



# Reflecting on the BEST Year for Bicycle Education

By Justin Quigley and Heather Mitchell



PHOTO: LIEF LARSON

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**IN THE FALL OF 2016**, the Green Action Centre in partnership with several organizations embarked on an ambitious and exciting new bike education pilot program with the Seven Oaks School Division. Proposed originally in late 2015 by Bike Winnipeg, the concept was initiated by a group of engaged stakeholders with the intent of developing a youth bicycle education program that could be adopted by schools province-wide. This initial meeting was timely, as Manitoba Public Insurance had also recognized a gap in bike training for children aged 9 to 14, and was keen to support the initiative.

In February 2016, a smaller working group of representatives from Bike Winnipeg, Manitoba Public Insurance, the WRENCH, and the Active and Safe Routes to School (ASRTS) Program at Green Action Centre was formed. Through this partnership, and with funding from Manitoba Public Insurance, the Bike Education and Skills Training (B.E.S.T.) program was born.

Early on in the process, the Seven Oaks School Division expressed strong interest in supporting the project. Though many other school divisions had also expressed interest in piloting the program, Seven Oaks School Division was ultimately chosen as the host school division for the pilot project due to their smaller size, and the direct engagement of upper administration. Without the direct support of their Superintendent, this program could not have gotten off the ground as quickly as it did. At an extremely rapid pace, the program and curriculum were developed and approved in late August for program delivery in September of 2016.

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## Executive Director's Message

By Karen Peters

**AS WE PREPARE** for the end of winter and the start of spring, we want to give thanks and acknowledge our supporters.

Manitoba Eco-Network recently held our annual Reel Green Film Festival fundraising event with the assistance of sponsors such as The Assiniboine Credit Union, Tire Stewardship Manitoba, and Stantec. We had inspiring films tell stories of action, conservation, livelihoods, and respect. This year, to highlight the issue of fair trade fashion, we featured three wonderful local fashion designers with a short fashion show using models from our member agencies. We'd like to thank Andreane Dandeneau and Celine of Voila Designs (andreanne@voiladesigns.ca and celine@voiladesigns.ca) for choreographing, organizing and producing the show. Aveda Institute Winnipeg did the hair and make-up for the event as well as wonderful pampering in the VIP lounge. MCC held a pop-up thrift store on site, as part of recognizing the role of fair trade or upcycled fashion in the environment. Bela Belas (<http://www.bellabalas.com/index.php>) and Lennard Taylor (<https://lennardtaylor.com/>) contributed time and fashion to our event. Thanks also to VIA Rail for donating a trip for our live auction! Thanks to Wood Anchor for the donation of a beautiful bench for the live auction as well. Many thanks to all!



“ This year, to highlight the issue of fair trade fashion, we featured three wonderful local fashion designers with a short fashion show using models from our member agencies. We'd like to thank Andreane Dandeneau and Celine of Voila Designs (andreanne@voiladesigns.ca and celine@voiladesigns.ca) for choreographing, organizing and producing the show.

We were so honoured to be able to recognize some wonderful people who work for the environment here in Manitoba with the Anne Lindsay Protecting The Earth Award, aka, The Earthies. Many thanks to Dr. Jon Gerrard, this year's Earthie Award recipient, for letting us in to see the work that he has done with wetlands, Lake Winnipeg, and eagles, over the course of his work and career. We learned of the work of Dr. Gordon Goldsborough and the Manitoba wetlands, Michael Lee with the Manitoba Hydro's Powersmart Program, Dave Pancoe with The Forks Zero-Target initiatives, the Prairie Climate Centre, Wan Ni Ska Tan Hydro Alliance, and Bridging the Gap. We are looking forward to celebrating Manitobans' achievements this year and the many years to come. And, as always, we are excited by new developments and projects that we are involved in – we can't wait to share our work with you! Please look for updates on our website and Facebook page.

Thank-you! 

*Karen Peters is the executive director of the Manitoba Eco-Network.*

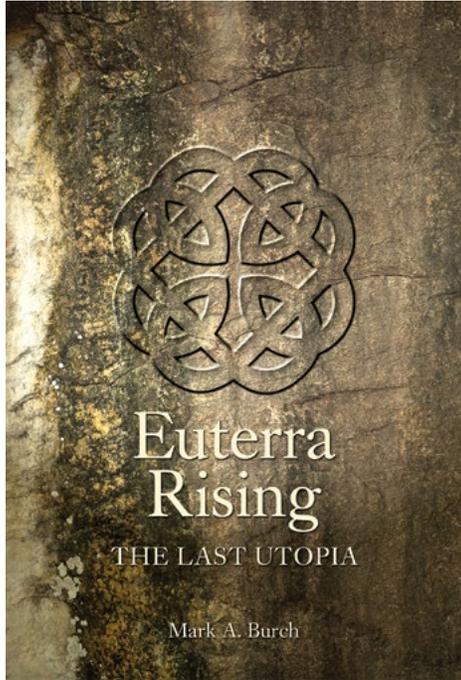


## Featured Book Review

### *Euterra Rising: The Last Utopia*

Author: Mark A Burch

Publisher: Mark A. Burch, 264



COVER DESIGN: TRACEY O'NEIL, SIMPLELIFEDESIGNS.CA

**IMAGINE WHAT YOUR LIFE** might look like if the electrical grid just stopped working. How would you adapt? How would society adapt? Is there a better, more sustainable way for us to live?

*Euterra Rising: The Last Utopia*, Mark Burch's debut work of fiction, is a utopic novel that explores exactly that. The story alternates between two time periods: the very near future, 2027 CE, and the more distant 2298 CE or the 276th year of the Euterran Age.

In 2027, with an unexplained failure in the electrical grid, society is thrown into chaos. Without electricity, cellular networks, satellite communications, public services, and commerce all grind to a halt. A small group of people, led by Beamer Farris, set out to embrace this opportunity to imagine a new way of living. They recruit others with a similar vision and with a variety of skill sets and set off to create a self-sustaining community.

The opening chapter of the book paints a picture of a utopic society that exists almost 300 years later. Euterra is a complex society, but one based on living simply with less. Euterrans strive to live in peace with each other and nature. During the years following the

*continued on page 11 >>*

For more environmental event listings see our website calendar at [www.mbeconetwork.org](http://www.mbeconetwork.org).

April 7

## Green Drinks

Working, volunteering, or interested in the environmental sector? Join us for Green Drinks – a monthly networking get-together hosted by the Manitoba Eco-Network for enviro-folks to connect.

April

### 1 **Manitoba Energy Justice Coalition**

Manitoba Energy Justice Coalition (MEJC) is launching a leadership training program for people interested in learning more about community organizing for climate justice.

### 26 **Radical Reels Tour**

*Gas Station Theatre, 445 River Avenue, 7:00 pm*  
The best high adrenaline films from the Banff Mountain Film Festival are coming to Winnipeg on April 26.

### 26 **Canada Green Building Council**

Tour of LEED Platinum Amber Trails School & Lessons Learned from the Public Schools Finance Board.

May

### 6 **Angela Davis: Race, Resistance & Revolution: Freedom is a Constant Struggle**

The Canadian Centre for Policy Alternatives-Manitoba (CCPA-MB) – In partnership with Black Space Winnipeg and Queer People of Colour Winnipeg, brings to Winnipeg world-renowned activist, academic and author Dr. Angela Davis this May 6, 2017.

### 23 **The Canada Green Building Council – Manitoba Chapter**

Build it Green Speakers Event and Reception.

### 28 **MEC Paddlefest Winnipeg 2017**

**Location:** *FortWhyte Alive.*

MEC Paddlefest is a celebration of all things paddling related; we bring all of Manitoba's major paddling players together to share our love of the water with the greater Winnipeg community. It is a festival with something for everyone and features informative clinics in Kayaking, Canoeing, and SUP, kids' activities, paddling demos, a place to swap your gear, the latest gear and gizmos from paddling retailers and manufacturers, community paddling groups, and gear giveaways.

June

### 4-10 **Commuter Challenge**

The commuter challenge is a friendly competition between Canadian cities and workplaces that encourages Canadians to leave their cars at home. Walk, cycle, carpool/ride-sharing, take transit or telecommute. The commuter challenge celebrates active and sustainable transportation.

<https://commuterchallenge.ca/>

### 5 **Growing Mushrooms with Tom Nagy**

*Assiniboine Park Conservatory*

Join mushroom growing enthusiast Tom Nagy as he illustrates the basic techniques that you can use to cultivate gourmet and medicinal mushrooms in the comfort of your own backyard

### 7 **Clean Air Day for Schools 2017**

The Green Action Centre invites you to join us at Assiniboine Park with your students to celebrate a job well done during Bike to School Month.

Bike with your students to Assiniboine Park's Lyric Stage for a series of kid-friendly, interactive stations, such as Flaming Cheetahs Obstacle Course, WRENCH Repair and Bike Education Station, Freedom Concepts Bike Demo, Air Quality Measuring station, Bike Blender Station and many more!

<http://greenactioncentre.ca/event/clean-air-day-for-schools-2017/>

### 17-23 **Bike Week Winnipeg**

Save the Date! Visit the Bike Week Winnipeg website to learn more about their amazing events and activities for you and your family!  
[www.bikeweekwinnipeg.com](http://www.bikeweekwinnipeg.com)

### 20-22 **Save the Date!**

The Manitoba Conservation Districts Association is co-hosting a Conservation District (CD) tour with the Assiniboine River Basin Initiative and the MB Forest and Grasslands Association.



<< continued from page 1  
Bicycle Education...

**What is the B.E.S.T. Program?**

Over the last several years, cycling has become a more popular form of exercise, recreation, and transportation. Though there are more cyclists on the streets, most riders, especially younger children, do not have the knowledge, skills, or confidence to cycle safely. In particular, they lack knowledge of road rules, responsibilities as a cyclist, basic bike maintenance, and how to ride safely in traffic.

Due to this lack of knowledge, people of all ages have low cycling confidence and avoid cycling altogether, or they are cycling in an unsafe way. This pilot project aims to provide school-aged children the knowledge and experience they need to safely ride to school and in their community, as well as the environmental and health benefits associated with active transportation modes.

The program was designed to meet the existing objectives of the Manitoba Physical Education and Health Education Curriculums for students in grades 4 to 8, through a combination of work in the classroom and hands-on instruction in bicycling skills and knowledge outside of the classroom. A student having taken five years of training – grades 4 to 8 – would receive a total of 20 hours of bike safety training.

The Bike Education and Skills Training program is the first multi-grade, multi-year bike education program of its kind in North America. Further, the program is unique in that it relies heavily on on-road training components, with students actively engaging with real traffic and infrastructure conditions. Students learn, with the assistance of the B.E.S.T. program coordinator and schoolteachers, how to properly ride in on-road conditions, learning valuable skills such as hand signals, shoulder checking, lane positioning,



“ The BEST pilot project aims to provide school-aged children with the knowledge and experience they need to safely ride to school and in their community.

and more. The program also provides an on-road maintenance component, teaching students how to assess whether their bike is roadworthy, what the parts of a bike are and how those parts operate.

**How Does the Pilot Program Work?**

The program was developed as a three-year pilot in a smaller sample size of schools, with four schools benefitting from the Bike Education programming and four schools of similar sizes acting as control schools. The program thus far has reached 700 students and will be rolled out to

four new schools in the spring, with a refresher course for the students that participated in the program in the fall of 2016. This will be repeated for three years, with assessment and expansion planned to follow.

The intent is to create a program that can be rolled out to schools across Manitoba and planning for how to execute this is occurring presently. The committee’s hope is to see a program that is incorporated in every school across Manitoba that trains and prepares students from Grade 4-8 for safe and fun on-road bicycling. This is an exciting opportunity for Manitoba to place itself on the map as a leader in training youth on proper and good cycling behaviour.

Evaluation is occurring throughout the program’s execution. Students and parents are given pre- and post-program surveys that review their understanding of bike-safety and knowledge, as well as their current transportation habits.

**Looking Forward**

The plan is to roll out this program province-wide and potentially beyond, so the program is currently undergoing development of content that will allow for these skills and education to be passed along to as many schools as possible quickly and efficiently. The direction so far includes “Train the Trainer” material, and a push to incorporate B.E.S.T. program information and education into the Phys. Ed. university-level curriculum. We are also reviewing the current curriculum, after its first execution in the fall and plan to incorporate more material into it, including on-road emergency bike maintenance training, first-time rider programming, and programming specific to children with physical disabilities.

This is an exciting opportunity that Green Action Centre is proud to share with Manitobans. We are looking forward to the spring as we roll out the program again to students, and especially looking forward to being able to provide this training to students across Manitoba. If you have any questions, please don’t hesitate to get in touch at [asrts@greenactioncentre.ca](mailto:asrts@greenactioncentre.ca)

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A newsletter for collaborative creatives researching and learning to transition to sensible lifestyles and smaller carbon footprints within climate resilient, food secure communities.

*What will we create together?*

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Meet people from the first issue!  
**Launch Party**  
May 20 @ 3 PM  
Sam’s Place  
159 Henderson Highway

<http://ecovillages.ca/>



# OP-ED: A Plea for the Animals

## Economic Drivers of the North

By Gloria Taylor

**THEY WERE CHAINED TO THE TUNDRA BY THE TENS**, a living exhibit that looked to be well over 100 dogs. The northern dogs at Mile 5 outside the Town of Churchill could neither run away nor take refuge from any predator that happened by. There were plastic boxes laid out over a wide area, possibly to hold food. But there was no shelter for the dogs in a climate that sometimes dipped down to -50 C on the windswept tundra.

That was the sight that greeted me in early fall 2009 when I visited northern Manitoba to write a story on the Port of Churchill for a northern publication. I later learned that a local resident owned the dogs, which he allowed to be approached by polar bears for the sake of visitors. During bear season in the fall, tourists, photographers, film crews and others would attend to view, photograph or film the interaction between the animals.

An outside filmmaker produced a documentary, *The Last Dogs of Winter*, that included the dogs and the owner, which was still available for sale last fall online in DVD form. More recently, the OLN television network produced a television series called *Polar Bear Town* that clearly shows the interaction between the species. Meanwhile, last November, CBC posted a story to its website about a polar bear that was cozying up to a dog in northern Manitoba, a story with a discouraging second chapter.

The story “had legs” as some people say, and the story and photo of the friendly inter-species moment was picked up by the Washington Post among other media outlets. Later last fall, CBC website posted another story about a dog and bear, but this one was decidedly less sweet. A polar bear had eaten a dog. It was not necessarily the same bear or dog. Nevertheless, it was not a great follow-up to the headline-grabbing story and photo of the friendly bear and dog that had “gone viral.”

Of course, it does make sense that a polar bear would eat a dog in the fall when it is hungry. And, it does make sense that a polar bear could be hungry in the fall. There are plenty of reports



PHOTO: BOBOSH, J. FLUCKR



PHOTO: GLORIA TAYLOR

“ They were chained to the tundra by the tens, a living exhibit that looked to be well over 100 dogs. The northern dogs at Mile 5 outside the Town of Churchill could neither run away nor take refuge from any predator that happened by.

by climate scientists that the ice is taking longer to harden in the north, meaning the bears may have to wait longer to get on the ice to hunt seals, long a standard staple of the bears’ diet. In the meantime, they have to eat what is available.

It is not simply that a dog lost its life in this encounter, but chained up dogs and roaming bears have for years been shown interacting in various clips published on online video sites and elsewhere as part of the activities that take place during the thriving fall tourism season. There are many legal questions that surround this dog/polar bear interaction, but it is only part of a broader issue: Are the animals being treated fairly in the face of what is surely considerable economic gain to the individuals and companies involved in this northern Manitoba tourist trade? In a past court case, (there is a public court record) one dog owner admitted that he had lost more than 70 dogs to predators over the years.

Polar bear season means a boost to the local economy. It draws many visitors to northern Manitoba who spend on everything from travel costs to lodging to guides. And, as the OLN

series clearly chronicles, guides work hard to get their clients close enough to the bears to photograph. A bear resting on the tundra will push his body up and trundle on when it feels that people are getting too close.

Is this any way to treat a polar bear? I should say that I am not against photographers or companies that want to make money. The animals that the tourism trade depends upon should just be protected in the process. Is it necessary to use the animals this way for the sake of tourists, photographers, etc.?

### Questions and more questions

As a long-time Winnipeg writer and editor, I can’t begin to claim more knowledge of the North and northern animals than the biologists and researchers that go to bear country, or the conservation officers and law enforcement officials who work in the North. However, the questions surrounding animal tourism should be of concern to every Manitoba and Canadian resident who boasts of having a conscience.

What protections exist for both bears and dogs in the North, particularly during bear season? Are the laws sufficient? Are they being enforced?

As a layperson, I can only ask those questions, but I have sent a letter to both Premier Brian Pallister’s office and Prime Minister Justin Trudeau’s office in an attempt to get those answers, and eventually, to have whatever actions taken that would better the lives of the animals.

In the meantime, I can only hope that other Manitobans will take an interest in the welfare of the animals in the North – perhaps those who are better situated than myself – to ensure the best possible conditions for these economic drivers of the North.

*The opinions expressed in this article are the author’s own and do not necessarily reflect the opinions of the Eco-Journal or the Manitoba Eco-Network.*



# 21st Century Homesteaders

## Launching a Manitoba Earthship

By Jacob Buller

IN 1972, architect Michael Reynolds produced his first Earthship, a home that requires no connection to public utilities. Partially built out of recycled materials, Earthships are designed to be entirely self-sustainable. Interior gardens grow food, special systems collect rainwater, gray and blackwater systems hydrate the gardens, and solar panel installations generate electricity.

Earthships are built using thermal mass to retain heat; the thermal mass is most often tires pounded full of dirt or empty beer cans cemented over. South-facing glass walls allow passive heating and cooling. Earthship design changes the direction of human effort - resource collection is no longer external to the house, but built-in, self-sustaining.

Husband and wife team Nicole Bennett and Kris Plantz recently brought the Earthship vision home to Manitoba with the 'barn-raising' of their new home.

"Michael Reynolds comes across as a very charismatic person in his Earthship documentary *Garbage Warriors*. His concept of "Comfort in Any Climate" was very appealing. I think the idea of trying something entirely different that drew us in. Could we actually have a house in this climate that did not require any supplemental heat? We were going to find out."

"When we decided to build an Earthship we knew we would want to be off-the-grid," notes Nicole. "But what does off-the-grid mean to us? It meant supplying our own electricity and a way to survive without relying on outside sources. We still wanted (and have today) internet and phone line."

"For a few years we had the great "land versus plans debate." In the end, We needed to find property first. After writing out the must-have (trees, acres, distance to the city) and nice to have (barn, grid access, approach) lists we started looking. When we found the property, we got serious. That was the moment that we realized it was going to happen and that our lives were going to actually change," observes Nicole.

"But before we did any land shopping Kris talked with various Building and Planning Offices in Rural Municipalities. We needed to know that the RM would be friendly to our project before we moved forward. We lucked out that they were all very supportive."

"We weren't prepared for how long it actually took, even though we had anticipated it would take more than a year. We started building July 1, 2012 and moved in September 2013 to a partially finished home that still did not have power or running water! Kris continued working on our place and the majority was completed by April 2014. We are still working on stuff even today," admits Nicole.

"The learning curve was very steep. We both learned unusual building techniques like how to properly pound and place tires, build can walls, make bottle bricks, mix and apply plasters, and so much more. Kris learned basic electrical, plumbing, framing and other woodworking.



Husband and wife team Nicole Bennett and Kris Plantz with their daughter, Bridget May Plantz.

Building this Earthship became a twenty-first-century barn-raising of sorts. "We never would have built this home without the help we got from so many volunteers who heard about the project," says Nicole.

"There were over 100 volunteers in the first year who mainly helped pounding tires. We also had a journeyman plumber & apprentice that installed all the plumbing from cisterns to gray water planters. A solar hobbyist took interest for that component. A few core volunteers with skills learned from previous Earthship builds came back for the second year. The moral support and advice from other Earthship owners on Facebook was so helpful."

"The first year the tools were simple! Mainly human labor, hammers, saws, sledgehammers,

shovels, wheelbarrows and laser levels. We pounded all the tires and did the concrete work. From the digital side, our Facebook group, Manitoba Earthship Project helped find volunteers and keep people in the loop. In year two, the WWOOF program helped bring longer term volunteers on site."

"We are contacted A LOT by others who are planning similar projects," says Nicole. "There will be at least two more Earthships starting in Manitoba in 2015 (one of which we know is approved). What we really want to see is a change in code so it is easier, both rural and urban, to make better choices. Why not allow various gray water systems in cities? Why





“ Sustainable development is not a luxury, it is an imperative.   
 – Ban Ki-moon (Secretary-General of the United Nations)

is having solar power such a big deal? Things need to change in legislation to actually allow wider change.”

“Our focus has been reducing waste and lessening our negative impact on the environment around us. I find it difficult to align my behavior with my beliefs. It’s about the little things and then the bigger things.”

On June 1, 2014 Nicole gave birth to Bridget May Plantz and their lives changed again.

“Living in an Earthship with a newborn feels the same as living anywhere I think. From this perspective, we really don’t think of our home as being that different but I guess it is. I do think about how she will accept as normal the way we

collect our water, gather our own power, and run our unique home. I like that thought.”

“I hope she learns from us about community, living sustainably, and making dreams reality. She is going to hear a lot of stories, especially about what we lived without while building. Like bucket showers, washing in the creek, our ‘barn’ living room, camping in negative temperatures, and so much more.”

**Would they do it again?**

“Kris always says ‘we wouldn’t do it!’” exclaims Nicole. “What he means is we would not build our own home with our own hands again. There was, and still is so much work in-

olved! I’m happy we did it. But I’m with him, we wouldn’t want to do this again. But then again, this was the most cost-effective way to do this... so maybe we would.”

Nicole, Kris, and their team have built a durable, sustainable future and set a significant precedent. The construction of this Earthship home represents a new paradigm. If people are willing to reimagine a new homestead, we may find that there is an abundance of help, resources and people cheering the next Earthship build. 🌱





PHOTO: FRANK VASSEN (OF BRUSSELS), 2008. THANKS TO WIKI MEDIA COMMONS.

# Microbial Factories

## Engineering “Synthetic Biology” For Industrial Production

By Kevan Bowkett

Lowland rainforest,  
Masoala National Park,  
Madagascar.

**ONE RAPIDLY DEVELOPING FORM OF TECHNOLOGY** we hear more of these days is “synthetic biology” (synbio), the production of materials from designed (including cyborg) microorganisms. (They are “cyborgs” because their bodies incorporate both living and artificial structures.) These creatures are grown in the lab and programmed through a form of extreme genetic engineering to secrete commercially or industrially valuable products in large quantities. The UN Convention on Biodiversity defines synbio broadly: “Synthetic biology is a further development and new dimension of modern biotechnology that combines science, technology, and engineering to facilitate and accelerate the understanding, design, redesign, manufacture and/or modification of genetic materials, living organisms and biological systems.”

Synbio products range from industrial chemicals to vaccines to synthetic foodstuffs to biofuels. World markets for synbio products are estimated at US\$ 3.9 billion for 2016 and are expected to grow to \$11.4 billion by 2021.

### Some problems.

Some of these new synbio materials may remove a large part of the market for the products of rainforest people or farmers in the global South. For example, the synbio substance vanillin, produced by the

company Evolva, may destroy much of the market for vanilla (produced especially in Madagascar). Since vanilla production requires intact rainforest, a market for vanilla helps maintain the forest. If this market is destroyed by vanillin, rainforest people may need to turn to slash and burn agriculture to survive. The situation is similar to saffron -- many

“ We need smart, green manufacturing and agriculture in Manitoba. Synbio is neither: so we need to plug its drivers — enthusiasm, desire for interesting and meaningful work, and moral commitment — into different technologies.

global South farmers, especially in Iran, depend on saffron production, whose market is at risk from another synbio Evolva product.

The “green goo problem” is also a hazard. This is the hypothetical but probable scenario where synbio organisms enter the environment (through whatever avenue) and continue to replicate themselves and produce the substance they have been programmed for. For instance, synbio organisms programmed to manufacture oil might get into the environment and continue to operate, generating a self-replicating oil slick.

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PHOTO: PRAIRIE ARCHITECTS INC. / WALTECH VISUALIZATION

# Old Grace Housing Co-op is Building Green

By Randa Stewart

**OLD GRACE HOUSING** Co-operative (OGHC) is currently under construction at the corner of Arlington and Preston in Winnipeg's Wolseley neighbourhood. The 60-unit building will open for occupancy in 2018. Members of the co-op are committed to a number of significant environmental initiatives, including registration under the LEED Green Building Program, construction of a new habitat for a threatened bird species, a focus on active and shared transportation, and significant landscaping. In addition, two Manitoba Hydro PowerSmart programs are rewarding the co-op for taking its environmental responsibilities seriously.

## LEED (Leadership in Energy and Environmental Design)

OGHC is registered under the Canada Green Building Council's LEED\* for New Construction and Major Renovations Green Building Rating System. The co-op is targeting LEED Gold certification, which is the second-highest LEED certification level.

To receive Gold certification, a project has to meet criteria relating to everything from site selection, construction, maintenance materials, to on-going air quality and maintenance.

OGHC initiatives related to LEED certification include:

- Taking measures to control erosion during construction
- Making extensive use of native and adaptive vegetation in landscaping to reduce the need for irrigation
- Installing low-flow water fixtures that will reduce potable water usage by 45 per cent
- Ensuring that the majority of the building material is regionally manufactured and contains post-consumer and pre-consumer recycled content
- Setting as a target the recycling or rescue of 75 per cent of the waste leaving the site
- Installing LED (light-emitting diode)

lighting throughout the building, leading to a significant reduction in energy use

- Implementing indoor air-quality measures during construction for the protection of the workers

The prohibition of smoking in the building and on the grounds, the circulation of outdoor air, and the use of environment-friendly and health-friendly products in indoor finishings also contribute to OGHC's efforts to meet LEED standards.

## PowerSmart

By reducing the building's energy demand, OGHC qualifies for support under two Manitoba Hydro PowerSmart programs. The Energy Model Incentive rewards the project for using an energy model and design that would help meet LEED criteria. Under the New Building Program 2.0, OGHC will receive a grant for significantly exceeding the Manitoba Energy Code for Buildings.

## Chimney Swift habitat

Historically, Chimney Swifts, a migratory bird species, nested and roosted in hollow trees, but the clearing of old-growth forests throughout most of North America did away with much of their natural habitat. In response, Swifts adapted and began nesting in small masonry chimneys, and roosting communally in large chimneys and smokestacks.

Chimney Swift numbers have been declining in Canada for the past 50 years. Among the factors contributing to the decline is the reduction in Swift-friendly chimneys, as older heating systems are replaced and existing chimneys are fitted with metal liners and capped.

Over the years, Chimney Swifts had been using the disused chimney of the original Grace Hospital as a nesting site. That chimney was taken down when the Manitoba government cleared the hospital site.

Old Grace Housing Co-operative will be constructing a new 12-metre tall Chimney Swift habitat on the co-op site in consultation with wildlife officials. Following construction, volunteer observers with the Manitoba Chimney Swift Initiative and Manitoba Wildlife and Fisheries Branch will monitor the site for Chimney Swift activity.

## Transportation

OGHC is working to decrease reliance on vehicles as part of its environmental commitment.

Being in the heart of Wolseley allows members easy access to multiple bus routes; and numerous local amenities are within easy walking distance. According to Walk Score, an international rating service, the Old Grace Housing Co-operative will have an 88 per cent walkability rating and a 71 per cent transit score, making it "very walkable" with "excellent transit."

The design includes secure bicycle storage for 60 bikes and 14 outdoor spaces for visitors.

And the co-op has entered into a relationship with Peg City Car Co-op, which will see Peg City manage two car-share locations on-site and provide each OGHC member with a Peg City credit. The first of these cars is now available on the lot on the corner of Preston Avenue and Evanson Street.

## Landscaping

The co-op's landscaping plans call for extensive tree, shrub, and grass planting on all sides of the building that face the public streets (Arlington, Preston and Evanson).

OGHC will be planting 20 trees (5 evergreen varieties and 6 deciduous varieties), 80 shrubs (12 different varieties) and 23 different varieties of perennial grasses and vines.

OGHC will make extensive use of native and adaptive vegetation in its landscaping to reduce the need for irrigation.

Interest in the co-op has been strong. The co-op maintains a waiting list for people who might be interested in a suite in years to come. 🌱

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## Red Fife flour

- produces a tasty bread
- the go-to flour for most of our whole grain baking, including breads, buns and most of our sourdoughs
- retains bran, germ, fibre, and all the vitamins & minerals found in the kernels
- established the prairie wheat tradition

## Spelt flour

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- used in our spelt bread, pitas, some squares, muffins & cookies
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## Euterra Rising...

“Ruination” caused by the loss of electricity and the Internet, Beamer and those with him carved out living space inside a large Massif. They struggled with this new way of living, exploring new ways to work within their existing environment to obtain food and materials needed for survival. Over generations, they became the Euterrans. They thrived and grew, developing their own customs, art, and teachings.

A second post-Ruination society is also introduced when Jaeger, a Citizen of Mainbranch comes to Euterra. The citizens, also known as Skrala, are essentially slaves to the ruling Brotherhood. Jaeger was removed from Mainbranch because of his dream for freedom for all Skrala. In Euterra, he learns about freedom in a way he doesn't expect to.

Burch, who has published seven books about voluntary simplicity and sustainable livelihood, weaves his expertise into the novel through the teachings of the Euterrans. He uses Jaeger's character as a reason to explain concepts and terminology to the readers, who are learning about the Euterran ways alongside with Jaeger.

There are very few utopian novels that have emerged in the last few decades, so this book sets a new precedent for this genre of fiction. Many utopian novels are set in a future that is very distant. This makes the stories enticing, but less relatable. A significant success of Euterra Rising is that it is set in the very near future, and the event that leads to the “Ruination” is plausible enough to happen in the reader's lifetime.

Euterra Rising is a refreshing perspective on how humans might adapt to a global crisis. In one of Burch's previous publications, *The Hidden Door*, he stated, “Whoever will shape the future culture of sustainability may not be many in number. But whoever they are, they are, or soon will be, standing at those critical balance points where the tiniest push at the right time may birth a new world.” Euterra Rising is an inspiring book about what that new world could look like. I found Burch's vision inspiring, and I would recommend this book to anyone who needs an uplifting perspective on the future. 🌱

—Megan Krohn

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## Microbial Factories...

Another drawback is that, because synbio processes are patented and owned by companies, the creation of big markets for synbio products helps extend the power of corporations. The ETC Group reports, “[t]he world's largest chemical, energy, agribusiness, and pharma companies are investing in Synthetic Biology.” Since they are structurally undemocratic in general, this development helps erode democracy. Even in a period of reduced governmental democracy, state control (or at least oversight) would seem more in the public's interest.

Another problem is that because a lot of synbio works not by combining genes from different species but by manipulations of the genes of a single species, it's less visible and controversial than conventional biotech (as synbio proponents intend). An example is the “gene drive” technology called CRISPR-Cas9 (Clustered Regularly Interspaced Short Palindromic Repeat). Such technologies “drive” a selected trait into a species' reproductive process, so the trait is present in all offspring of that species. Corn, chickens, and mushrooms have already been “edited” using CRISPR. Extinction of varieties or whole species is a plausible result of the use of gene drives.

Synbio advocates like to present synthetic biology as “green” or “natural” (maybe because biology is involved). Ecover soap, for example, although including ingredients produced by cyborg organisms, is commonly considered a natural product. But the mere presence of living material doesn't make a technology green -- look at GE crops and Terminator. Some proponents also like to present the tech as Science, ignoring that tech is applied science and so embodies moral values and choices. Tech is seldom “value-neutral” despite the hype of people who benefit financially from it.



...the mere presence of living material doesn't make a technology green -- look at GE crops and Terminator.

## Canada and Manitoba

While California appears to be perhaps the world centre of synbio startup companies, Canada is working in this area as well. The Canadian government has provided some support for this sector (notably to the synbio program of the University of Lethbridge). Concordia University in Montreal has become a major, well-financed centre of synbio research; while in Toronto the startup Synbiota sells software and DNA products that allow users to cheaply construct complicated genetic circuits in hours (instead of weeks or more). The University of Toronto hopes to become a major centre of synbio research, stating that, “[t]he Impact Centre at U of T is working with university researchers and private sector partners across Ontario to develop a vibrant Synthetic Biology Innovation Cluster (SYN BIO-IC)...aim[ing] to accelerate the translation of new knowledge into commercially viable and socially relevant products.” Further, many Canadians (including Manitobans) are enthusiastic about the California-based *Glowing Plants* synbio project, crowd-funded through Kickstarter – while some Canadians think this proposed widespread commercial release of seeds created through a consequential and unevaluated tech (scheduled for this year, with no sign of US government regulatory agencies wishing to block it) is a bad idea. And CRISPR has garnered interest at UBC, Queen's, and the University of Calgary.

There was a presentation on synbio tools by the major biotech company ThermoFisher at UM, in October 2015, entitled “Advancements in Genome Editing, Gene Synthesis, and Engineered Cell Models.” UM's main interest in this general area is epigenetics and its medical applications, which closely relates to gene drives. (Epigenetics is the study of how gene expression is activated or suppressed and its results, as distinct from results due to changes in genetic code.) Scientists at both St Boniface and the Children's Hospitals have worked on or advocated using CRISPR.

We need smart, green manufacturing and agriculture in Manitoba. Synbio is neither: so we need to plug its drivers — enthusiasm, desire for interesting and meaningful work, and moral commitment — into different technologies. And we need to signal society's desire to do this far enough in advance that there's enough time for divestment and retraining in the synbio sector. 🌱

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