



First Nations Drum

September 2009

Volume 19 Issue 9



Spirit of the Thing

The art of Emily Carr
and Jack Shadbolt

Health Canada
Apologizes For
Sending Body
Bags To Native
Communities

Dr. Joane Car-
dinal-Schubert
Cancer Claims
Prominent Native
Artist

CANADA'S NATIONAL NATIVE NEWSPAPER

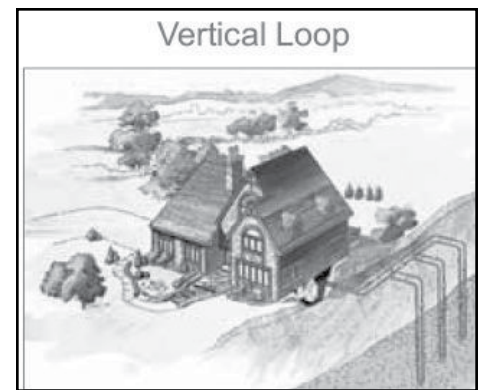
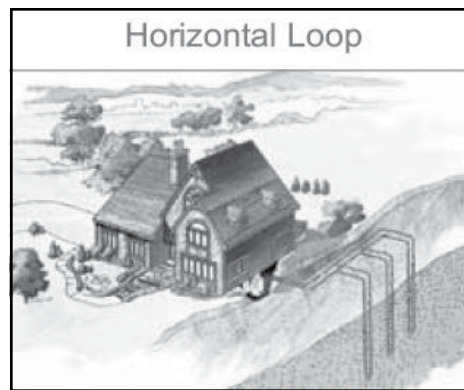
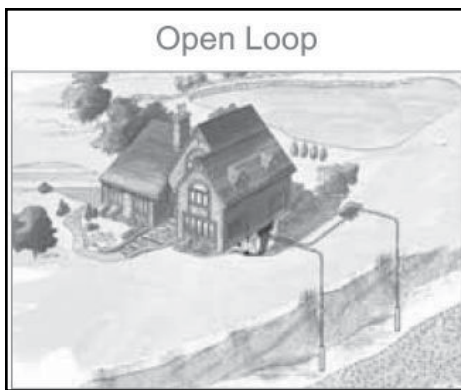
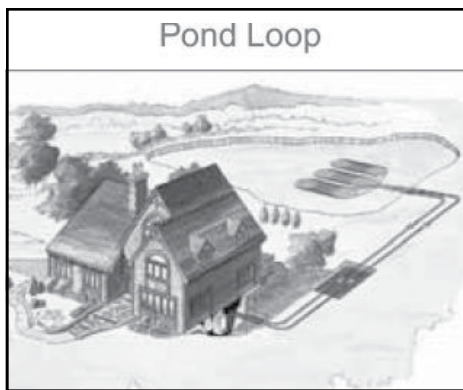


Dialogue on Development

Contributing Editor - Malcolm McGill

T'Souke Solar Panel

Geothermal Energy: A Sustainable Choice



They say using geothermal energy is like taking heat from the lap of Mother Nature. It's a pure form of heat, unlike combustion furnaces that exceed 180° of burning temperatures and literally fry the dust that is blown into the house. Geothermal extraction can come from creative thinking and new sources. According to NextEnergy's Dave Weber, the concept of geothermal energy is really quite simple. He explains, "A heat exchanger works the same as a refrigerator, and what it's doing is taking heat from the ground, and with a heat pump, it's sending heat through the house." A heat pump in the basement replaces any gas or oil furnace, and heat in the environment is absorbed via fluid-filled pipes.

"Geothermal is [similar to] solar energy because the sun heats the earth and pipes are extracting

the heat," says Dave. "The systems use 3/4 inch plastic pipe looped in an array that runs across an excavated area to create the energy source." Loops can be laid horizontally about 6-8 feet below the ground or vertically, which requires drilling to a depth of up to 300 feet. Loops can also be placed in ponds, lakes, or even in the ocean where they absorb environmental heat through the water. Factors such as ground conditions, local climate, and the size and heat loss of the building being fitted are used to determine the best type of array for the project and the number and depth of drilled holes required.

Current federal and provincial incentives permit up to a \$9,000 investment in green energy solutions by householders in some provinces, although different circumstances probably apply to Native reserves, where the Canada Economic Action Plan is currently underway. Horizontal ground loop arrays are placed below the frost line, usually less than 8 feet below an excavation depending on the climate. Dave says, "When the ground extraction is from an array of drilled holes, the depth is generally about 200 feet. Making a vertical array shrinks the footprint of the ground loop array, but it's more

expensive to go vertical because the drilling cost is higher than the cost of excavation." Dave maintains that despite the expense the process remains feasible. Specializations in the drilling equipment and process have brought costs down a bit. "Unlike a water well hole, you only drill about five inches wide," he explains. NextEnergy's geothermal heat exchange units carry a 10-year warranty on the machinery, one of the most comprehensive in the industry. Pipes generally have a 50-year warranty.

Sechelt First Nation installed an underground geothermal array to feed heat energy into five houses. Ground loops can also be pre-arranged in subdivisions by the developer. There are already geothermal subdivisions like Sun Rivers in Kamloops, BC. In the City of Vancouver, holes are drilled from 150 to 300 feet deep (at a cost of about \$15 per foot) to extract heat energy from the earth. One hole will typically supply 1,000 tonnes of geothermal energy, so four holes are required to heat and cool a 2,000 square foot house and supply hot water. The flow of the loop is controlled by a wall-mounted flow-centre monitoring system.

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We salute First Nations leadership showing in the Green Energy Dialogue underway in Canada



Canadian
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The Canadian GeoExchange™ Coalition acts as the industry catalyst to unite private and public sector stakeholders, and to expand the market for geoexchange™ technology in Canada. As the nexus of information, training, certification, industry standards and public awareness, our mandate is to work with stakeholders to build the necessary infrastructure to foster the growth of the Canadian geoexchange™ industry. For more information, visit www.geo-exchange.ca

The Global Quality GeoExchange Program® is a Canadian-made industry based program developed and designed with the goal of ensuring quality geoexchange installations in Canada. The program responds to requests from consumers, governments, manufacturers, and ethical industry members from all sides, over multiple years, to have a reliable method of ensuring that:

*systems deliver the benefits promised,
systems are safe, and safely installed,
designers and contractors are reliable, competent professionals, and will conduct their business affairs honourably,
designers and contractors will implement best practises wherever and whenever possible,
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The CGC was created in 2003 at the initiative of the Canadian Electricity Association (CEA) and industry stakeholders with support from Natural Resources Canada's (NRCan) Renewable Energy Deployment Initiative (REDI) to foster development of the ground source heat pump industry in Canada.

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Sound proofing around the heat exchange unit makes for a quiet that surpasses air blown furnace heat.

NextEnergy strongly advocates compliance with industry standards. According to Dave, his company's network of installers is setting the bar. "NextEnergy personally hand picks our certified contractors and puts

them through a rigorous selection process before we sign them on," he says. All are trained and certified by in-house experts. "These are all independent contractors working in a period of unbelievable growth of this technology," Dave says.

Ground Source Drilling Ltd. has expertise in geothermal drilling for residential and commercial purposes. The Kelowna-based family-owned and operated company serves

locations throughout B.C. and Alberta. General manager Lori Faasse notes the company specializes in geothermal drilling only, which allows them to remain extremely competitive in pricing. "Our drillers are certified through the BC Ministry of Environment, and all of our drill rigs are successful at working in many different mud and air rotary conditions," she says. "We have good working relationships with many regional heat pump installers." Ground Source Drilling can work with clients directly or through a contracted installer.

Drilling for an installation typically costs anywhere between \$8,000 and \$15,000 for a house, but can vary according to specific project needs or limitations. Lori says there are a few areas in the province where you can't do a geothermal installation because the cost of drilling becomes prohibitive, but usually the first test holes will prove it. In some areas, drilled holes go as far as 300 feet deep, but an average depth is about 200 feet. Ground Source Drilling does the drilling for Sun Rivers Construction who worked on the award-winning Kamloops subdivision. The innovative 'greening' of that community was possible in part by building geothermal heating and air-conditioning systems as part of house construction since 1999.

Progressive Geothermal Ltd. is a geothermal installation company that operates out of Kitimat, B.C. "I've been installing geothermal and

geo-exchange systems in the North West Coast for the past three years," says company owner Paul Silvestre, who installs Nordic Canadian heat exchange systems designed and built in Petitcodiac, New Brunswick. Paul took geo-exchange residential design courses at SAIT in Calgary. He took interest in the concept while deciding which heating method to install on his own property. "Retrofits are definitely do-able," he says.

During a site survey for a home, Paul takes into account the age of the home, the number of windows, wall thickness, etc. to determine the heating and cooling needs for the building. He typically consults an engineering firm to do calculations for commercial projects. A geothermal exchange system can use "closed" loops or "open" loops. Closed-loop systems can be laid horizontally and pump a solution (typically 25% methanol and 75% water, to prevent freezing) through the pipes, collecting environmental heat. An open-loop system uses two deep vertical wells. Ground water is extracted from an aquifer through one well, circulated through the heat pump, then returned to the aquifer via the second well.

In northern B.C. where Paul lives and works, many communities are diesel-dependent for their heat and electricity. A Nordic heating unit and geothermal exchange system can significantly reduce demands

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on a diesel generator. According to Paul, it takes about a day and a half to install an average "slinky coil" horizontal closed-loop system depending on the soil. "The loops of slinky coil use a lot less ground area, and reduced excavation brings down costs," he says. A properly coiled horizontal ground loop is very effective, and Paul notes slinky coils are a good choice when property size is less than 300ft by 100ft. A project on a small residential lot requiring multiple deep vertical-bore holes can be more expensive, as drilling depth varies depending on the availability of water. Multiple loops in a closed-loop system can be joined at a "header" with valves to control circulation. A 4-tonne system is large enough to heat/cool a 1500 square-foot house, and a Nordic unit usually costs between \$4500-\$5000. The most expensive part of a geothermal installation is the excavation or drilling process.

Even with the expense of designing and installing geothermal systems, the rising cost of hydro and natural gas (plus the cost of installing gas lines), as well as use of diesel or propane, should be factored into the investment. A geothermal system affords reduction in green house gases and a quiet way of heating. On the Pacific Coast, there are communities that can install ocean loops to extract heat from ocean water. "For some communities, there may be added cost because of government regulation and worries about losing the loops to an active fishery," Paul notes. Hartley Bay, an oceanside community, installed a horizontal ground loop system in their village on Hecate Strait, which has a fishery nearby.

Greenray Geothermal has been installing geothermal energy systems along the Sunshine Coast of B.C from Gibsons to Pender Harbour for the past four years. Joe Fleischer, a Next Energy dealer who became a certified installer with Canadian GeoExchange Coalition certification, says ocean loops are a popular form of extracting energy on the coast, providing home and hot-water heating, as well as air-conditioning in the summer. Heat extraction can also be achieved from small lakes or ponds, because the arrays are very compact. "10 feet by 25 feet of coiled pipe will supply 4,000 tonnes of extractable heat energy," Joe says. 1,000 tonnes of geothermal energy is the equivalent of 24,000 BTUs, enough power to make a tonne of ice in 24 hours.

The application of this energy source is becoming more common every day, and the new BC Ferry terminal at Departure Bay is heated and cooled geothermally using ocean loops. Ocean loops are affordable, unobtrusive, and highly efficient, extracting energy for minimal cost with a low cost of installation. A pipe array can be arranged under a dock or

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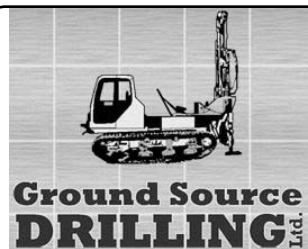
We salute the green energy innovators in First Nation communities like T'Sou-ke Nation and Tla-o-qui-aht in Tofino

Besides the obvious cost savings, the advantages of a geothermal system are:

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We salute the leadership in First Nations that is creating a Green Energy Dialogue across Canada

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Training Makes Solar Projects Solid

First Power Canada (the brainchild of Joe Thwaites and his team from Taylor Munro Energy Systems) brought to bear the training and skills development of the T'Sou-ke Nation in a Solar Demonstration Project on the southwest corner of Vancouver Island. The T'Sou-ke Nation installed an \$800,000 solar array community to create passive solar electricity and provide solar thermal heat, light, and power. During summer, the solar panels feed energy back into the BC HYDRO grid, making a valuable contribution to the community's economy.

Donna Morton is founder and Executive Director of the Centre for Integral Economics (CIE), in Victoria, B.C. First Power Canada is a partnership with Taylor Munro Energy Systems, a project that Donna says, "creates funding, finance, training, and other community supports to First Nation communities wanting to gain energy autonomy." The T'Sou-ke project is a prime example of the expertise in capacity building that First Power Canada intends to employ in other projects. This kind of energy development could go much further as Canadian First Nation communities with resource bases and energy demands look for green energy solutions.

"Our organization," says Donna, "is geared to work with First Nation communities, Aboriginal organizations, and other groups that face significant



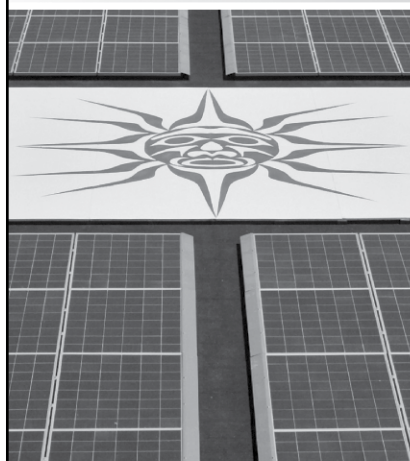
barriers to working in the trades." The CIE values immigrants and those who come from a background of poverty, regardless of their origins. Donna says, "We work with people who have special gifts that may fall outside the world of book-learning experience." She also believes CIE training works well for people who are jacks-of-all-trades. "We take people where they are and use whatever skills they possess in roofing, mechanicals, plumbing, carpentry, or electrical," she says. The CIE also has the flexibility to train anywhere and piggyback on existing training facilities, in addition to customizing

training to meet the needs of a community. Donna says, "We train by doing. It's tactical training with a lot of hands-on building, testing, and learning to fix and maintain equipment in the real world. It's a crash course with apprenticeship qualities."

Installing solar electrical and heating systems is an integrated trade. Donna points out, "There are not enough trained people in solar installation to meet the present demand, and we hope to incubate the capacity for starting businesses, doing this for

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Putting energy in the hands of First Nations communities.



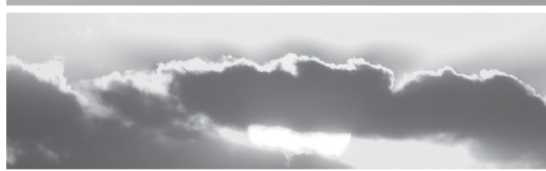
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— JOE THWAITES

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First Power partners Taylor Munro Energy Systems, a leading BC solar energy company and the Centre for Integral Economics, an award-winning community engagement charitable organization.

Our vision is clear and simple - to put energy in the hands of First Nations Communities



Solar Projects Cont from page

all kinds of reserves and bringing business to life in communities. Métis organizations and non-Status First Nation people and immigrant workers who come from a mix of ethnicities, our purpose is to cross the racial barriers.”

According to Donna, solar energy in North America is way behind developments in Europe. “They are 25 years ahead of us and have created a hundred thousand jobs,” she says. “Solar installation is proceeding in Canada but 10,000 installers are needed.” Education initiatives enable First Nations to enter the industry in a way that favours their respect for the Earth. “Solar harnesses the earth’s resources by not taking more than is required. It is a form of natural power,” says Donna.

First Power Canada designed their education initiatives from a series of pilot projects including the T’Sou-ke project. The company hopes to install 100 more systems this year, with the goal of reducing dependency on diesel or coal as a means to create electricity. Their focus is on solving energy problems organically and promoting training and installation together. Offering solutions in project financing and business development will help communities own their futures, undoing dependency and connecting them to the world.

NPCP-United is a company formed by George Ingham to



solar energy as an alternative form of energy production. In 2000, he decided to approach the International Brotherhood of Electrical Workers (IBEW) to propose making solar electrical arrays an electrician’s job. “They agreed,” he said, “and we became a manufacturer’s agent for SHARP products in conjunction with a program delivered through the IBEW. That arrangement allowed us to set up a business plan and structure a budget.”

From there, the NPCP approached IBEW locals in the USA and Canada. “We talked to union halls,” says George, “to power them up with solar electricity and hot water heat and teach members about the benefit of doing solar on their homes and cottages.” That program commenced in 2000 and was delivered in North America through New York in the USA and Vancouver in Canada. Vancouver does the purchasing, preliminary designs, and other work required to make an effective solar array that

install. The number and position of solar panels are determined by experts using satellite imagery and information about historical and daily weather patterns.

NPCP-United is prepared to design the structure for the union hall membership and do the homework on grants and rebates, yet George’s company has done much more. “We wrote the book on training for electricians on solar installations,” he says. His company works with the National Joint Apprenticeship and Training Committee (NJATC) of the National Electrical Contractors Association (NECA) in the USA and IBEW in Canada and USA to offer

solar installation training as certified installers. Electrical apprentices and journeymen in Canada and the US get commercial-grade certification from NJATC training and IBEW membership.

First Nation IBEW members are the primary beneficiaries of the NPCP-United program, but George wants to go further. “We have been to Massett in Haida Gwaii to speak to their community organizations about solar alternatives,” he says. “The wind people were at work up there at the same time, and there was a lot of

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We salute First Nations leadership that is showing in the Green Energy Dialogue across the land

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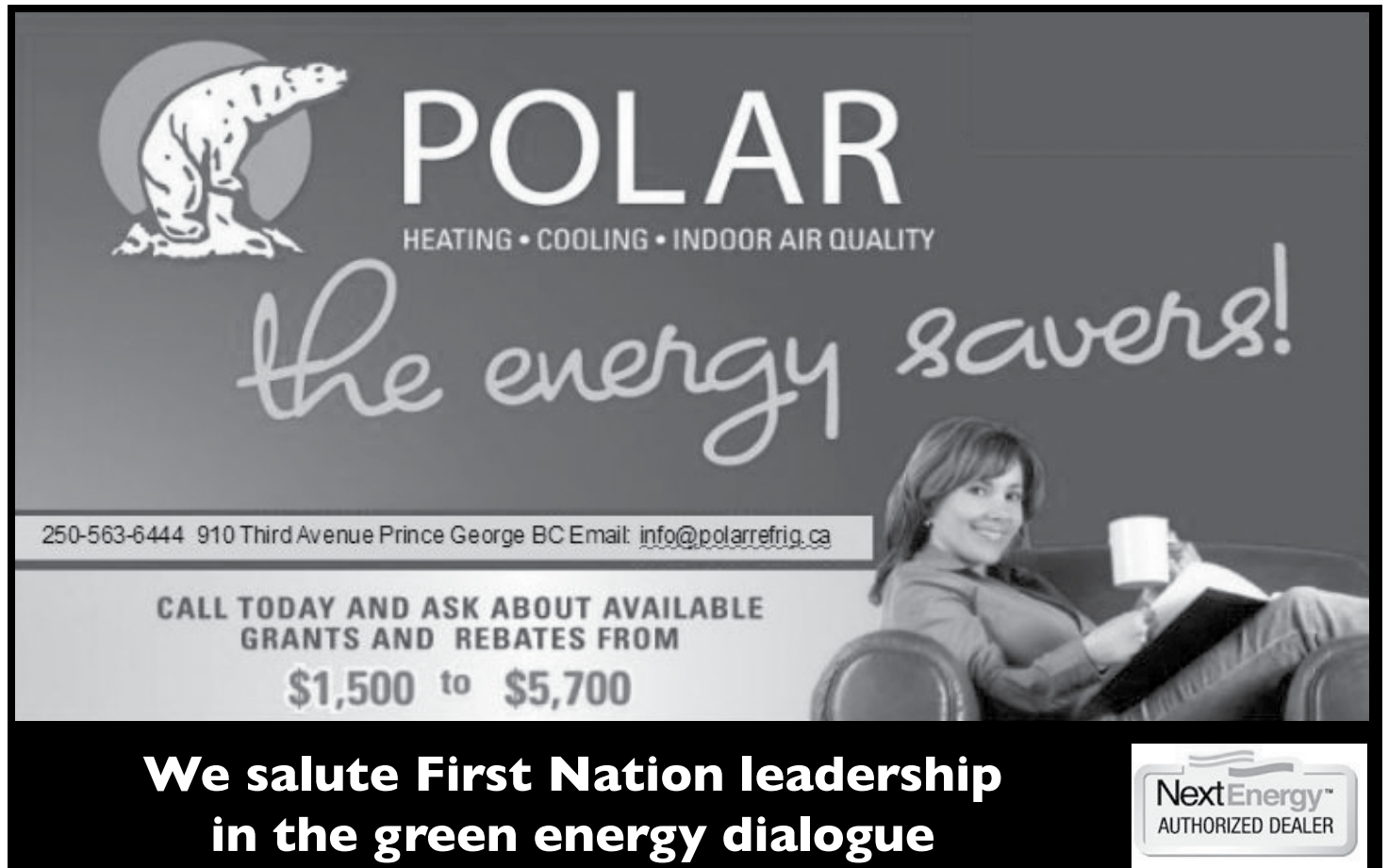
Solar Projects Cont from page

exciting discussion about alternative energy. The sophistication of our training should be employed by all kinds of First Nation communities in Canada because we have four solar experts on staff and the industry is growing rapidly." George says there is a momentary lapse in the American market for solar PV panels, which has temporarily reduced the price of solar panels, and George suggests consumers get in on the savings soon. He says, "The price will rise again. Meanwhile, we can design and deliver a solar system to a buyer within 60 days anywhere in Canada and the USA."

George is impressed by the T'Souke Nation's solar array, which is the largest in B.C. "That is a great project," he says. "A good array of solar, and the people can be proud of putting power into their community that returns power to the grid." He points out that British Columbia has very good solar potential throughout the province, but the specific conditions of a northern sunlight exposure requires a different arrangement than other locations. "We don't do solar in B.C. the same way they do it in California," George explains. "We face the sun at 45 degrees up here, which means there is the same amount of sunlight hitting the roof and the walls of a building. In order to avoid blockage of sunshine on PV panels by snow or excessive rain, the PV should be arrayed to collect the maximum amount of reflected solar energy from snow and water reflections."

Precise calculations and appropriate alignments must take into consideration snowfall, snow reflection, water reflection, and other factors. "It is incredible to realize that a solar array can obtain 30% more solar heat and electricity than its rating," George says. "Reflections off oceans

Cont on next page



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Geothermal Cont from page 27

pier, and the energy extraction process can proceed with water, methanol, ethanol, or propylene glycol flowing inside the loops. Joe says, "The ocean has so much thermal mass that it efficiently pays for itself."

Jim Croken has been installing geothermal and geoexchange systems in the Okanagan and beyond for the past ten years, and his son Nick's has taken interest in mechanical engineering as a result. Nick is a believer in the geothermal business, knowledgeable enough to write a scholarship-winning treatise about a unique geo-exchange project using heat

extracted from cow's milk. That energy was recycled to heat the barn, creating ideal conditions for milking in all seasons. Jim built his own house ten years ago when he was an electrical contractor. "The gas company informed me that it would cost \$10,000 to get a gas-line to my house," he said. Jim started doing research, and soon he was building an enterprise. Since then he's done over 200 installations from the Okanagan to Fort St. John, including everything from residential to agricultural projects like dairy barns and chicken coops, as well as 30-unit condominiums. Many of his business opportunities are off the natural gas grid in places like the territory east of Revelstoke. Contact Jim via email (jjcroken@nowcom.ca) for more information.

Solar Projects Cont from prev page

and lakes also provide continuous power bumps to the PV panels. With snow in the environment you actually gain more energy by putting the panels vertically." He suggests local knowledge of sunshine and reflected heat in the remote communities can be invaluable in designing arrays, noting that a community can get more out of their solar investment if it's arrayed to the greatest advantage. George says NPCP-United aims to teach, lead, and install solar arrays in all kinds of circumstances. "Take the Haida village of Massett, for example," he says. "One whole village is facing the ocean, and there is a good deal of reflected energy to be absorbed well above the PV panel rating normally expected." For more information about NPCP-United email chris@npcpuned.com or phone 1-866-983-2819.

IBEW 213's Harry Van Beest says the union provides certification for journeymen electricians in a solar installation training program. IBEW has approximately 5,000 members in the Lower Mainland and thousands of others across the country. "It's a

two stage course that provides the basics in a classroom followed by a practicum installation," says Harry. The course is practical and portable, able to be delivered through institutes like BCIT and the union hall. Harry believes the industry is going to expand soon because people are beginning to realize it's a myth that there is "too much rain in B.C. and too little sun in the north of Canada."

Harry says both homeowners and business owners can recoup the cost of the solar investment much faster than usually considered. He also notes that the certification level of training by the IBEW is second to none, surpassing the model of electrician's training development in the USA called forth by the NJATC. The IBEW met nationally in Charlottetown, PEI, this month. Harry said, "It was made clear there as well that scary installations are occurring out there and we need a national standard. Our members in the IBEW will equip qualified journeymen electricians with certified training based on a full day's instruction in theory and one full and complete installation under instruction and close supervision."

We salute First Nation housing managers and their Chiefs and Leaders for being community and capacity builders



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Pentlatch Seafoods Success Passing First Half Decade

Richard Hardy is the President of Pentlatch Seafoods Ltd., a company that grows oysters in Baynes Sound on the Inside Passage of the B.C. coast. These waters lie within the traditional territory of the Komoks First Nation of Vancouver Island. "We had quite a bit of hot weather this year, and the oysters get stressed out," Richard says. "The stress comes when they are moved from the warm water to the cold water then into the shipping container." Pentlatch Seafoods has been growing oysters and Manilla clams since 2004.

Pentlatch operations employ 20 people in the summer and a reduced workforce of 10 people in the winter. The company has seven shellfish tenures on 65 hectares of beaches within K'omoks territory. "It takes three to four years to grow the clams and one to three years to grow the oysters to market size. All of our product is grown intertidal," says Richard. "Rafting was never an option for us. We've been growing these products on beach since we began." Some of the clams require depuration during processing to remove ocean impurities in compliance with Canadian Food Inspection Agency regulations for Baynes Sound harvests. According to Richard, commitment to clean water quality is a priority for the company through its Environmental Stewardship program.

Pentlatch Seafoods Ltd. became incorporated in March 2004 with sites located in the Comox Harbour, Royston, and Baynes Sound. To ensure future success, Pentlatch Seafoods Ltd. has deployed 41 million clam seeds and 3 million oyster seeds over the past 3 years. Pentlatch Seafoods is also investigating geoduck clam aquaculture to expand their business, hoping to secure five leases to grow and harvest geoduck. Richard says, "It will mean more jobs for K'omoks and a greater capacity for further economic development for the community." The company may also consider future culturing potential for such species as mussels, cockles, scallops, and abalone. Future consideration may also be given in examining the potential for culturing such species as: Mussels, Cockles, Scallops and Abalone.

Richard worked in the lumber industry for many years before he made a career switch at an opportune time when the chief and council were seriously examining their seafood options. "It's nice to be involved. At the start we were assured of about a ten percent chance of success," he laughs. His award-winning company now enjoys a great presence in the Comox Valley and a lot of support from the industry.

Keith Reid is general manager of Stellar Bay Seafoods, an oyster processing company on the Inside Passage. The waters of Desolation Sound and Baynes Sound have proven to be exceedingly productive for the growing of oysters. Some companies have oyster rafts on sites developed over the past 20 years, producing high quality oysters for the international market. Oyster rafts are small intrusions

into the natural environment. More importantly, oysters and mussels make ecological sense in an ocean because they filter harmful algae and red tide blooms.

Stellar Bay processing and Odyssey Oyster Farms (an affiliate) work in the Baynes Sound area close to Vancouver Island along the Georgia Strait. It is a lengthy neck of water with a long history of growing clams and oysters. In recent years, the proliferation of floating oyster rafts has drawn criticism from the coastal population. Keith put his company

on a unique path by cooperating with communities to establish other flourishing oyster developments inside of Baynes Sound, including Pentlatch Seafoods Ltd. owned by K'omoks First Nation.



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Safe Drinking Water Can Be Aligned with Housing Development Strategy

There are too many examples out there of failed alignment between the basic human need for safe drinking water and housing development strategies on First Nations sites. On one extreme are high density, urban style developments that nobody wants to live in. On the other extreme are contaminated wells and cisterns. According to Jim Bergwall, Sales Manager of Tanks-A-Lot Ltd., an Edmonton-based manufacturer of concrete tanks, "We have supplied thousands of cisterns to First Nations and Metis sites, and there are best practices that can be followed for safe drinking water in cisterns. Better yet, there are development strategies to evolve the community and individual infrastructure towards city grade water safety while preserving culturally desirable housing units."

Many First Nations sites operate a community water treatment plant and haul water to cisterns at individual home sites. Although contamination of cisterns is not common, the most frequent causes are faulty installation such as failing to sanitize the tank before using it, poor housing construction such as driving an excavator over the top of the tank to finish the landscaping, vandalism such as foreign material being dropped into the tank, and bad water delivery practices such as dirty hoses and filling to the brim of manway extensions. Many communities have considered putting in full pressure water distribution pipes as a way to get rid of water contamination by getting rid of the cisterns. The problem with that idea is the unaffordable cost of constructing pipelines for low density development and the ridiculous waste of constructing pipelines to clustered subdivisions with no homes.

"There is another way," says Bergwall. "Instead of getting rid of the cisterns, fill them from an affordable low pressure water distribution system and seal them off from the surrounding ground by using a 'microcrystalline sealant'. Low

pressure water distribution pipe is a fraction of the capital and operating cost of full pressure systems. The related cisterns have two brass fittings – one fitting receives the incoming water, controlled by a float valve; the other fitting has the traditional role of connecting the cistern to the home. These systems have been proven out for years in locales such Paddle Prairie Metis Settlement in Northern Alberta and Strathcona County near Edmonton, Alberta."

Although concrete has been a proven material for holding and transferring water for thousands of years, microcrystalline sealants are a new method for filling its microscopic gaps and ensuring that micro size sediments, contaminants, and bacteria cannot penetrate the tank wall. "Tanks-A-Lot has recently introduced a new MC Series of cisterns, complete with two brass fittings and Xypex or Kryton brand microcrystalline sealant mixed right into the concrete. It's a terrific solution for forward-looking Housing and Infrastructure Directors. You can just plug off one of the brass fittings for now but be



Tanks-A-Lot MC Series Cistern protects against contamination and ready for connection to low pressure water supply line

completely ready for a low pressure water line in the future. At some sites you could even stub a connection out to the edge of the lot where the future water line would be located."

The MC Series of cisterns by Tanks-A-Lot are low-profile, one-piece tanks up to 2200 gallons. The low profile means the installation requires shallower excavation – less

chance of digging in water saturated soils and less chance of the tank sitting in the water table. The one-piece construction means that no site assembly of the tank is required – less on-site labour and no seams in the tank wall.



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First Nations And The Evolution Of Socially Responsible Investment

By Tony Edwards

The world of business has come a long way since the days when European traders and settlers ransacked Native lands for profit. Even a short 50 years ago, business seldom paused to consider its impact on the land, air, and water, or on the human rights of the communities they mined and fished and logged.

So what happened to change this miserable situation and allow the seeds of “socially responsible” or “ethical” investment to be sown? Well, the status quo of businesses running rampant over the rights of individuals, communities, and nations, was not seriously challenged until the international campaign against Apartheid in South Africa. The effectiveness of boycotting businesses in the region set the stage for the integration of social and environmental concerns with strategic business and investment decisions.

Canadian First Nations should take notice of what happens in the international business world in places like South Africa or Chile, where Canada’s own Barrick Gold has proposed to mine for gold under a local mountain glacier, one that supplies drinking water to indigenous peoples and other residents of the area. The behaviour of Barrick Gold in Chile sets precedents for how they act elsewhere—perhaps on your ancestral lands. Do First Nations communities want to collaborate with a company that digs up Chilean glaciers, but promises not to do the same in our own territory? Do global issues such as climate change not affect First Nations in a most direct way? What

about the depletion of traditional native resources due to the ravenous appetite of foreign corporations?

The concept of sustainability does not need to be explained to First Nations populations. People may call it something different, but the preservation of culture and environment has always been a vital part of First Nations values. When it comes to the management and stewardship of Native assets, social and environmental impacts cannot take a back seat to profit. It would be like the Vatican investing their funds in corporations that make birth control pills, which was the case until the Vatican hired someone to correct that problem.

There are many grey areas and overlapping interests when it comes to determining just what constitutes an ethical investment, or more specifically, an investment that doesn’t compromise First Nations’ traditional values. Examples are the controversy over oil sands development on traditional lands in Alberta and the development of river power in BC, where various interests cannot be neatly satisfied. But sustainability needs to be a key concept in development, for short-term non-sustainable job creation does little to address long-term native issues of preserving culture and wisdom and stewardship of the land.

Anthony “Tony” Edwards is an Investment Advisor with First Financial Securities in Courtenay, British Columbia, home of the K’omoks Nation. He specializes in socially responsible investment, and works with First Nations to ensure traditional values are not lost in the pursuit of economic gain. Contact Anthony Edward by email (tony@ethicinvest.bc.ca) or phone 250-898-9973.

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Geothermal Energy and Prefab Housing Components Enhance Prince George's Friendship Centre

Building much-needed new homes in remote locations is a challenge for many First Nation communities. So much so, that many are now pursuing the idea of using factory-built, precision-fit wood framing components to quickly build more and better quality homes. Winton Global Homes (based in Prince George, BC) operates one of the most technologically advanced roof truss and wall-panel manufacturing facilities in Western North America. Delivering factory-framed housing components to First Nation communities in order to help alleviate the housing crisis has become a key focus of the company.

Marlene Fehr-Power, General Manager of Winton Global Homes in Prince George, has noticed that over time multi-family dwellings have become more popular for forward-thinking First Nation communities, and the demand for housing is also changing. Marlene points out, "First Nations have a growing number of elders in their communities and these folks often require a form of housing known as Visitable Housing." In simple terms, a Visitable Home provide greater accessibility by having no steps at the front entry and a bathroom on the main floor that incorporates a 3-foot-wide door. "Visitable Homes enhance inclusion and participation in community life," says Marlene, not to mention the advantages of easier long term care.

Winton Global Homes delivers home packages as far as Manitoba, and to the Pacific Northwest in the US. The company also produces flooring systems, pre-built wall panels, and engineered trusses for major urban projects as well. They recently provided such components for the Friendship House in Prince George, B.C. The house stands on the outer fringe of the city's downtown core. It has four storeys and 30 suites with lots of bedrooms and provides a warm and safe home for many disabled and displaced people in the city.

BC Housing policy encourages the 'greening' of new buildings, and General contractor Vanmar Constructors helped build the Prince George Friendship House, which includes heat and hot water from a vertically drilled geothermal array.

Art notes that BC Housing has a mandate to design their buildings with energy alternatives; Vanmar works with geothermal, solar, and air-source heat pumps. Art Van Meer says, "The [Friendship House] is built on top of a whole series of vertical loops, header, and piping leading to and from boilers. The heat is found in the conductivity between soils and the drilling is done to tune in and make contact with the earth's temperature." Art says boilers are needed to 'top up' the heat and over 400 individual wells were drilled on this project. "It's a costly system," he says, explaining that the new friendship centre currently under construction in Williams Lake sits above an aquifer, allowing much easier access to the ground heat source. For that project, 8-inch holes were drilled down to the aquifer to pump the water up and run it through a heat exchanger. It is less costly and a lot simpler to extract ground heat directly from the water source than to build a vast array of pipes running fluids through to capture ground heat.

Art says geothermal heating is becoming quite popular. "Each project is different but geothermal can be very expensive," he says. "It's based on the conductivity of the soil and this conductivity is the biggest variable. It calls for a lot of testing and investigation to determine the scope of the extraction process required." The amount of drilling required is variable, and there is a lot of up-front cost. The measure of capital cost versus operating costs becomes important. In a situation like Vanmar's construction in Prince

Cont on next page



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Cont from prev page

George or Williams Lake, Art says “the idea is to pay back the capital cost of the geothermal installation within ten years of the project.”

Vanmar Constructors work in a variety of contracts but the company specializes in housing, multi-family buildings, and care facilities, working all over B.C. including Vancouver Island. Art notes the geothermal solutions are proliferating in B.C. and the province has many contractors and qualified installation personnel. “Geothermal heat exchange systems are popular energy alternatives that we’ve been installing it under high rise buildings in Vancouver,” he says. “We drill the vertical wells and extract the earth heat for the buildings. It’s a big savings on the hydro bills and geothermal meets the green energy objectives being encouraged by public policy.”

Marlene says that factory-framed, panelized, or packaged homes “shine as housing solutions in remote areas.” Many of the 700 Indian Reservations in Canada are remote and housing construction can cause difficulties when the planning isn’t perfect. But now, Winton Global Homes can deliver a new home package directly onsite requiring nothing but assembly. “It’s all about controlling your costs,” Marlene says. “For people working within a budget this is the ideal solution.” Home parts are all packaged up and delivered with windows, doors, siding, and roofing, helping builders keep a tight reign on construction costs. This kind of cost control and efficiency applies to single family dwellings, multi-family projects, and two-storey buildings as well. “We help communities build the homes they so desperately need. From design through materials selection through to complete assembly instructions and project coordination,” says Marlene. The choice and design of a community’s homes can be done via telephone and e-mail.

The factory in Prince George designs, builds, and ships floor systems, numbered wall panels and engineered trusses directly to site for assembly. Once the basic outside portion of the home is built, the inside work proceeds. “Follow the numbers and shoot the nails,” says Marlene. “The personnel required to build the home only need a qualified carpenter on-site to help guide the process. And, it goes very smoothly. The panel-built home is quickly erected and trades do the rest.” Once the pieces are in place, next steps include installing the electrical, plumbing, and heating systems that finish the new home in preparation for move-in day.

Winton Global Homes has been constructing panel-built housing for the past 30 years, previously doing business as Spruce Capital Homes. A comprehensive selection of affordable new home designs can be seen at their website (www.wintonglobal.com). Contact company representatives in Prince George at (888) 296-8059 or email (homes@wintonglobal.com).

First Nations Drum

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We salute energy initiatives by First Nation leaders and IBEW members of Aboriginal ancestry in Canada

