permanently altered one's worldview" as the seeds of change (2010, p.69). Hamilton (2008) contests that the culture (WE) appreciates the goodness in life and these perspectives become crucibles that hold our subjective reality and inform of us what is accepted as good or bad, beautiful or ugly in the community. Canmore residents were drawn by the natural surroundings and what the WE (Collective) sees as 'beautiful' and 'good' is development that preserve the natural surroundings.

Implications for Colwood

The Canmore/TNS case study identifies 3 key factors that can be applied to Colwood

- The need to build a critical mass in the community that is committed to sustainable development
- Identify organizations/individuals with cultural values that are conducive to sustainable development and draw those organizations/individuals in as early adopters. In Canmore it was the mountains that inspired their culture, in Colwood perhaps it is the ocean and the rain forests that inspire the local artists and outdoor enthusiasts
- The early adopters in Canmore that included; the municipality itself, several businesses, the seniors' center, the waste management plant and a large mountain village development were given training and funding with the intention of sharing their success with other organizations and businesses in the community. This is an excellent example of leveraging off of the cultural foundations of sustainability existing within the community to engage other organizations/individuals and build towards the aforementioned critical mass.

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Victoria - Urban Biodiversity

Case Study by John Kirbyson

Introduction

Dale and Newman (2010) highlight the struggles that many communities have at achieving sustainable community development, which arises from among other things, the complexity of the issues, fragmented nature of government organizations and limited resources. They argue that the mobilization of " social capital is necessary for realizing sustainable community development as it enhances linking ties that increase access to resources outside the community (p. 5)", although by itself may not be sufficient and will require support from robust governance systems.

Hamilton (2008) concurs that a city's culture and quality of life depends on the quality of relationships, or it's "capacity for connectness" (p.202). How? Hamilton argues that self-organizing webs of relationships and networks can recombine in new and novel ways with invention and insight, to address major challenges of the era (p.183) as well as to serve a purpose and each other (p.221).

The case study of a local community volunteer efforts to address the challenge of ecological restoration within their own community, demonstrates the power and benefits of local social capital to achieve objectives, which government authorities alone could not. The findings have implications for the City of Colwood.

Case Study Review

Dechaine and Strashok (n.d.) compare two projects implemented to restore native forest ecosystems by removal of invasive weed species within the Capital Regional District (CRD) of Victoria, including a Garry Oak ecosystem, one of Canada's most endangered ecosystems. One project, the Mill Hill site, was undertaken by the CRD staff with government funding. The second project in, Mount Douglas Park, was coordinated by the Friends of Mount Douglas Park Society. This society is a strong volunteer network of private businesses, individuals, government agencies, schools and NGO's (FMDPS, 2011). In the government run approach, a more specific plan was developed, work was monitored and costs tracked. Work ended due to lack of funding. In the volunteer project, there was less documentation, more risk and some organizational challenges, but a greater amount of restoration work was accomplished and is still ongoing.

Both projects helped achieve ecological restoration, however, the Mount Douglas project run by volunteers achieved greater restoration. As well, there were significant secondary benefits; the project created an opportunity to educate the public about native plant ecosystems, and raise awareness of the sensitivity of the habitats and impacts from recreational use. By involving the community in the project, it fostered greater public awareness and greater respect for ecological systems. Dechaine and Strashok (n.d.) claim that if the environmental goals are considered without managing the social framework, it would be unlikely that the objectives will be sustained in the long term.

The other benefit of the volunteer project is that it helped create new community connections and expand social capital in the society and further empowered the volunteers to greater protection of the park.

Implications for Colwood

This case study offers several implications for the City of Colwood's efforts to achieve sustainability:

1. Self –organizing networks are a means to increase capacity, leverage existing resources, share information and increase bridging social capital. (Dale and Newman, 2010) The City of Colwood would benefit in facilitating the formation of more community groups and empower such groups in partnerships to take on more responsibility to manage resources and address the challenges within their community. The city must continue to facilitate community connections; create enabling conditions and build both vertical and bridging ties. Colwood's OCP recommends enhancing relationships (Colwood, 2008) yet working examples and success stories are not celebrated. Colwood Community Place (anon. n.d.) is an excellent example of building community connections and provides a great opportunity to promote collaborative networks.
2. Following the Integral approach of Hochachka (2005) Colwood should foster personal transformation and development of worldcentric views by appealing to the inner values of residents. Mount Douglas volunteers reported that by participating in the restoration work, they experienced strong ethical responsibility to the environment and a shared sense of community. As Newman and Dale (2005) suggests this empowering can change ambivalence and apathy to the idiom of "think globally, act locally".

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Salt Spring Island – Texada

Case Study by Iren Koltermann

The Salt Spring Island case study illustrates how island residents took continuous action over two years to stop the Texada Corporation from clear-cut logging the land it had purchased. The networks and social capital built by the SSI residents, in pursuit of their goal, are examined, using the Lower Left quadrant of the Integral Framework. The Lower Left quadrant considers the relationships between members of the community, and includes the values, meanings, worldviews and ethics that are shared by members of the community and that form the basis for culture (Hochachka 2005, p. 39).

Shortly after hearing about the land purchase, and observing unsustainable logging practices, community organizers created, and began action towards realizing their vision. "Thinking big and taking small steps to get results" created an energy that led to "building momentum. And this momentum was clearly a feature of the Save Salt Spring Cause (McEwen and Ling, n.d. p. 5)." To plan and implement these steps, the residents self-organized into groups based on shared interests and skills. These affinity groups (LL) operated independently but were coordinated by an overall group that met weekly to strategize. Through the affinity groups many residents were able to participate in the Cause, in a creative and individual way (McEwen and Ling, n.d). The self-organized network of groups led to the necessary social capital, unified vision and collective political will (LL) needed to effectively mold the diverse talents of residents into coherent collective action (LL). The groups planned and coordinated blockades, protests, media campaigns, and lobbying strategies with both internal and external organizations, as well as all levels of government. The networks built by SSI residents were effective because they were "open, diverse, and involved social capital ties at the bridging, and vertical levels (Dale and Newman 2008, p. 9)." Bridging ties connected the groups to outside organizations such as mortgage lenders, CRD, BC Parks, BC Forestry, and the CBC. Vertical ties connected them to decision makers and authorities. These relationships secured many supporters for the Cause on and off the island. For example, politicians from all levels of government endorsed a proposal to make part of the land a national park (McEwan and Ling, n.d.).

Using a systems approach, a few individuals moved between groups, linking them together and helping to define "the greater form or cohesive body of action to stop the logging and save the land (McEwan etc., p. 6)." There were "endless meetings"(p. 8) where many stakeholders on and off the island were engaged in ongoing dialogues, which led to the necessary collective action. As Hochachaka (2005) explains, "empowerment occurs when a process of co-generative dialogue is used to bring participants new insights and understandings about their social world … participants learn how to learn … and how to create new possibilities for action (p. 31)." It is through these dialogues, that the residents of SSI were able to "create patterns of relationships that never before existed, relationships spawned by innovation, invention and insight (Hamilton 2008 p.183)." Some actions by the residents are a testimony to the creative use of their talents. Projects such as "the naked woman calendar", "the postcard campaign" to mortgage lenders, "the raging grannies", a local musician's performance and fundraiser called "woodstump", and "hunks for habitat (McEwan etc. p. 9-10)."

The arts and the media were used effectively to inform, influence, empower and ultimately unify the stakeholders around the common goal to raise funds to purchase the land from the Texada Corporation. Hamilton (2008) explains that much of "cultural connecting involves using information to redirect energy-matter (p. 205)," achieving agreement amongst individuals and groups who are in conflict, and enabling them to self-organize into new supportive relationships. The SSI case study is full of examples of such transformative and transmutational relationships (p. 182), relationships that "catalyze shifts in meeting collective needs of the whole system (p. 183)." For example, after the first blockade the group passed around a hat to cover the wages of inconvenienced truck driver, who in turn donated the money collected back to the cause (McEwan and Ling, n.d.). It is through such efforts and actions that SSI residents were able to stop the unsustainable logging practices of the Texada Coroporation.

Implications for Colwood

The City of Colwood needs to continue to inform, engage, encourage and empower its residents to forge 'bonding' and 'bridging' ties (Dale & Newman p. 9) in order to develop the social capital needed to achieve its sustainability goals. There is a need for stronger engagement and collaboration amongst the citizens of Colwood. The citizens need to build a strong collective vision and political will around the goals stated in the Economics of Happiness report and OCP. They can then form groups or networks based on shared interests and skills, and utilize their diverse talents to work in a coherent manner towards the realization of the vision, similarly to the SSI residents. To do this effectively, the City of Colwood needs to better understand the aspirations and values of its citizens. Once relationships are forged and actions taken, the groups' experiences and stories need to be shared so that the citizens can feel a sense of unity of vision and mission for building a sustainable community.

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Quality Urban Energy Systems of Tomorrow (QUEST)

Case Study by Deb Rasnick

Ann Dale (2010) suggests that sustainable community development is beyond the resolution of any one sector, discipline or government; that its solutions lie in integrated approaches, creative collaborations, and new forms of governance models. Dale examines a loose collaborative of private sector, government, and non-government organization (NGO) leaders that came together in belief that better conversations around climate change needed to happen. The collaborative – QUEST – has made significant progress in the co-creation of knowledge, advancing public policy, connecting decision-makers and accelerating nationwide momentum through a variety of activities. Dale attributes these successes primarily to the consortium's diverse, self-organized social capital created within nested networks of participants actively engaging each other, thus "being in community" (Hamilton, 2008, p. 201).

Case Summary

Quality Urban Energy Systems of Tomorrow (QUEST) is a collaborative network of diverse citizens who came together around shared interests. The collaborative has both national and provincial presence; and, while participants are functionally diverse, they share common beliefs and values around the benefits of sustainable development and integrated, whole systems thinking. The groups have come together voluntarily to engage in conversation, and explore integrated community-based approaches to reduce human energy consumption and greenhouse gas emissions, while improving air quality and socio-economic quality of life for communities. In turn, the collaborative believes these activities also benefit the environment; as such closed-loop systems reduce waste and avoid further extraction of raw materials and use of fossil fuels.

The critical success factors of QUEST include "leadership, partnerships, space, timing and form" (Dale, 2010, p. 1). Having a timely idea that attracted diverse stakeholders was a powerful convening factor. The self-organizing nature of the group - absent of formal structure - and the safe space the collaborative created, facilitated trust, respect and a significant amount of collegial learning and creation of dynamic partnerships. While the national presence conducts broad policy dialogue and engages high-level government stakeholders, the provincial consortiums co-create strategies and local action plans to meet the broader shared vision. Through QUEST, participants have furthered communal knowledge, influenced program policy and decision-making in their respective organizations; and formed new partnerships to facilitate climate action and energy conservation. Likely the greatest success of QUEST is its expanding and inclusive nature - connecting people who want to make a difference in the imperatives of sustainable development; thus creating dynamic networks who reinforce each other in "weird and wonderful ways" (Dale, 2010, p. 3).

Linkages with Course Concepts and Colwood

I am pleased to be a part of the British Columbia QUEST collaborative, which I believe can best be described as being "in community" (Hamilton, 2008, p. 201). Hamilton (2008) describes community as "a process of being in a relationship that helps us to adapt, change and become who we are, through co-emergent meaning-making, discovery and inquiry" (p. 200). Hamilton

cites Jaworski's (1996) proposition that being in community occurs when we serve each other's needs, and Palmer's (n.d.) suggestion that community is about a "capacity for connectedness". At this level of connection, community members engage in open conversation and develop new levels of trust and rules for interaction. At this stage of being, "a different ecology is born, one that links the collective thoughts and awareness of each person and sustains a meaning-making process that is less constrained by mental models and constructed paradigms" (Hamilton, 2008, p. 201).

Putnam (1995) posits that life is easier in a community blessed with such *social capital*, which he defines as "features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (p. 2-3). Putnam suggests that networks of civic engagement foster reciprocity and encourage the emergence of trust, facilitate coordination and communication, support reputations, and allow for resolution of societal dilemmas. In addition, they serve as a cultural template for future collaboration, and develop participants' identities toward supporting the needs of others. Dale and Newman (2010), suggest that the mobilization of social capital for building diverse network formation is a necessary condition for sustainable community development. They posit that networks need to be open, diverse, and involve social capital ties at the bridging and vertical levels, which link to outside resources and to decision makers and authority figures, which are crucial for bridging structural holes within a community and institutional "solitudes, silos, and stovepipes" (p. 3).

QUEST has been successful at enabling social capital and community connectedness, through self-organized networks of empowered citizens who co-create solutions and develop partnerships. There are many lessons from QUEST that may be helpful to Colwood, the first of which is becoming a part of the BC consortium. Royal Roads University, the provincial government and several private sector companies are involved in QUEST. By becoming part of the collaborative, Colwood may form new partnerships and develop new ideas for addressing climate action and developing a low-carbon economy for its community. In addition, Colwood could learn from QUEST's highly successful self-organized methods to engage its participants, and support their own evolution toward exploring new ways of being in community and creating Case Summary:

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Quest Food Exchange

Case study by Tracy Steere

This brief summary will describe the Quest Outreach Society's (QOS) food exchange system and how the 'WE', the lower left (LL) quadrant of the integral map has contributed to its success. A short discussion on the applications to Colwood is also included.

QOS has progressed from an organization that provides hot meals for people in the Vancouver downtown eastside to an organization that feeds more than 60,000 people each month in Vancouver and beyond using a food exchange program (www.crcresearch.org). To accomplish this they pick up food that would otherwise be discarded as waste from importers, bakeries and other suppliers and prepare it for re-distribution. As Quest describes it they "rescue food" (www.questoutreach.org) destined for landfills. Through the collective efforts of 11 employees, 2,000 volunteers, funders, non-profit organizations and private sector companies each month Quest provides (www.crcresearch.org):

- 8,900 hot meals
- Feeds 29,000 people from other food products
- Provides 22,000 emergency food hampers
- Sends out prepared soups to international groups

They also contribute ecologically. 'Quest has a zero waste policy and food packaging is reused or recycled, they estimate that the society diverts 1% of the total food waste in the lower mainland' (www.crcresearch.org)

Brown (2005) says that a "shared disposition…influences the actions a group takes collectively" (LL) (part 1, p.20) and while CRC Research (n.d) indicated the lack of startup funding as something that didn't work in this case, it would seem that a shared disposition did. Through the leadership of one volunteer, the support of the QOS volunteer board and many in-kind hours, success was achieved. Hamilton (2008) refers to the (LL) as the "Goodness in the humanities" (p.61). Today this goodness has expanded to include 2,000 volunteers. Who contribute 22,000 in-kind hours annually (www.crcresearch.org).

Whether the QOS staff and board understand that "An integral approach recognizes that working with the interiority of groups and individuals is necessary for participants to feel committed to and empowered by a participatory process (Hochachka p.9, 10) or not, they do understand that "they would not be able to function without their volunteers" (www.questoutreach.org). Quest strives to respect all individuals regardless of their background. They provide a series of volunteer empowerment programs including providing a self-selected food hamper to each volunteer at the end of their shift.

Dale and Newman (2008) indicate that it might be possible for marginalized communities to develop the collective agency to help themselves (p.11).Many of these volunteers are from the low income downtown eastside community, and while they may not have developed this organization, participating in it is not only an essential component of its success, volunteering with QOS has self-empowerment potential. Volunteers commit their time, warehouse the food,

and assist with preparing meals and preserves. All of which can foster self-esteem and increase capacity for employment.

"In ideal circumstances, a team can achieve supernormal performance" (Hamilton, 2008, p.189). Considering that QOS has progressed from providing approximately 13,000 meals a month in 1995 to over 60,000, and prevented 1% of lower mainland food waste from entering landfills, their performance is impressive.

Applications to the City of Colwood

Colwood can learn from the success of the QOS and how the "We" (LL) has contributed to it, and the zero waste policy. Colwood Community Place is a network intended to encourage residents to go green, go local and to grow local veggies. (www.colwoodcommunityplace.ca). For some residents this will require a shift in values or a greater understanding of how to make lifestyle changes. The Economics of Happiness report indicates that Colwood residents "are at a readiness level for a new kind of planning process, one that is inclusive and one that takes into account Genuine Wealth principles of measurement" (www.colwoodcommunityplace.ca). "67% of the respondents want to spend more time with family and friends 37% want to contribute more to the community" (ibid). Volunteer activities can provide opportunities for residents to spend more time with loved ones, and contribute to their community. It may also nurture a process that develops shared values in regard to connectedness and the environment. If leadership were to provide these opportunities in areas such as community gardens, progress towards go green, going local and growing local veggies can be achieved.

Potential for volunteerism extends beyond working towards a green community. It can also have a ripple effect and increase social capital. "Members of associations are much more likely than nonmembers to participate in politics, to spend time with neighbors, to express social trust, and so on" (Putnam, 2005, p.7). It is important that the leaders of Colwood understand that "The motivation for joining a group or network is not trust, but a need to form a collective to achieve a social end" (Dale and Newman, p.10). Therefore Colwood must look at what ways to engage community members and determine what social goals their residents are interested in achieving.

"Quest is a highly successful model of identifying an opportunity in a waste product and extracting the maximum possible social and environmental benefits from it." (www.crcresearch.org)

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Industrial Ecosystem in Kalundborg, Denmark

Case Study by Leanne Bilodeau

This case study centers on an industrial ecosystem development in Kalundborg, Denmark. It will describe the approach and actions (UR) that made its development possible, giving rise to materials and energy exchanges that have economic and environmental benefits. Application to the City of Colwood will be discussed.

Background

The town of Kalundborg, Denmark has developed adjacencies between major industries and the community that exchange energy and materials to reduce wastes and minimize environmental and climate impacts (Ehrenfeld & Gertler, 1997). The exchanges operate in a closed-loop, allowing for the waste of one system to become the fuel for another, much like the defining characteristics of natural ecosystems that generate and cycle energy and waste in a continual flow (McDonough, 1993).

Kalundborg is founded on industrial ecology which Dale (2001) describes as the application of ecosystem principles to industrial processes. Industrial ecology integrates human economic activities and materials management in new ways that help respond to the planet's finite carrying capacity (Lowe & Evans, 1995).

Examples of Kalundborg's outcomes include (Lowe & Evans, 1995):

- Reduced CO2e emissions by 130,000 tonnes per year
- Reduced SO2 emissions by 25,000 tonnes per year
- Reduced oil consumption by 19,000 tonnes per year
- Reduced coal consumption by 30,000 tonnes per year
- Reduced water demand by 20-25%
- Re-use of waste products: 135,000 tones fly ash/year; 2,800 tonnes sulphur/year; 800 tonnes nitrogen; 400 tons phosphorus (bio-sludge fertilizer).

What behaviors (UR) and conditions led to the development of an industrial ecosystem in Kalundborg, Denmark?

Behaviours within a city do not occur in the absence of purpose, worldviews and systems (Hamilton, 2008). The VP of a major industry in Kalundborg described the conditions that enabled its development (Lowe & Evans, 1995).

- diversity and fit amongst industries;
- profitability of arrangements;
- voluntary participation and collaboration with local authorities;
- close physical proximity between industries; and
- industry managers that knew one another.

A supportive culture seems to have contributed to the self-organizing capacity of individual industry leaders to work together. For example, Ehrenfeld & Gertler (1997) describe an atmosphere of trust that allowed for conversations between prospective partners. This was described in contrast to the culture of American firms, where privacy concerns can limit the ability to communicate openly and build alliances (ibid).

From an economic perspective, industry leaders were motivated to find solutions for the by-products of their production in order to reduce environmental compliance costs (Ehrenfeld & Gertler, 1997). The VP stated, "at the time we were just doing what was profitable and what made sense...until now we have had no formal organization, no common board or budget. We do what pairs of us think is a good idea." (Lowe & Evans, 1995, p. 49).

While this case does not present a new form of economy, it provides an example of an industrial systems integration that has economic and environmental impacts. The system reduces wastes and harmful emissions; it saves utility and emissions costs; and it promotes businesses to think and act differently. It also leads to a more sustainable type of economic development, supported by enabling conditions, which has the potential to leverage greater awareness and deeper change. For example, Dale (2001) discusses that development based on ecological principals enables more sustainable economic systems, as organizations begin to evolve from a mindset of realizing greater efficiencies in existing practises to total re-design for greater output with less input. This seems to fit with industry imperatives at Kalundborg today: with an aim to grow and evolve established adjacencies, managers are motivated to explore greener industrial processes that reduce input and output (Lowe & Evans, 1995). More companies are attracted to become involved (ibid).

Application to Colwood

The City of Colwood anticipates its population will double requiring infrastructure, service enhancements and support for a growing community. When presenting to our cohort at our first residency, Mayor David Saunders expressed the importance of working with local business to help balance views about the economic feasibility of sustainable development. The following recommendations apply:

- Develop an industry networking group; possibly in conjunction with Royal Roads Faculty Researchers, to create connections amongst industries and between industries and research. Develop feasibility studies that consider energy and waste sharing between industries (i.e. sequester landfill methane for energy; heat recovery from local sewer system to heat buildings, biomass energy generation, etc.); as well as feasibility of clean-tech energy sources (solar PV, wind, ocean).
- Present the concept of industrial ecology and business case to local businesses. Demonstrate the economic incentives associated with sustainable business practices (i.e. reduced utility costs; incentives and grants from utility companies, Provincial and Federal governments). Introduce business owners and developers to others who've successfully implemented sustainable systems, retrofits and infrastructure.
- Take a systems approach to civic planning. Identify potential new adjacencies with planned development (i.e. brown-fields).

- Leverage existing best-practices to reduce energy and GHG emissions to attain political commitment and legislative change where required (i.e. create tax incentives for renewable energy projects; create tax penalties for high polluters, etc.).

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Pesticide Use In Quebec

Case study by Ione Brown

> *We now use about 2.5 million tons of synthetic pesticides worldwide each year, and pesticide production is a multi-billion dollar industry. Yet pests and spoilage still destroy about 25 to 50 percent of crops before and after harvest. That proportion, if anything, is higher than average crop losses before synthetic pesticides were widely introduced after World War II (Ehrlich and Ehrlich, 1997: 44 in Dale, 2001, p. 70)*

Societies have repeatedly been unable to grasp the implications of their short-term behaviours for their long-term survivability (Diamond *in* Hamilton, 2008, p. 146). The use of pesticides in residential areas, by communities, on farms and on golf courses can lead to the destruction of ecosystem function, reduction in water quality and damage to both community and individual health and well-being. A shift in consciousness within individuals can lead to change in their behaviours through learning; thereby increasing the intelligence capital of the city (Hamilton, 2008, p. 137).

This paper reviews a case study through the lens of the upper right quadrant (objective) using Ken Wilber's four quadrant map, as adapted by Hamilton (2008, p. 62). I will examine how the communities of Hudson, St. Lazare, and Notre Dame de L'lle Perrot engaged residents to reduce their use of pesticides through education and a system of financial disincentives (Kassirer, 2011).

CASE STUDY REVIEW THROUGH THE OBJECTIVE PERSPECTIVE

If the issue is viewed through the Upper Right quadrant, then we can ask "what must the individuals/the community do to reduce pesticide use?" and "what will the impact of the reduction have on the natural environment?" (adapted from Hochachka *in* Brown, 2007, p. 32). These questions can help us to understand how a UR perspective, along with knowledge in the other three quadrants, can give us an integral approach to dealing with pesticide use and the effects on the system both within and outside of the community.

Individuals often make decisions within the bounds of information that they have available to them. Meadows (2008) describes how changes in the behaviour of individuals can be brought about quickly with even a slight enlargement of their bounded rationality by providing more complete and timelier information (p. 108). Individuals without an understanding of why the use of pesticides is harmful and what alternatives there are would not likely change behaviours in response to a pesticide reduction program. Hamilton (2008) describes how support for change is needed through educating messages, cultural peer pressure and judicial enforcement of practice as behaviour in a community does not change in isolation of intention, culture, and social systems.

The three Quebec communities used education, creation of new bylaws and community engagement to reach individual community members to bring about change to reduce pesticide use in their communities, through the following methods (Kassirer, 2011):

1. The creation of new by-laws with escalating fines for non-compliance.
2. The education of residents through person-to-person discussions, horticultural counseling by telephone and neighbourhood visits to help residents find viable alternatives to pesticides.
3. The creation of a permitting system for conditional pesticide use where towns would respond to applications immediately and provide a home visit to suggest alternative methods.
4. There were workshops, lectures, and media information sent through newspapers, websites and brochures.
5. Community pride in being pesticide-free was created through advertising and news items.
6. The financing for staff, educational material and other resources to implement this program came through partnering with the other communities.

After implementation, the experts suggested that there was an immediate 70-90% reduction in use the first year and compliance levels were above 80-90%. Partnerships with local businesses to provide services and products for alternative garden care helped to provide employment and business opportunities within the communities themselves.

"The industrial idiom of design, failing to honor the principles of nature, can only violate them, producing waste and harm, regardless of purported intention" (McDonough, 1993, p.9). In our communities, we must see that the use of pesticides for the intention of keeping our "gardens" healthy and functioning is the wrong goal; what we are doing through that intention is to destroy the natural function of the ecosystem and the health of ourselves, our children and our communities.

IMPLICATIONS FOR COLWOOD

- The District of Saanich has implemented a pesticide bylaw and integrated pest management policy for their community (www.saanich.ca/living/natural/pesticide.html). The City of Colwood should partner with the Capital Regional District (http://www.crd.bc.ca/gardening/index.htm has a "Model Bylaw") and DND Royal Roads to align their goals and vision for healthy communities and healthy ecosystems in regards to the reduction of pesticide use by following the best practices found in Saanich.
- The reduction in pesticide use has benefits to community health, personal health, ecosystems and biodiversity, and water quality, which are some of the City of Colwood's goals for "Community Sustainability". The use of natural alternatives to pesticides also reduces wastes and has the potential to increase the physical activity of local residents by encouraging residents to go out into their gardens and actively manage pests and unwanted species.
- The City of Colwood could partner with the CRD golf courses to switch to alternative methods for lawn care through which gains both economically and socially could be made through being leaders in their field.

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Columbia Basin - Community-Based Water Monitoring

Case study by Vickie Clarke

This case looks at the research done around the community engagement of the governance of water in the Columbia Basin in British Columbia. "It is assumed water sustainability is achieved when there is a renewable and economical water supply and human activities are environmentally benign to the water resource. To accomplish this, a series of value-based choices about water happens" (Strashok). This case involved community participation through active groups working with "monitoring water quality, involved with water education and outreach, and restoration efforts" (Strashok). These groups give a connection to the three levels of government that deal with water issues. "In the Columbia Basin there is some evidence that this is being achieved and that effective bridging social capital between community water monitoring groups and decision makers is being generated" (Strashok).

The case study looks at the fact that it is activities that bring people together to talk and build trust. More work is needed to build partnerships to share the work and build trust in the basin. "It is clear that good water governance in the Columbia Basin will be shaped by the cultural norms and values of the people who live and work there. The United Nations Development Program (UNDP, 1997) lists five characteristics of good governance that can be applied to water governance" (Strashok). The five good governance principles list were; legitimacy and voice, direction, performance, accountability, fairness. These principles are seen as the opposite of a top down approach.

Integral Perspectives

This case looks at sustainability from the perspective of the It (UR), "this perspective demonstrates the actions of life that support material survival in the city. The Objective It is the arbiter of material energy of the city that rests on the basics of material life: water, food, waste flow, shelter, clothing" (Hamilton, 2008, Pg. 64). The great thing about this case is that it is the community interacting with the environment directly to understand the state of the environment and their place in its protection. When people touch, feel and take action, they develop a connection to the issue and then feel empowered to take responsibility for the outcome.

Applied to Colwood

At this time it seems that the citizens of Colwood may not be as engaged in the process of Solar Colwood as they need to be to complete the project. This case shows that people like to engage through active participation. Instead of sitting in a room talking about sustainability and what could be done, maybe Colwood should be engage special interest groups to participant in environmental projects, i.e. clean up campaigns, wildlife monitoring, air and water quality studies. Types of special interest groups to be approached could be; outdoor education classes in high schools, environmental groups, running clubs, recycling groups. Once the movement is started it will grow in momentum through people talking and media engagement. Colwood City council should look at the UNDP's recommendations for good governance. The five principles engage people by allowing bottom up approach instead of top down governance, which leads people to reject good ideas because they feel they are being told what to do without their control or input.

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Lee-Anne Walker Chris Strashok, CRC research team member

http://www.crcresearch.org/case-studies/crc-case-studies/community-based-water-monitoring-bridging-citizens-and-decision-makers

Vancouver Green Capital Program

Case study by Don Grant

In my opinion, economic enterprises fall into three categories: Group 1 - those prepared to embrace industrial ecology or biomimicry; Group 2 – those prepared to modify their existing practices; and Group 3 – the laggards hanging on to the status quo.

My view is that of the four pillars of sustainability, it is the economic pillar that is like space – the final frontier. In the social pillar society has a strong tradition of doing good for people in need; the environmental pillar has support from society and momentum; and the cultural pillar is emerging in Canada with the development of municipal cultural plans and the acceptance of the concept of the creative class popularized by Richard Florida (Florida, 2011). However, change to the economic paradigm based on growth is strongly resisted by many despite the fact that "the growth of the economy is, therefore, constrained by the physical carrying capacity of the larger biosphere … [and] the limits to increased prosperity are not the lack of human-made capital but the lack of natural capital" (Dale, A, 2001, p. 76-77).

Fortunately work on the Genuine Progress Indicator (GPI) and on alternative means of measuring impact on natural capital by Wackernagel (as cited in Dale, p. 78) and on happiness by Mark Anielski (as cited in West, 2009) provide tools for changing society's perspective on economic growth. These types of macro re-assessments of economic activity will hopefully convince entrepreneurs and existing companies to completely rethink economic activity and embrace sustainable growth models.

However, the situation that most communities face is trying to move businesses and other economic enterprises out of Group 3 and into Group 2. To prepare for our Colwood work, I have looked at a case study where the focus is on getting businesses to cut greenhouse gas emissions. The case study that I examined is in Vancouver.

"Vancouver businesses are re-inventing themselves as leaders in clean energy, sustainable building practices, and social entrepreneurship. Not content with adopting the easiest or cheapest of approaches developed elsewhere, Vancouver companies are putting the most advanced and audacious approaches into practice today, creating the foundation for a truly sustainable city." (City of Vancouver, 2009b)

The City of Vancouver has outlined clear, easy to follow steps that can be taken by any business, and in fact would be advisable for hospitals, schools, social welfare agencies – any operation that requires space and uses energy. Here is the approach.

"The steps

1. complete a GHG inventory and identify reduction strategies
2. set GHG target and submit the details

Become a corporate climate leader

3. implement reduction strategies
4. complete a follow-up inventory and submit details (within 18 months)

Advance your corporate climate leader status" (City of Vancouver, 2009c)

They support this initiative by offering free advice from a Business Energy Advisor who works for the City. This is an excellent incentive.

"In partnership with LiveSmart BC, the City if offering 225 businesses a free assessment of your business. If your annual electricity bill is less than $50,000, our advisor may be able to help your business save money and energy by:

1. conducting a technical energy audit
2. connecting eligible businesses with product incentive programs
3. coordinating with consultants to identify and complete upgrades

To be assessed, e-mail our BEA to find out if you are eligible.

Learn to measure and reduce your energy, transport and waste" (City of Vancouver, 2009c)

The City also has an excellent training program

"In partnership with Metro Vancouver, the City is helping 100 eligible businesses by providing $1,000 to your Climate Smart training. With this offer your business will pay between $250 and $1,000 (depending on the business size) to:

1. attend three, half-day training sessions
2. calculate your emissions using a top-rated, online GHG management software
3. receive one-on-one help and technical review from carbon experts
4. participate in networking events to help grow your business

To register for the next training session, call: 604.254.6283, extension 250." (City of Vancouver, 2009c)

What I noticed is that very few businesses are listed on their web site as participating in this initiative. What I would do as a next step would be to contact City of Vancouver representatives to confirm the total number of participants and the barriers to participation. By offering free advice and training they are providing incentives and making it easy. With participation by the local utility they are able to back up suggestions with support.

In Bancroft, the provincial utility, Ontario Power Generation, sent summer students door-to-door to every business in town and they offered to do an energy audit on the spot. They were able to do upgrades to lighting immediately and offered incentives to do more extensive upgrades. This greatly increased the uptake of the program and the number of participants.

I would recommend the adoption of the Vancouver program in Colwood if possible. It could then be followed up by the door-to-door program if the uptake was not as strong as desired.

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BC Hydro Power Smart Program

Case study by James Gudjonson

Introduction-Case Study Summary

In 2009, BC Hydro celebrated its 20 anniversary of their Power Smart Program (PSP), and in that year accounted for 983 Gigawatt Hours of electrical savings, which is equivalent to powering 65,000 homes for a year (www.BCHydro.com). One of BC Hydro's guiding principles is;

> "To develop and foster an energy conservation and efficiency culture in BC that utilizes technology to lead customers to choose a dramatic and permanent reduction in the use of electricity". (www.BCHydro.com)

The Power Smart Program was started by visionary leader and BC Hydro's CEO at the time, Larry Bell. Bell saw the need for BC Hydro to re-think the way they over promoted electrical consumption and to transform the culture of BC Hydro and BC residents towards one of conservation (Ron Mastromonaco, personal correspondence June 8, 2011). The projected growth in the province identifies a future 'energy gap' that will necessitate additional power generation or the purchasing of electricity from adjacent provinces/states. BC's commitment to clean energy guides how Hydro will meet future demand (see Appendix A), and bullet #4 outlines that conservation will account for 50% of future electrical requirements. The Power Smart Program targets the demand side of electrical consumption and is proving that conservation is less expensive than increasing power generation through additional projects such as site "C", and this does not factor in the environmental/cultural and social costs associated with building more dams (Ron Mastromonaco, personal correspondence June 8, 2011). Mastromonaco suggests that BC Hydro customers have had reliable, inexpensive power for so long that they simply have not thought about conservation and to get 20% savings in a home or 25% savings in an institutional or industrial setting is a very realistic goal.

Examples- applications to Colwood

The City of Abbotsford has partnered with BC Hydro Power Smart Program to improve it energy efficiency and in 2010 saved 600,000 kilo Watt hours (kWh) of electricity which equates to $180,000 (BC Hydro.com). The BC Hydro model provides incentives that typically reduce the payback time to less than 8 years and in some cases down to 2 years (depending on the existing equipment being replaced). The financial savings can then be used to hire a dedicated resource that can focus on energy and sustainability. The University of British Columbia, a long time Power Smart partner, has saved over 40 million dollars and now saves enough annually to operate a full time Environment and Sustainability Department that employs 14 people. In certain situations BC Hydro will actually rebate more than the cost of the retro-fit in order for financially restricted organizations to get the ball rolling (BC Hydro.com). The *Greening the Bottom line Report* (2011) suggests green revolving funds give consistent annual returns ranging from 29 percent to more than 47 percent. Colwood should consider a further retro-fit of "low hanging fruit" as well as a comprehensive audit/retro-fit throughout their municipal buildings with the notion that the savings would go to a dedicated (or even part time) sustainability coordinator.

Although Colwood is not a large enough consumer of electricity to qualify for a Hydro sponsored Energy Manager, there is now the option of sharing an Energy manger with adjacent municipalities, regions or institutions (www.BCHydro.com). The District of Saanich qualified for a BC Hydro sponsored Community Energy Manager for a year (2009-2008) and the Energy Manger identify potential savings of 1 million kWh (65 homes) and 90,000 Gigajoules of natural gas (500 homes) (www.citygreen.ca). Nancy Wilkin, from the Office of Sustainability at Royal Roads has discussed, with BC Hydro, the possibility of sharing an Energy Manger with adjacent organizations (Nancy Wilkin, Personal correspondence February 8, 2011). Robyn Wark (Personal communication, November, 2010) Senior Key Account Manger- Sustainable Communities, at BC Hydro, recognizes the potential electrical/financial savings in sharing Energy Managers in smaller municipalities, and the potential for financial savings to draw residents and businesses into the discussions around sustainability (thus leading to the cultural transformation BC Hydro seeks). There is great potential for Colwood to work with adjacent municipalities, developers and organizations to access the BC Hydro Power Smart Program existing resources and funding and examine energy and sustainability from a regional level. As the Power Smart Program has identified, there is electrical and financial savings for BC Hydro and their customers, and the Program can often act as first step towards cultural change.

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Appendix A- BC Energy Plan

- Clean or renewable electricity generation will continue to account for at least 90 per cent of our total power generation, with no nuclear power.
- All new electricity generation plants will have zero net greenhouse gas emissions and existing thermal generation power plants will have zero net greenhouse gas emissions by 2016.

- B.C. is committed to achieve electricity self-sufficiency by 2016.
- B.C. will set targets to acquire 50 per cent of BC Hydro's incremental resource needs through conservation by 2020.
- B.C. commits to having the best coalbed gas practices in North America by not allowing companies to surface discharge produced water. Any re-injected produced water must be injected well below any domestic water aquifer.
- The Province has also announced its Energy Efficient Buildings Strategy which supports the goals to reduce greenhouse gas emissions by 33 per cent from 2007 levels by 2020 as well as electricity self-sufficiency by 2016.
- The Province is encouraging small power production solutions through a purchase price agreement for electricity from projects of up to 10 megawatts.
- The Province has established the Innovative Clean Energy Fund which provides $25-million to help develop new and alternative energy solutions such as geothermal, tidal and wind.
- The Province supports the BC Bioenergy Strategy which takes advantages of B.C.'s abundant sources of renewable energy. This initiative will turn the challenges of the mountain pine beetle infestation into new opportunities and looks to future bioenergy technologies.
- The Bioenergy Strategy is a key contributor to helping B.C.'s partners in the Western Climate Initiative achieve the emission reduction target goals.

City of Colwood`s Energy and Emissions Planning

Case study by John Kirbyson

If we understand that design leads to the manifestation of human intention and if what we make with our hands is to be scared and honor the earth that gives us life, then the things we make must not only rise from the ground, but return to it soli to soil, water to water so everything that is received from the earth can be freely given back without causing harm to any living system. (Mcdonough, 1993, p. 3).

INTRODUCTION: Economic Imperative

In a search for a sustainable future Dale (2001, p.88) believes that "...one of our principle mistakes has been to view ourselves as separate from our environment and not part of it." This is because we perceive the environment and the economy as separate cycles rather than the alternative view, known as steady state economics which sees the economy as a subset of the biosphere. Dale recommends that there must be a move towards an "industrial ecology" – the application of ecological principles to industrial processes, such as the principle that nature produces virtually no waste representing the convergence of ecological and economic imperatives. This imperative should apply to city operations as well.

Likewise, Folke et al. (1996) recommend that ``...we should be stimulating the development of institutions, policies, and patterns of human consumption and production that work in synergy with ecosystem functions and processes`` (p.1022). Hollings et al. (2002) also calls of an approach to sustainability that links ecological, economic, institutional and evolutionary theory to overcome the disconnects between disciplines and addresses the unpredictable dynamics of ecosystems.

The purpose of this essay is to explore how the city of Colwood`s recent Community Energy and Emissions Plan (CEEP) meets that imperative. If not successful, Colwood`s limits to increased prosperity may not be the lack of human –made capital but the lack of natural capital.

BACKGROUND:

As part of the OCP, The City of Colwood adopted a vision and a series of policies to reduce their community- wide energy use and greenhouse gas emissions and also committed to meet or exceed the provincial requirements. (Colwood, 2008). As an early step towards developing a Community Energy and Emissions Plan (CEEP), the city hired a consulting firm to develop a model to identify what energy use and emissions reductions targets could potentially be realized if particular levels of performance in different sectors were achieved. (Jordan Fisher and Associates (JFA) .n.d) This model gives the city some key strategies to shape and develop its future CEEP plan.

The modeling process relied on CEEP information from other jurisdictions combined with existing staff and consultant knowledge to "create a simple picture of what it would take to achieve the desired reductions "without excessive technical analysis (JFA. p.2-3) . It created a baseline profile of the community's energy use and emissions based on future growth projections. The process was administered through the Mayor's Task Force on Energy and Economic

Development and included input from the broader community through workshops with key stakeholders and the general public.

According to the consultant report, the city could achieve its 33% reduction in GHG emissions by 2020 through the following strategies:

- reduction in personal driving by 20%
- increase in efficient vehicles by 37%
- switch to cleaner fuels to reduce emissions by 10%
- significant building retrofits to reduce emissions by 4%/year
- minor building retrofits/Energy management yielding a reduction of 5%/year
- new buildings built for high efficiency
- reduction in solid waste by 53%

The city's approach does have strengths as a first step:

- Created a simple, clearer understanding of the major sectors to focus on in order to achieve the target reductions and helped make more informed decisions.
- Provided the basis for the further development of polices and strategies that support more sustainable practises in land use, transportation, buildings, and waste management as well as further emphasizing the importance of implementing their OCP policies toward a sustainable community. In particular, it highlighted the importance of "mobility management" through better community design, active transportation and transit infrastructure in meeting both its OCP goals and provincial GHG requirements.
- Tailored to meet the needs of the City of Colwood as well as engaged people from the community and leveraged relationships with numerous organizations, thus fostering collaborative community spirit.

IMPLICATIONS FOR COLWOOD:

1. The City of Colwood should be recognized for its actions in developing the CEEP to reduce emissions and move towards its vision of a sustainable community, including a linking of ecological and economic processes. It is a positive and reaffirming example of an emerging city where the level of its awareness of its impact on, and dependency of the environment increases. This first step towards a more resilient community shows its adaptive capacity to change in order to optimize life for its residents (Hamilton, 2008). Holling et al. (2002) highlight that change and peoples adaptive capacity have made it possible to not only persist but to create and innovate when limits are reached. The community is finding a new stable state equilibrium for a new sustainable society.

2. From an Integral perspective, Brown (2005, p. 19) states that what an individual does (UR) is a reflection of values and yet, actions are not to sustain the values themselves but to "sustain an organism in its environment". Colwood then, should continue to build on those community values, communicate the urgency for change and highlight the real potential impacts that climate change can have on the community and, ensure that their economic and ecological support systems are linked.

3. Colwood has taken a positive first step towards meeting their Climate Action requirements. It would benefit further by next moving to the specifics and examining the Best Practises information available and begin to define more precisely the specific initiatives, cost savings and emission reductions possible. Continued involvement and participation from the community is essential to ensure that the actions will be acceptable in their community.

   Many examples of best practises are available. The Sierra Club sponsored a report on innovative and successful programs U.S. cities are using to become more sustainable, excluding transportation (Regelson, 2005). By developing specific climate action strategies including development of renewable energy sources and improvements in energy efficiency the cities demonstrated a convergences of ecological and economic principles with the following benefits: saved the cities money, provided economic benefits to the residents, reduced GHG emissions, provided more livable cities.

CITY	PROGRAM	ENERGY COST SAVINGS ($)	EMISSION REDUCTION
Austin	Retrofit school for heat and light	480,000 annually	N.A.
Chicago	Retrofit all public building	6 million annually	30,000 tons CO2
Fort Collins	Retrofits, rate increases, solar power	5 million per year	30,500 tons Co2
Portland	Retrofits city buildings	2.3 million per year	0.5 million metric tons in 10 years
Portland	Waste reduction	N.A.	.23 tonnes
Portland	Forestry+ carbon offsets	N.A	.31 tonnes

4. The CEEP plan now needs to drive the city design and function. Its recommendations influence city land-use and development, employment, housing , city operations, transportation and especially solid waste reduction. It would be prudent to review their OCP to ensure it is compatible with the CEEP.

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Carfree Market

Case study by Iren Koltermann

This paper explores the Carfree Market case study (Waldron, n.d) from the perspective of the Upper Right quadrant of the Integral Model. Hamilton explains that in the "upper right quadrant – the biological is the 'it' space of the city – the space where the body acts and behaves (Hamilton, 2008, p 125)." The Carfree Market is a "local sustainable development initiative to establish a pedestrian zone within a Canadian urban community (Waldron, n.d., p.1)." The application of this case for Colwood is also discussed.

In 2002, a group of local residents questioned the "narrow traditional limits of acceptable street use" (Waldren, n.d., p.1) and organized a "Streets are for People" party on rented parking spots (Waldren, n.d.). They would pay the street-parking fee, and start an activity on the spot, e.g. yoga, have lunch, or set up a rant box (http://www.streetsareforpeople.org/blog/). This initiative attracted attention from passers-by and it expanded into the rest of the street, the participants redirected traffic and turned the event into an impromptu street party (Waldren, n.d.). The initial success motivated the organizers to form a group called PS (Pedestrian Sundays) Kensington.

Since 2002, through building social capital and developing bridging and vertical ties (Dale and Newman, 2010) the organizers have been successful in organizing a well received monthly event by arranging street closure in a very busy residential and commercial area of Toronto. Throughout this time, the organizers have reached out to the community for both input and support, based upon which, they have decided to hold the event once a month on Sundays, allowing time in between events to raise the $2500 needed per event (Waldren, n.d.) This group has been able to maintain it's activity in Kensington, while expanding the idea to other neighbourhoods in the city. The aim of the group is to help communities take "back their common space and celebrate a day of cleaner air (http://www.pskensington.ca/what_about)." They are making a statement about climate change, while creating an experience of what a livable city and a sustainable future could be, simply by giving walking priority over the habit of driving. "It's a local action that joins a global ecological movement (http://www.pskensington.ca/what_about)." As Hamilton suggests "behaviours demonstrate our intelligence in action (Hamilton, 2008, p. 125)."

Once a month, the PS Kensignton group claims the streets of their neighbourhood and allows the community members to gather to share their stories through culture, music, arts, and contribute to the local economy by shopping and enjoying various clothing and food establishments in the market. As Hamilton suggests, the "Objective It is the arbiter of material energy of the city that rests on basics of material life…From the Objective It, we calculate our individual ecological footprints (Hamilton, 2008, p. 64)." PS Kensington does not claim to change the streets, it forever changes the way we use and perceive them (http://www.pskensington.ca/).

During Pedestrian Sundays, cafes, bars and restaurants gain, while clothing stores and some of the food stores break even, however, it hurts the business of fish mongers, fruit sellers and butchers, though they tolerate it once a month (http://torontoist.com/2008/05/tall_poppy_inte_56.php). As Dale writes, "within the context of sustainable development there are possibilities of reconciling the economic and ecological

imperatives (Dale 2001, p. 87)." It seems that the organizers of Pedestrian Sundays have reached a compromise with all the stakeholders, bearing in mind the social, economic and ecological imperatives, and have been able to successfully sustain their efforts during the past nine years, (Dale, 2001).

Implications for Colwood

Colwood needs to create an environment whereby its citizens are encouraged to build social capital around the city's OCP and CAP goals. The groups that are formed can identify opportunities and possibilities within the city to raise awareness and take steps, which can lead to the reduction of individual carbon footprints. If such initiatives already exist then Colwood can start sharing the resident based initiatives on websites such as Colwood Community Place. Publication of these initiatives could encourage groups to start other sustainable grass roots initiatives, and raise awareness about how to calculate and reduce residents' ecological footprints.

Another implication for Colwood is to look at public spaces and explore whether there are ways to change the residents perception of the uses of these spaces. Colwood has several areas such as the Colwood Farmers Market, the Hatley Park, the Esquimalt Lagoon, the Lighthouse etc…that can be used to bring the community together and create an inspiring environment where the residents can share in local food, culture and arts as well as become more engaged in city wide initiatives which are aimed at reducing carbon footprints.

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City of Linkoping, Sweden

Case study by Deb Rasnick

Abstract

This essay describes a situation where SD is fostered through observable behaviours and actions within community. Specifically, a case is described where actions of industry are being used to achieve economic prosperity, while concurrently achieving environmental and social imperatives; key enabling factors of leadership and community engagement are also highlighted. Linkages with course concepts, and application to our community of interest, are also explored.

Folke, Holling and Perrings (1996) convey the imperative for people and economies to act more in harmony than in conflict with ecosystems. Citing examples such as photosynthesis, crop pollination, climate moderation, and nutrient recycling, they describe how ecological services are a prerequisite to economic activity; and how these natural "factors of production" (p. 1019) are becoming increasingly scarce as a consequence of misuse and human population growth. To address these concerns, they highlight the need for creating incentives for users of biological resources to understand the true cost of their actions, accounting for them in decisions; and for developing institutions, policies, and patterns of human consumption and production that *workin synergy* with ecosystem function and processes. They posit that such actions will enhance biodiversity and ecosystem resilience, which in turn increases the insurance value that these ecologic services provide toward sustaining human activity and overall well being.

Daly (2005) suggests that a sustainable economy at some point must stop growing, but need not stop developing. Qualitative improvements in design of products and process can increase economic prosperity without increasing resource use. By transitioning from industrial "efficiencies" toward "substitution" and ultimately "redesign" (Dale, 2001, p. 89), communities may act with nature and "decouple human welfare from the throughput of matter and energy, and human well-being from consumption" (Dale, 2001, p. 90). The following case study illustrates a community that is evolving toward industrial redesign, and sustainability.

Yes we can Tap the Power of "It" in Community

For almost 20 years, the City of Linkoping, Sweden, has worked to transform its industries and institutions toward activities that support climate action and other principles of sustainability (Hjerdt, 2009; Jacobsson, 2009; Linkoping, 1998). In February 2009, leaders from this progressive community shared their story of transformation with local stakeholders in the Capital Regional District of British Columbia, convening at Royal Roads University (RRU) to discuss their integral approach (Hamilton, 2008); City of Colwood representatives were present.

Ann Dale (2011) identifies Sweden as one of the most progressive countries in the European Union (EU) for climate change strategies, policies and action. In the early 1990s, the Swedish government introduced a carbon tax with the goal of eliminating fossil fuel dependency by 2020. It developed its first SD strategy in 2002, including a suite of legislation, the creation of sixteen environmental objectives (Swedish EPA, 2010), and financial incentives available to municipalities to implement climate action (Dale, 2011). Dale posits that a key characteristic of Sweden's SD strategy is the system-wide, integrated approach it encourages.

Building on such national initiatives, and following the global momentum created after the 1992 United Nations Conference for the Environment and Development (UNCED) in Rio de Janeiro, Linkoping created an Agenda 21 plan of action toward achieving community-based SD. Agenda 21 is a program of action adopted by about 200 countries at the Rio convention; the title references an agenda for the 21st century, which appeals to all sectors, groups and individuals in society to work together to promote sustainability (Linkoping, 1998).

Linkoping's Agenda 21 is a twenty-year plan that sets out a suite of actions toward achieving SD imperatives within community. The plan is multi-sectoral, including: energy, transportation, waste, food, biodiversity, ecology and infrastructure, trade and industry, and youth. It discusses patterns of consumption and production, implementation and follow-up activities, and the approach to community engagement, cooperation and local democracy. It identifies a vision for each of these elements, along with performance indicators and reporting methodologies. Perhaps most importantly, Linkoping's Agenda 21 was created by community, using an extensive and highly engaging, participative approach (Linkoping, 1998); championing and leadership was provided by multi-domination political representatives and community leaders from business, non-profit and other institutional areas (e.g. University). The case study describes the extensive collaborative, co-creating approach undertaken through networks and round-table groups, the establishment of collaborative-based advisory groups, and the creation of a coordination and information-sharing office to provide on-going support for the initiative.

In their presentations at RRU, Linkoping representatives described several key actions undertaken under these strategies, with a focus on partner-based industrial ecological activities (Dale, 2001; Daly, 2005). These activities touch on several sectors including, energy, waste, transportation, infrastructure; and apply such concepts as waste-as-food, closed-looped cycles, waste hierarchy, smart growth, and plethora of other sustainability-related initiatives. Key outcomes include a decoupling of Gross Domestic Product (GDP) from greenhouse gas (GHG) emissions and particulate pollutants, with GDP increasing and deleterious effects dropping over a period of thirty years, as primarily waste-based alternative energy sources have slowly replaced fossil fuels, and significant biking infrastructure has emerged (Hjerdt, 2009; Jacobsson, 2009). As of 2008, Linkoping has already achieved almost three times the EU's 2020 targets for GHG reductions, reducing its emissions by fifty-five percent relative to 1990 levels. Sweden's proportion of renewable fuels is already twice that of EU 2020 targeted amounts, and Sweden sends only five percent of its municipal waste to landfill, compared with the global average of 84%. This progress has occurred while Linkoping [and Swedish] GDP has increased (Jacobsson, 2009). As Jacobsson states: "It's possible and it's no hardship – it's business" (slide 5).

When asked how Linkoping was able to accomplish this transformation, they responded with the following factors of success (Jacobsson, personal communication, April 6, 2009; Hjerdt, 2009, slides 14 & 15):

- A well informed public that wants to see change happen;
- Political responsibility, debate and common/joint decision making, ambitious goals, putting specific drivers in place and creating market mechanisms that drive the change, getting the public to play their part;
- Strong corporate leadership with long term goals based on rational implementation;

- A commitment to doing the right thing first and knowing it will make money over time, knowing the utility is less affected by short term changes on the political side;
- The right leadership, who is willing to drive change, push new ideas and concepts very consistently; and,
- Cooperation with external actor, and supporting business-driven environmental technology development.

The community's co-creation of their Agenda 21 long-term plan of action consistently undertaken over time, and based upon sustainability principles and industrial ecology activities that work with nature, has proven to be beneficial to the community of Linkoping, Sweden; illustrating that it is possible to make investments and build productivity around industries that produce sustainable results while also achieving economic prosperity. Key factors of success are community engagement, joint decision-making, political leadership, collaborative partnerships, and continued support toward a sustainable community vision.

Lessons for Colwood

This case provides many valuable lessons for the City of Colwood. It highlights the importance of development in community, identifying ambitious long-term goals that outlive political timelines and other short-term motivations, the use of partnerships, the creation of a framework with performance indicators and feedback, the importance of leadership, and how environmentally and socially supportive activities can also support economic prosperity.

Due to their growing and evolving community, Colwood is well-positioned to apply these integral concepts from Linkoping, in particular the elements of community engagement and building an economic base on sustainable industrial ecology activities. They have some relative challenges with respect to legislated powers, governance, and policy influence; however, it is my position that constraints like these may be viewed as opportunities to explore new partnerships and relationships. Colwood is entering a new paradigm; their leadership is strong and interested in supporting sustainability; they have the will, they have momentum, they are interested in meaningful community engagement. They now need the community-driven plan!

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Seattle *In Motion*

Case Study by Tracy Steere

This paper provides a brief description of *"Seattle Neighborhoods In Motion a* program launched in 2004 to encourage residents to walk, bike, take the bus, or carpool to reduce traffic congestion and reduce emissions while improving their own health" (www.iscvt.org). The case applies to the upper right (UR) quadrant of the Integral map and how a municipal program can engage individuals to increase physical activity levels and reduce greenhouse gas emissions (GHGs). The paper includes applications for Colwood.

Case summary adapted from (www.toolsofchange.com):

Prior to the launch King County Metro (KCM) gathered information to inform KCM of individual's perceptions, barriers and motivators.

- Barriers included personal safety and availability of service.
- Motivators were personal health benefits and connection with neighbors.

Program delivery

- Promoted using posters, website, phone number, and direct mail
- Invited local business' as sponsors
- Provide the first 100 respondents with bus passes
- Provided additional incentives for reporting trip changes
- Provided local leaders with a stipend for providing an interface

Results summarized from (www.iscvt.org)

- Participants in 20 neighborhoods reduced driving by 1.3 million miles
- Saved 66,040 gallons of fuel
- Avoided 674 tons of CO_2 emissions
- Participation levels 6 to 10%
- Approximate 20 percent decrease in solo car trips by participants

This particular case was chosen as it addresses social, ecological and economic issues. "The complex issues connected with the notion of sustainable development are not just ecological problems, nor economic, nor social. They are a combination of all three" (Holling,et.al,n.d). For example physical inactivity contributes to many chronic diseases such as diabetes, heart disease, obesity, colon and breast cancer (www. healthysf.org), which in turn impact economy. These diseases impact the health and wellness of people and also have serious impacts on our health care system, as well as loss of income for individuals and families. "Canadian direct and indirect annual costs in 1999 were estimated at $9.9 billion for diabetes and $9.16 billion for physical inactivity, translated in 2005 dollar value (www.ocdpa.on.ca).

The results of this case indicate behavior changes which have not only improved participants activity levels; but also reduced CO2 emissions. In a time when reducing the use of fossil fuels and our carbon imprint is so important, it is ironic that "With respect to energy, most nations spend several times more taxpayer dollars on encouraging greater consumption of fossil fuels than they do on encouraging greater efficiencies" (Dale, 2001, p 85). Dollars spent on programs

such as Seattle *In Motion* are a step in the other direction, supporting positive progress for our environment, and health.

In a profound Centennial Sermon William McDonough says that "We are creating a vast industrial machine, not for living in, but for dying in" (1993, p 9). Considering the amount of sedentary time spent inside in front of screens, or in a vehicle this is understandable. "It is as if the investors, planners and developers fail to recognize the implications of their city-building decisions that impact space, time and lives far beyond the footprint of the city (Hamilton, 2008, p 77) "A recent study found that for every 5% improvement in the walkability of a neighborhood, adults who reside there tend to walk and cycle 32% more" (www.canadawalks.ca) Suggesting that wise community developers would explore ways to make active choices more available and appealing.

Applications for Colwood

Colwood can learn from this program and explore ways to adapt it for their community. In review of the OCP goals this could be a good fit. For example Colwood says "Land use designations for all centresin the OCP are based on the concept of walkability" (www.solarcolwood.ca).

Potential fit for OCP goals:

2. *Community Health:* Would provide incentives and motivation that support healthy choices such as walking. Car pooling and public transit would provide opportunities for people to connect with other community members.

4. *Personal health:* Engaging residents in modes of active transportation would yield health benefits.

6. *Vibrant Economy:* Individual savings in fuel cost will provide dollars in the pockets of Colwood residents. "Each person or household essentially has a 'home economy' that arises because of the need to supply the basics of life to the individual cells in the household body" (Hamilton, 2008, p126).

7. *Energy, Climate Protection and Adaption:* Results from Seattle *In Motion* indicate a success in reduced consumption of fuels and CO2 emissions. Adapting the model for Colwood may also result in reducing fuel consumption and emissions.

Adapting this model would not necessarily come without some challenges. One could be the costs involved; however, they may consider partnering with other local communities to offset expenses. Grants do come available from organizations such as BC Park and Recreation to encourage physical activity, as do grants from green initiatives that could apply. Colwood could work towards a collaborative effort with transit for bus passes, local businesses and organizations for other supports. Another challenge may arise with transit routes; one solution may be to provide incentives for folks who will leave their cars at home even if it means they need to walk or bike a fair distance due to transit limitations.

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Living Buildings

Case Study by Leanne Bilodeau

The Lower Right quadrant of the integral model represents structures and systems: the facilities, infrastructure, design, policy and governance systems upon which cities depend to meet human needs (Hamilton, 2008).

The Living Building Challenge presents a framework for building sustainable design that was developed by the International Living Building Institute – an organization founded by Cascadia Region of the Green Building Council. It provides a standard for structures and systems predicated on the principles of sustainable design that help to integrate humans as a part of their natural environment (The Living Building Challenge, 2010).

Ecosystems Thinking

Hamilton (2008) asserts that, "even as cities become increasingly adept at creating built solutions to serve human demands, they seem to be disconnecting from the ultimate infrastructure on which their systems depend – namely the planet's carrying capacity." (p. 151, 152). Systems thinking enables us to see the interconnections between parts and the whole (Meadows, 2008), and through the lens of sustainable development, a systems perspective allows us to see the relationships and interdependencies between human activity and ecology (Dale, 2001).

The Living Building Challenge is a framework that seeks to reconnect the built environment with its ecological context (The Living Building Challenge, 2010). The framework applies to all scales of development and settings that range from renovations, new buildings, landscapes, neighbourhoods and communities that are designed to meet 20 sustainability imperatives, in seven areas or "petals" of a flower. The "petals" represent sustainable principles in site co-existence with nature, water independence, net zero energy, physical and psychological health, safe and socially equitable materials, equity for all species, and beauty that inspires, nurtures the spirit and supports transformative change. Examples of sustainability imperatives that cross the "petals" or sustainability imperatives include:

- limits to growth – project development on greyfields or brownfields; native species only to protect biodiversity
- habitat exchange – development projects must set aside an equal amount of land for natural habitat as they use for development
- car-free living – projects must promote pedestrian lifestyles
- energy – renewable energy technologies and de-centralized grid; reliance on solar
- biophilia - design elements must integrate nature – light, space, natural shapes, patterns
- democracy and social justice – equal accessibility to all

The Living Building Challenge can be viewed as a philosophy to help human beings develop buildings behave like living organisms and by doing so help reconnect human beings to nature and to care for and restore the natural infrastructure that supports all life.

Application to Colwood

There are several living building projects underway in British Columbia: UBC's Centre for Interactive Research on Sustainability (CIRS) and the Okanagan College Centre for Excellence in Penticton. These projects provide demonstrations of living building developments that can be shared with Colwood civic leaders, developers, and design professionals when contemplating growth and infrastructure improvements within the City of Colwood. In particular, living building projects and communities have their own utility in that they generate their own energy and utilize wastes as fuel. This relates back to applying the principles of industrial ecology as a means to develop adjacencies between industries; as well the development of clean-energy projects such as solar, wind and tidal that may apply to Colwood. In addition to reducing greenhouse gas emissions from vehicle traffic and utility consumption, living building developments operate in a way that re-unites people with the natural ecology and demonstrates that community, health, spirit, creativity and equity play a role in sustainable development.

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Port City - Urban Growth and Large Scale Energy Problems

Case study by Ione Brown

INTRODUCTION

Poor urban planning over years has led to an increase in suburban neighbourhoods that have low densities and inefficient use of resources including land use, water and energy use, public transport and car dependency (Lehmann, 2009, p. 7). This urban sprawl also utilizes potential agricultural/forest land and can lessen the sense of community that is generated through shared use of space. Hawken (1993) describes the problem of sustainability as a problem of both design and management and that socially responsibility is only part of the solution; we also need to redesign our institutions as well as our intentions (p. 423).

This paper is a case study review through the Lower Right (inter-objective) quadrant showing how a systems perspective could lead to more sustainable cities and less greenhouse gas (GHG) emissions. This review is based on a case study written by Steffen Lehmann, Dr. Eng. "On the Urban Scale: City Densification, and the need to solve large-scale energy problems. Case Study City Campus and Port City."

CASE STUDY REVIEW

Lehmann (2009) states that "urban design is integral to the practice of architecture and that one of the most significant environmental challenges of our time are now the increasing fossil-fuel dependency of cities and buildings and their growing demand for energy" (p.1). Cities need to implement sustainability principles in their urban design to substantially decrease the reliance on fossil fuels and energy consumption per individual. Design principles that are based on a relationship with nature, the climate and the experience of the sun, rain and wind can lead to a new type of urbanism that is sustainable (ibid. p. 3).

Lehmann (2009) has identified some of the ways that applying the principles of sustainable urban growth can lead to human settlements where residents can live a healthier quality of life while using minimal natural settlements (p. 2), as follows:

1. Adaptive re-use of former industrial (brownfield) sites;
2. Upgrade and re-use of existing building structures (Gauzin-Mueller, 2002; Lehmann, (2006) *in* Lehmann, 2009, p. 1);
3. Mixed-use urban consolidation to ensure that homes are close to employment, education, shopping, health services so that individuals can bike to work on safe bicycle paths with secure facilities, and use of efficient public transport;
4. Residential and office buildings that are multi-storey, flexible and compact to maximize land available for green space and gardens;
5. Building developments that make the best use of renewable sources such as sun, wind and rain (through green roofs), on-site energy production, natural cross ventilation, and passive solar design;

6. Integrated urban water management strategies;
7. Urban designs that emphasize development on land which has previously been developed and is of little ecological value (ie brownfield sites, inner-city spaces, etc) with a strong emphasis on adaptive re-use and retro-fitting;
8. Developments where a high proportion of building materials are designed for prefabrication, re-use, disassembly and recycling to minimize materials consumption;
9. Planning that reflects "best practice" of compactness, orientation, density, and appropriate internal location of cores, to optimize concepts of passive design and maximum day-lighting;
10. Materials, food and other goods that are sourced locally in order to cut CO2 emissions caused by transport through shorter supply chains;
11. Strict waste management to reduce waste going to landfill and waste during construction; waste-to-energy strategies.

Implementation of the above principles in city development can have very positive effects on the energy consumption, sense of place and health and well-being of residents in newly designed cities. As Hamilton (2008) describes, if we want to change behaviours in the city to become more sustainable, we need to utilize the effects of the "diversity generators" or those that are willing to change and are ahead of the "norm" (p. 164). Those individuals will be the ones to lead the change and can do so if the influence from the "conformity enforcers" is not too strong. If we were to only think about the physical or objective side of the design and not the subjective and intersubjective (individual and cultural) elements of change then substantive change is not likely. We need to be aware of all elements of the system to induce positive change. Through the lower right quadrant, for example, we can use biomimicry to allow the built environment to work like nature and manage the flows of air, water, minerals, and waste by mimicking ecosystems to produce change (DeKay *in* Brown, 2007, p.18).

Lehmann (2009) suggests that one of the problems that can arise from a new "carbon-neutral" development is the increase in land values that can occur, leading to reduced social diversity and the loss of the multicultural/vibrant aspect of the city (p.6). An integral approach to design and development taking into account the health and well-being of all can ensure that the development does not restrict but encompasses a diversity of members.

"The most sustainable building is one that already exists" (Lehmann, 2009, p.7). City development that utilizes existing infrastructure wherever possible and designs new construction to incorporate future uses and plants trees to offset energy and materials used follows the principles of natural design, as described by McDonough (1993, p. 7).

IMPLICATIONS FOR COLWOOD

The City of Colwood is looking at increased population growth over the next few years and is at a place where they will be able to implement new designs with densified development. Colwood has an opportunity to utilize some of the principles used in the Port City and City Campus, above, when designing their new developments and utilizing existing facilities and buildings wherever possible to ensure sustainable growth. Colwood must adapt and take responsibility for the health

of the city's internal and external condition, as described by Hamilton (2008) and understand that the city is not sustainable if its ecoregion is not sustainable (pp. 152, 154).

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TOD in Mont-Sainte-Hilaire

Case study by Vickie Brown

The case study I looked at involved mass transit for the town of Mont-Saint-Hilaire in Quebec. The town is 40 minutes from downtown Montreal. In an effort to reduce the amount of cars on the road, and therefore reduce the greenhouse gas emissions they wanted to reintroduce mass transit to the area. This development looked at sustainability using the principles of Transit-Oriented Development.

The planners wanted to not only bring mass transit to Mont-Saint-Hilaire, but to encourage people to actually use it. This would take looking for a different approach, or really an old fashion approach. Before cities were designed for cars, they were designed as walkable cities. This is the concept the l'Agence métropolitaine de transport (AMT) is trying to follow.

Principles of Transit-Oriented Development (TOD)

The extension or use of existing mass transit systems offers the potential to introduce principles of sustainability within larger urban areas. Successful introduction, however, requires concomitant and consistent implementation of sustainable development principles within affected communities. If not, new transit-induced communities will most likely only mirror development typical of other segments within the region. At Mont-Saint-Hilaire, the community implemented concepts of Transit-Oriented Development (TOD) to further sustainability to the extent that these were introduced into municipal zoning and planning processes.

According to H. Dittmar and G. Ohland in The New Transit Town, critical transit-development principles leading to sustainability include:

1. location efficiency where homes are located in proximity to transit systems;

2. a rich mix of choice, including community amenities and businesses, are within walking distance to remove the necessity of automobiles;

3. the reality of meaningful value capture within the community i.e. transit service must be rapid and of high-quality and community services must be meaningful;

4. meaningful place-making in that the community must be attractive and mix with its natural environment; and

5. resolution of Node/Place tension in that the transit station has to blend into and be part of the community.

Implications for Colwood

Colwood would like to bring in mass transit to have fewer cars on the road and increase sustainability. In addition the city would like to increase the number of business in the area. (Cullington) The idea of TOD would fit well into their OCP. Three of Colwood's Community Sustainability Goals are Energy, Climate Protection & Adaptation, Vibrant Local Economy, Ecosystems & Biodiversity. Using the principles of TOD, would contribute to their attainment. As we have seen in other cities, Saskatoon is an example, as more and more cars are being driven

on the roads, the city planners have to create more roads to cut down on congestion. When roads are built ecosystems are destroyed, money is spent and more pollution is created.

Creating a walkable city where people can shop and live near the train station would be an ideal situation.

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Okotoks and its Limits to Growth

Case Study by Don Grant

This is perhaps the most difficult of our four case studies because in my experience systems thinking is a stretch for most municipal administrators and elected officials. For years the Federation of Canadian Municipalities used to ask applicants for funding for community sustainability projects to describe how they were going to apply a systems thinking approach to their work. They have recently dropped this question as it is hard to answer and even harder to implement.

One of the reasons why this might be true lies in the observations of Paul Hawken about the differences between the guardian system (municipalities) and the commercial system. "The guardian system is hierarchical, adheres to tradition, values loyalty and shuns trading and inventiveness. The commercial system, on the other hand, is based on trading, so it values trust of outsiders, innovation and future thinking" (Hawken, P., 1993, p. 427). Movement by municipalities is slow and steady; as the lowest of three tiers of government they have many masters and expecting them to fully implement systems thinking may be ambitious.

However, a great example of a community that has used systems thinking and has positioned ecological functionality as a limit to growth is Okotoks, Alberta. It has approximately 22,000 residents and is a popular bedroom community for the city of Calgary that has grown in terms of population by 46% from 2001 to 2006. (Share the Wheel, 2011).

In 1998, Okotoks decided to link growth targets linked to environmental carrying capacity.

"Informed by extensive public consultation, the high cost (a regional pipeline) of exceeding carrying capacity, and a preservation of a small town atmosphere value system expressed in a community survey, a community driven vision was created that chose to respond to rather than manipulate the environment to sustain our standard of living. A population cap at the licensed limits of the Sheep River aquifer (approx. 30,000) became a key feature of Okotoks' development path. A build-out municipal boundary for 30,000 people was established" (Town of Okotoks, 2011).

In this way Okotoks is almost like a Factor X business (Robert, K., 2002, p. 205) in that it is fitting total growth around an available resource – which in this case is water. Moreover, the Town has cut its per capita use of water from 1998 to 2008 by almost 200 litres per resident (see table below). This will provide them with an additional buffer as the come close to their overall growth limit.

Key targets for 2030 set in the Okotoks 'Legacy Plan' (Town of Okotoks, 2011)

Target 2030	**2008**	**1998**
Population Build Out of 30,000 people	approx. 22,000	16,000

Target 2030	2008	1998
Housing 30% to be "non-traditional"	33%	17%
Density 11.5 residential units per gross hectare	11.5	11.5
Assessment Base 22 % is to be commercial	13.9%	11.7%
Water Use 318 litres (70 gal) per capita per day	333 litres per capita per day	502 litres per capita per day
Commuter Ratio 40% commuter ratio	47.59%	.60%
Waste Generation 30% per capita reduction	40% of waste diverted from landfill 0.70 kg per capita per day (30% increase)	0.54kg per capita per day
Open Space 20% of total land area is to be open space	21% has been achieved	-

Application to Colwood

Okotoks is only slightly larger than Colwood, and it is a bedroom community. It sits as an example of standing firm and making hard decisions about growth. It is a lesson in understanding ecological functionality and working within these limits to create a resilient community that has some protection against natural limits.

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Seabird Island

Case study by James Gudjonson

The Seabird Island project, located in British Columbia approximately 150 kilometres upstream from Vancouver on the Fraser River, is the first of its kind in the world (Dobie & Sieniuc, 2003). The Seabird project has assembled a whole range of strategies, new technologies, innovations and new products to demonstrate an integrated approach to sustainable housing (Dobie & Sieniuc, 2003). The Seabird Island Project demonstrates how local resources, including building materials and renewable energy sources, can be incorporated into the built environment to save on building costs and maintenance costs while addressing the social and cultural needs of the Seabird Island First Nation community.

Dobie & Sieniuc (2003) suggest that the key to the Seabird Island project was community engagement; the community members were initially consulted in an information transfer opportunity and the process continued to have extensive community involvement including a 'self construction' model throughout. Dobie & Sieniuc (2003) add that virtually all Seabird Island residents, from the elders that created the Spirit Garden to the schoolchildren who grew plants for its four quadrants, have taken part in some way.

The Spirit garden is the focal point of the community (see Appendix A) integrating sacred space with the new residential plan (and a state of the art wind turbine). The Spirit Garden, which is a healing herb garden, contains four locally carved poles in each of the four quadrants that demarcate the four sacred cardinal directions (www.seabird.ca). The poles represent the Eagle, for wisdom, strength and protection; the Welcome Figure, to greet residents at their new home; the Bear, whose captured fish feeds the people; and the wolf pup, who symbolizes the importance of family and community (Dobie & Sieniuc, 2003). Bopp & Bopp (2006), Brown (2005) and Hamilton (2008) utilize models that identify four quadrants and the need for restoring balance (and maintaining balance) in the quadrants in order for individuals and communities to be healthy. The Seabird residents have made the Spirit garden the focal point to act as place to gather, to heal and to maintain a balanced healthy community.

Design Utilizing local Resources and Local Sources of Energy

Dobie & Sieniuc (2003) claim the project had an extremely tight budget that required a practical approach that was only possible with a commitment to sustainability, community participation and industry support. Dobie and Sieniuc (2003) state that references to traditional vernacular and past technologies were embodied in the design, structure and detailing and indigenous materials from the local ecosystem such as recycled old-growth yellow and red cedar logs, cedar siding, river rock and traditional forms were used as much as possible. The Seabird design is consistent with McDonough's (1993) first characteristic of natural design which claims that everything we have is already here- the stones, the clay , the wood, the water the air (and the sun and the wind in this case). The homes are oriented to the south to allow the solariums and living areas to benefit from the suns energy and are in a semi-circular pattern around the Spirit (healing) garden. The following is a summary of the local energy sources and local ecosystem considerations that were brought into the design (Dobie and Sieniuc 2003).

- Designers identified Seabird Island as a windy site and 3 wind turbines were installed to take advantage of this local energy resource. An experimental wind turbine that produces less noise was installed in the Spirit garden and in combination with the 2 other turbines on site can produce 15-20% of the electrical energy required for the new homes.
- Solar energy was also considered a local asset and solar roofs (made of 50% recycled materials) were designed to act as solar collectors and trap hot air inside the roof cavity when the sun shines on the dark green roof. The hot air is then moved with a high efficiency fan and stored in the concrete floor slab for later release. Solar energy is also used to preheat domestic water.
- Earth-tubes act as low tech version of GeoThermal Energy System and take advantage of the constant ground temperature at Seabird of 12 degrees Celsius. Outside air is drawn through the tubes with a high efficiency fan and then only has to be heated an additional 4-6 degrees. The earth tubes can also be used to cool the residences in the summer (the homes do not have furnaces)
- The site was carefully graded to take advantage of natural contours so that all storm water during rainy seasons would be absorbed
- Drought tolerant plants and grasses were used in the landscaping to ensure little or no irrigation would be required.

Implications for Colwood

The Seabird Island homes are forecast to last 100 years, can save up to 75% on energy and maintenance costs and can reduce construction costs by as much as half compared to conventional homes (seabird community website, 2011). In addition the homes have superior air quality, a minimal environmental impact and flexible floor plans that can accommodate the changing needs of families and elders (Lee, n.d.). Dobie and Sieniuc 2003 suggest that while the project aimed to develop practical, common-sense and affordable housing for the Seabird First Nation community, the design solutions can be easily transferred to every type of community across Canada. Dobie and Sieniuc (2003) advocate a participatory planning approach and ecologically sensitive building designs that factor in the local ecosystem and local renewable energy sources and can be applied to any community development.

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City of Portland; achieving sustainability through "Its" of systems and structures.

Case Study by John Kirbyson

The City of Portland Oregon is considered to be one of the top-ranked sustainable cities in the US (Cohen, 2011; Foon, n.d.) and a world leader in energy sustainability according to a Sierra Club report (Regelson, 2005.p. 22). According to SustainLane (2008), which is "the nation's most complete report on sustainability", Portland excels in leadership, innovation, a commitment to their environment and overall quality of life, knowledge and communication and sustainability planning and management. With its small population size, coastal climate, and similar guiding visions, Portland has some strong parallels to the city of Colwood. The purpose of this paper is to examine their critical success factors, especially those Integral Model perspectives of the actions within the (UR) and (LR) of their social, economic political and ecological system operate, which may be applied to a Colwood.

Broadly, there are two key overall factors that have led to Portland's success; (1) creation of a community vision and values which incorporates a holistic systems view of the city coupled with a set of worldview principles that respect the social, economic and ecological health of the community (Regelson p. 21), and (2) the collective actions of the community brought together and united to achieve the vision.

1. VISION AND VALUES. The city recognized their responsibility as stewards of the social and natural environment. They also recognized that the three components; a Sustainable environment, economy, and social community are intertwined and dependent on one another (Portland, 2002) and they systematically incorporate this vision of sustainability into everyday decision-making.

2. COLLECTIVE ACTIONS. Through the vision and strong leadership, the community was drawn together to help achieve the objectives of the community as a whole. A collaborative approach was integral to get sustainability initiatives off the ground. Examples of some actions:

    - A task force of multiple stakeholders was created to develop a comprehensive strategy to develop the goals.
    - City hall was restructured and silos removed, and all departments were assigned the mandate to achieve the sustainability vision. A collaborative and dynamic governance model was adopted whereby stakeholders and departments come together to forge partnerships and push sustainability initiatives. (Foon, n.d.). An office of Sustainability and advisory committees were created.
    - Experts in the field were brought in as advisors.
    - Leaders in the community were called upon to be advocates and build strong community support and to get buy in from multiple stakeholders.
    - Extensive and ongoing public consultation occurs resulting in strong support from neighbourhood associations, advocacy groups. The community is called upon to volunteer and be hands on with many initiatives.

- City groups and private partnerships coordinate and manage many different green initiatives in a self -regulating dynamic manner.
- Commitment to communications and education. They offer and education and training programs designed to provide resources for the community to promote sustainability, provide incentives and support programs, They also link green business and consumers together and offer
- Created the Best Business Centre which is a one stop shop for businesses that want to become greener and more profitable. (Portland, 2011). They provide free on-site evaluation of a business's energy, water and recycling, purchasing and green building and transportation programs.
- Several city universities are actively committed to teaching sustainability.
- Portland Sustainability Institute (PSI) was created to systematically bring together business, higher education, non-profit and municipal leaders to drive a set of next-generation initiatives for urban sustainability in region. Their goal is to go beyond sustainability and create cities and neighbourhoods that are not just sustainable, but restorative.(PSI, 2009).
- uses community groups to conduct ongoing monitoring and evaluation

Ecological benefits from Portland's approach:

All city actions are now designed to protect their local and global environment and have launched many initiatives to restore ecosystem health. A few examples:

- Adopted a very ambitious Climate Action Plan that aims for an 80% reduction of their 1990 emissions by 2050.
- adopted stormwater management plan to improve watershed health
- Greenstreets initiative to plant 80,000 trees for shade, habitat and air quality
- eco roof incentive program creating 43 acres of roof top gardens to protect water quality and reduce city operating costs
- adopted ongoing monitoring and feedback of ecological systems
- most importantly has raised awareness, consciousness and respect for the value and role of their ecosystems in providing for the quality of city life

The City of Portland's success at becoming a very livable, sustainable city demonstrates some of the key principles of sustainability:

1. From an Integral Model perspective, the city has followed Hamilton (2008) and Brown (2005) in recognizing that to be successful at SCD initiatives requires an inclusive approach which incorporates the realities of all four quadrants together in a synergistic approach. The (UL) experiential values have been defined, the behavioural (UR) and cultural (LL) factors developed into collective actions of thesocial, economic and political system**s** (LR) operated together to help achieve the objectives

2. A Medicine Wheel Model approach (Bopp and Bopp, 2006) stressing the importance of creating a community vision with values that begin with respect for the individual and family within the context of a holistic world view.

3. Recognizing the importance of building strong community support through community engagement (Bopp and Bopp, 2006) and that fostering a civil society, creating social connections and civic engagement (social capital) is essential for vibrant civic life (Putnam 1995)

4. finding leaders and experts in the community to be advocates for the vision (Hamilton 2008, Bopp and Bopp, 2006)

5. Recognition that humanity is part of the natural world and dependent upon it for survival (Folke et al. 1996). Understandingthat ecosystem dynamics support the process and that maintenance of the system is essential to life. **Society must be** modelled after ecological principles and
   Natural Capital must be maintained (Dale, 2001, Hawken, 1993).

6. A need for new way of thinking – a new paradigm that considers the ultimate goal is to create social well -being and resilient communities (Daly, 2005).And that sustaining ecological systems will require diverse social systems supported and maintained by robust government systems and revised government policy (Dale and Neman, 2008)

7. A systems approach (Meadows, 2006; Roberts et al. 2002)) to achieve Dale's three imperatives. For example, when faced with decisions, Portland "...city government, residents, institutions, and businesses ask a series of questions: Is this decision good for the environment, the economy, and the community? Is this good for the long-term? If the answers are "yes," then the decision will move us toward becoming a more sustainable city." (Portland, 2002.p. 24). This reflects Hawken`s (1993, p. 423) requirement that `we need to describe a system of commence and production in which each and every act is inherently sustainable and restorative.

IMPLICATIONS FOR COLWOOD

This case highlights essential actions for the city to consider in order to achieve sustainability:

1. A governance model that integrates a collaborative and dynamic approach, bringing in community leaders, experts , businesses, educational institutions and the non-profits, representing all factors of the "IT/"ITS" community oriented to achieve the vision and OCP goals
2. ensuring cooperation between all government departments and organizations
3. a strong community education and engagement process helping to bring the entire community on board supportive and working to a common cause
4. Integrating their sustainable development ethic into all decision making and policy formation.

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Austin, Texas Case Study

Case study by Iren Koltermann

This paper reviews a case study of the introduction of a law in Austin, Texas requiring building owners to disclose energy use information about their buildings pre-sale (www.iscvt.org). The Lower Right quadrant of the Integral Model – the *Interobjective Its* (Hamilton, 2008, p. 64), is the "collective exteriors…such as systems and the physical environment (Brown, 2005, p. 9)." Using this quadrant shows that Austin's law changed systems and structures determining the retrofitting of buildings. The implications for Colwood are discussed.

As Hamilton suggests due to a fast-growing awareness of the effects of climate change, "the warning signals offered by the eco-footprint, the carbon footprint and climate warming are all critical vital signs that we need to monitor and change behaviors based on the feedback they report (Hamilton, 2008, p. 152-153)." Motivated by this awareness, in 2007, the Mayor of Austin released a new Climate Protection Plan that targeted building energy efficiency as a main action area, since 70% of the city's electricity was used in buildings (www.iscvt.org). Austin Energy, the City owned electric utility, also had a priority goal to reduce electricity use in Austin's buildings. To address these issues, the utility and the Mayor agreed that regulation was necessary, and that the new legislation should reduce energy bills, hence, making home ownership more affordable (www.iscvt.org).

Unlike legislation promoting building energy retrofitting which resulted in some level of retrofitting with minimum improvement, the time-of-sale energy disclosure has proven to be a more effective approach to increased retrofitting (www.iscvt.org). Making buyers aware of the energy operating costs of buildings results in lower prices for inefficient building, thus creating an economic incentive for sellers to improve them (www.iscvt.org).

Through building social capital and developing bridging and vertical ties (Dale and Newman, 2010), a task force of 25 stakeholders was formed (www.iscvt.org). By making "partners of potential enemies (p. 4)" a new law called the Energy Conservation, Audit and Disclosure Ordinance (ECAD), was devised and took effect in June 2009. The stakeholders were able "to resolve several issues through dialogue and compromise (p. 4)." As Hamilton suggests the stakeholders created "bridges that break down silos, stovepipes, and solitudes through required communications and public reporting (Hamilton, 2008, p. 171)." They also had to "shift into a systemic mindset where rights, responsibilities, and structures become aligned (p. 167)." Examples of such compromises were when the Austin Board of Realtors, opposed suggested mandatory energy upgrades, and "advocated for making audit results part of the standard real estate disclosure process, and the task force agreed (www.iscvt.org, p. 4)." Or when the Building Owners and Managers Association of Austin (BOMA) voiced its concern that no one set of prescriptive measures made sense for all commercial buildings because of the diversity of their uses and systems, instead a rating system based on the ENERGY STAR portfolio Manager, known to their members, was suggested and agreed upon, which allowed the members to see how the energy efficiency measures were working on an everyday basis (www.iscvt.org). In turn, BOMA embraced a voluntary goal of surpassing the average ENERGY STAR score for all U.S. commercial buildings by 30%, in 90% of its members' buildings, by 2016 (www.iscvt.org, p. 4)."

ECAD regulates the energy disclosure of residential single-family, residential multi-family and commercial buildings. Any single or multi-family home which is 10 years or older must have an energy audit report before sale. The owner must disclose the audit report to the buyer and send a copy to Austin Energy. Multi-family buildings need to post the results of the audit in the building and provide it to the tenants. They also need to undergo mandatory upgrades if the building's energy use per square foot exceeds the average energy use in all of Austin's multi-family buildings by 150%. Commercial buildings that are ten years or older need to obtain an operational energy rating, and disclose this rating to the seller and file the rating with Austin Energy (www.iscvt.org).

The first year of this law resulted in:

- 4075 homes audited for energy consumption. A similar number of houses is expected to be audited annually,
- 74 commercial buildings, totaling 12 million square feet were energy rated,
- $1 million was added to Austin Energy budget for low-cost loans and rebates of retrofits,
- A significant increase in participation in Austin Energy's building efficiency programs (www.iscvt.org).

Implications for Colwood:

Colwood can learn from Austin that even when green initiatives have positive economic returns, they can fail to occur if those returns do not accrue to the decision makers. For instance, when the operating costs of a building are borne by someone other than the owner, i.e. by a tenant or commercial lessee, and when the tenant has little information about comparative operating costs, the owner has no incentive to improve building efficiency, and market forces will not be effective due to the lack of transparency. Austin shifted the market and information structures to create transparency, with the hope to make the market effective. It augmented this with mandatory improvements for the worst buildings, which could now be identified using the comparative data the law generated.

Colwood can also learn how to build partnerships with various organizations to create stakeholder engagement in order to develop solutions. If residents feel they have been part of the decision-making process, they are more likely to support projects such as Solar Colwood. Austin's gathering stakeholders together to create the law, built unity of vision and acceptance. As one of the stakeholders mentioned, "The key to securing approval for a law like the ECAD is not to go in with a preconceived notion of how it should work…you have to explore all possible ramifications of the ordinance that is being proposed, and you have to be willing to compromise (www.iscvt.org, p.4)."

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Sustainable Development (SD) through Systems and Structures

Case study by Deb Rasnick

Abstract

This essay describes a situation where SD is fostered through systems and structures within community. Specifically, a case is described where ecological functionality has been incorporated into the built environment, in the form of design of new residential development. Linkages with course concepts, and application to our community of interest, are also explored.

William McDonough (2005) asks humanity to imagine a world in which our production and consumption provides nutrition for nature and industry, where everything is so intelligently designed that our activities generate a delightful, restorative ecological footprint; where there's choice - in all spheres of working and living - to use goods and services that enhance community well-being and virtually eliminate the concept of waste. He asks us to imagine buildings in tune with the biosphere that inhabit the landscape like native trees: "making oxygen, sequestering carbon, fixing nitrogen, purifying water, providing habitat for thousands of species, accruing solar energy, building soil and changing with the seasons – while also generating remarkable productivity and providing beauty, comfort and delight" (p. xxiii). He asks us to consider ways in which these changes - this "rediscovery of our connection to life" (p. xxiii) - could revitalize our cities and economies and transform our relationship with the Earth.

In this paper, a case study from Greater Victoria is presented that illustrates the concepts of *designing with nature* and *waste equals food* (Dale, 2001; Hawken, 1993; McDonough, 1993), and demonstrates how such sustainable design choices in new development can achieve all of the imperatives of sustainable development (Dale, 2001).

Designing with Nature – A Case Study

McDonough (1993) poses that "design leads to the manifestation of human intention" (p. 3), and if we wish to honour the planet and everything in it, then the things we make must not only come from the earth but return to it without causing harm. He suggests we look to the fundamental laws inherent in the natural world to use as models for human designs. In doing so, he posits that "we can, by design, enhance humanity's positive impact on the world" (2005, p. xxiv). I explore a case of a new family home that aims to do just that.

Located just north of Victoria, British Columbia, the three generational home of the Baird family has recently received a *Living Building Award* from the International Living Future Institute (ILFI). To be eligible, a building must demonstrate an improvement in the ecosystems it inhabits (ILFI, 2010). A prior brownfield, features of this five-bedroom cob home include passive solar design with a tie-in to the BC Hydro grid, solar thermal heating, natural light from many directions, composting toilets with residuals applied to gardens, rain water harvesting, grey water re-use through biological filtering, a living roof, quiet interior from insulation, no toxic materials, earthen floors and natural finishes in a modern and affordable earthen architecture. The Bairds organically designed their home, using the land as architect, and introducing both simple and complex systems that were synergistic with the land and symbiotic with organisms. They state

the most creative aspects of their home came from trying to solve a problem; usually a design flaw not fully considered; their systems evolved as they learned. (ILFI, 2011).

The Bairds state the cost of their home was comparable to conventional models, and provides on-going benefits of net positive energy to the BC Hydro grid, while conserving water and being carbon neutral (Arrais, 2011). The Bairds describe several objectives from their project, as follows:

> "To live a reasonable life where our home is an extension of nature; where the systems incorporate bio-mimicry for both function and beauty. All systems work with nature to create a space that is safe and provide for our needs sustainably… Our home will exhibit a practical example of sustainability… showcasing luxurious simplicity… to challenge our culture's desire for a consumer economy… a 'reasonable life' relies on living respectfully within nature and avoids the 'bigger, better, faster more' mindset that defines over-developed countries like our own" (ILFI, 2011, Beauty tab)

The Bairds are sharing their knowledge with other by monitoring their home as a living laboratory and offering tours to the general public. Some of the most important lessons learned from the project were the importance of choosing the right mix of people to work with and developing respectful relationship with others – particularly municipal officials. When asked about their lives in community, the Bairds state:

> "We see ourselves as active members whether it is the neighborhood, the natural building community, or our friends. Our vision for the environment is to live sustainably and share what we have learned with others to help inspire positive change. We believe the energy for change comes from focusing on exciting possibilities and not on the problems. Solutions can be found through creating new visions where individual contentment, social justice, community/family values, and our life-supporting environment are all seen as one cohesive concept. If it isn't affordable...it isn't sustainable." (ILFI, 2011, Beauty tab)

Ultimately, the Bairds articulate their desire for creating a lasting legacy through their children by helping them to understand their role in nature - to feel included and not isolated: "we want our children to have their sense of self-origin from their place on earth and in community; not their stuff on earth" (ILFI, 2011, Beauty tab). More information on the Baird's Eco-Sense home may be found on their website: www.eco-sense.ca.

Lessons for Colwood

This case provides valuable lessons for the City of Colwood with respect to sustainable community design opportunities and their benefits from each of the SD imperatives. It is important for Colwood to wisely leverage their legislative authority with respect to community design, zoning matters, and economic developmental opportunities to encourage community development and industry that works with nature and supports community place. For once community design decisions are made, their costs and benefits to the environment, society, and economic base may be locked-in for generations. As Hawken, Lovins and Lovins (1999) posit, "by the time the design for most human artifacts is completed… 80-90 percent of their life-cycle economic and ecological costs have already been made inevitable… all the really important

mistakes are made on the first day" (p. 111). Such risks and opportunities also highlight the importance of leadership.

Due to their growing and evolving community, Colwood is well-positioned to apply these concepts through their governance and policy roles; a key supporting consideration is the need to foster positive relationships with community members and potential partners as the community evolves through this social and structural development. Colwood is entering a new chapter in its existence; their current leadership is strong and interested in supporting sustainability; they have the will, some momentum and interest; they now must work with their stakeholders to meaningfully discuss these concepts and their importance, and co-create a plan to get there.

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Case Study: Cleveland's Evergreen Cooperatives

Case study by Tracy Steere

This paper provides a brief description of Cleveland's Evergreen Cooperatives (CEC) a worker owned cooperative "designed to help a historically marginalized community surrounding the cities "University Circle" create wealth and secure meaningful jobs… utilizing green business models" (www.iscvt.org). This case applies to the lower right (LR) *interobjective* quadrant of the Integral map where 'efficient systems can be developed that deliver water and food, dispose of waste, build and maintain shelter and produce clothing'(Hamilton, 2008, p 64) However, "the building blocks of human structures arise in order to accomplish intentional goals (Hamilton, 2008, p 158) and one can see that through the goals of this cooperative that shared values represented in the lower left quadrant of the Integral map have had an influence. This summary also provides applications for Colwood.

Case summary

CEC is a for-profit organization with "partnerships between the residents of six neighborhoods in the city, the Cleveland Foundation, the City of Cleveland, Case Western Reserve University, the Cleveland Clinic, University Hospitals, and many others" (www.evergreencoop.com).

CEC has created three business models with the intention on making both a positive economic and environmental impact on the community. This summary has been adapted from the Institute of Sustainable Communities (www.iscvt.org)

1) Evergreen Cooperative Laundry: A feasibility study found that due to high cost of doing laundry in the 'University Circle' there was a demand for a water-efficient laundry services. This cooperative currently employs 7 people with projections to reach 50. Their service:

    - Uses .8 gallons of water per pound of laundry (industry average 4-6 gallons)
    - Continually filtered water is reused, and heated from used water, saving 35% on heating energy
    - Ducts re-channel heat from the dryers to warm incoming air
    - The building is a remodeled LEED-Silver building to accommodate the needs of the laundry service

2) Ohio Cooperative Solar: Leases, installs and maintains solar power on large buildings in the city. In addition they provide weatherization services for residential and commercial buildings, which keeps people employed throughout the year. Ohio Cooperative Solar currently employs 14 people with projections of growing to 100 employee/owners

3) Green City Growers: Is currently in the planning stage. They have secured $10 million in grants and loans, and interviewed potential business customers. Their goal is to produce local fresh produce year round using a hydroponic greenhouse system, enhance neighborhood access to produce and remain in line with sustainable practices and carbon reduction. They have secured space from the city and anticipate construction in 2011.

"The university circle area of Cleveland draws 3 million people annually to work, learn, visit, and receive world-class health care (www.retailspacescleveland.com). That coupled with "Immense failure to match city demands to geo-graphic capacity, most cities suck up water, matter and energy indiscriminately (Hamilton, 2008, p 8). A business model like that of the CEC which develops and implements practices to conduct business in a more environmentally sound way, while empowering marginalized populations groups and supporting the local economy is impressive. "The gift that socially responsible business movements bring to us, is that they are leading by trying to do something, to risk, to take a chance, make a change – any change (Hawken,"1993, p 428).

Applications for Colwood

Colwood describes their OCP as the community's sustainability roadmap (City of Colwood, p 2-1). There are several objectives in the OCP that all three factions of the CEC model could be considered for including:

- Promoting urban agriculture in the built environment. (p 5-7)
- Promoting the delivery of skills training programs (p 6-7)
- Energy efficiency and green building development for new buildings (p 9-3)
- Develop sustainability guidelines and/or user resources (p 9-4)
- Attract targeted new businesses to locate in the planning area. (p 10-2)
- Improve the ratio between the resident labour force and jobs. (p 10-3)
- Promote economic activity in all sectors of the community. (p 10-5)
- Promote and support commercial agriculture as a viable business venture (p 11-3)

If Colwood were to consider adapting this model for their community the potential exists to create new business and local employment. This could translate into reduced travel time and costs for some residents, and reduce GHGs with shorter commutes. While the business model itself may be easily adapted, Colwood would need to investigate the methods used for providing these services. "Inappropriate infrastructures and/or technologies cannot not be imported without due consideration from one geo-region to another" (Hamilton, 2008, p 7)

Other examples of the fit include Solar Colwood. This project already has some similarities to the CEC Solar faction by taking 'action to create jobs, reduce GHGs, while learning how to best support the change and share it with others' (www.solarcolwood.ca). Colwood is also a growing community and they anticipate 17,000 new residents by 2028 (City of Colwood, p1-2). An industry such as the Green City Growers component of CEC fits with the agricultural objectives in the current OCP, and has the potential to provide local produce, and support the economy throughout the region for years to come. Being that Colwood is a much smaller city than Cleveland and the local university's housing is for short term residencies they may wish to explore the laundry service to determine if it is a fit, or if the water service/system can adapted to accommodate needs related to the projected growth in the region.

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