

**“MOTHER” EARTHSHIP:
ALTERNATIVE SOLUTIONS TO CANADA’S FIRST NATIONS HOUSING
CRISIS**

by

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B.A., ST. THOMAS UNIVERSITY, 2012

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF**

MASTER OF JOURNALISM

In

THE FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES

(Journalism)

**THE UNIVERSITY OF BRITISH COLUMBIA
(Vancouver)**

April 2015

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Abstract

Housing shortages, mould-infested buildings and contaminated drinking water are just a few issues faced by people on many of Canada's First Nations reserves. These are the stories the public continuously hears in the media and, while they are important, they can also cause harm. By only publishing negative stories, the news media reduce these communities and these people to a set of stereotypes. This kind of coverage also eliminates or discourages the idea that there are tangible solutions to recurring problems. This thesis project will do the opposite. Instead of simply highlighting housing problems on First Nations reserves, it will tell the story of one effort to solve them. It will be a solutions-focused piece, a story of empowerment and a story of people changing their communities at a grassroots level. Ultimately, it's the story of finding a home.

My thesis will explore the issue of housing shortages on reserves in Canada; focusing specifically on how First Nations communities are addressing the issue while choosing to live sustainably in a modern context. The journalistic portion of the project will follow the story of a Mi'kmaq woman from Prince Edward Island who is building an alternative home inspired by something called an Earthship. It is an environmentally sustainable, off-grid house made mostly from recycled materials. Some opting to build these houses say the design principles of Earthships are consistent with many traditions in First Nations spirituality, which make them an attractive housing alternative for reserves. The literature review will provide a comprehensive overview of problems and solutions surrounding First Nations housing. It will examine three main subject areas: the logistics and politics of First Nations housing; a history of sustainable housing and the

implementation of Earthships on reserves; and the connection between that kind of housing, First Nations spirituality and environmentalism.

Preface

Frances Bula, adjunct professor at the University of British Columbia's Graduate School of Journalism, and Nathan Edelson, adjunct professor at the University of British Columbia's School of Community and Regional Planning, approved this thesis project in April of 2015.

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Acknowledgements

I would like to thank my primary advisor, Frances Bula and my secondary advisor, Nathan Edelson for their guidance throughout this project. Their editorial advice greatly informed and enhanced my research and shaped this project into what it is today.

I'd also like to thank David Beers and Deborah Campbell for inspiring my love of long-form journalism and for believing in this story from the start.

I want to acknowledge and thank my wonderful family and friends for their love and emotional support over the last eight months.

Finally, I'd like to thank Eliza Knockwood for sharing her story with me. Without her, this thesis project would not have been possible.

Dedication

For Eliza, and anyone else searching for a home.

Literature Review

1 First Nations Housing

1.1 History of Reserves

Canada has more than 600 First Nations/Indian bands, some of which have multiple reserves.¹ Collectively, there are about 3,100 reserves throughout the country. Not all First Nations people opt to live on reserves, however. According to the 2011 census, only 49.3 per cent of the country's First Nations population lives on a reserve or an Indian settlement, which amounts to approximately 314,000 people.² The government of Canada defines a reserve as a federally owned portion of land used and inhabited by members of an Indian band and governed by Aboriginal Affairs and Northern Development Canada [AANDC].³ An Indian settlement is defined as an area with no official borders where at least ten aboriginal persons live on a semi-permanent basis. It is typically on Crown lands and is governed by either the federal or provincial/territorial jurisdiction.⁴

The roots of Canada's First Nation reserve system can be traced back to the 1630s, when French missionaries created settlements in present-day Quebec for the purposes of converting indigenous people to Christianity.⁵ By the 1860s, reserves became more common with the arrival of more European settlers.⁶ It was considered a solution to land disputes between colonial authorities and indigenous leaders.⁷ The Canadian

¹ Canada, "First Nations People in Canada."

² Government of Canada and Statistics Canada, "Aboriginal Peoples in Canada: First Nations People, Métis and Inuit."

³ Government of Canada and Statistics Canada, "Census Subdivision: Detailed Definition."

⁴ Ibid.

⁵ Erin Hanson, "Indigenous Foundations."

⁶ Ibid.

⁷ Ibid.

government established reserves in various ways, i.e. by establishing them on Crown land or purchased private land and by giving permission for missionaries to establish them [on Crown land]⁸

One of the defining moments in the history of First Nations housing in Canada was the signing of the British North America Act in 1867. This act transferred the responsibility for “Indians and lands reserved for Indians” from the imperial Crown in England to the Canadian federal government.⁹ These responsibilities included providing First Nations communities with services such as education, health, social services and housing.¹⁰ The Indian Act followed about a decade later in 1876, which outlined the federal government’s responsibility to be “guardians” of First Nations people until they were considered ready to assimilate into Canadian society.¹¹ The Indian Act also established the minister of Indian Affairs as the authority over how reserve land is used.¹² The minister’s responsibilities include authorizing land use by band members, who cannot legally possess land on an individual basis.¹³

The reserve system in Canada has had strong social and cultural implications for First Nations communities. Many problems have been associated with the reserve model, including where reserves were often located and how they were structured. Reserves were often small and contained pieces of land, which was much different than the larger territories First Nations peoples were accustomed to living on [prior to the 1860s].¹⁴ Land

⁸ Ibid.

⁹ Canada, “A History of Indian and Northern Affairs Canada.”

¹⁰ “How Does Native Funding Work?”

¹¹ Canada, “A History of Indian and Northern Affairs Canada.”

¹² Erin Hanson, “Indigenous Foundations.”

¹³ Ibid.

¹⁴ Michael Optis et al., “Mold Growth in on-Reserve Homes in Canada: The Need for Research, Education, Policy, and Funding.”

chosen for reserves was often of poor quality and lacked valuable natural resources.¹⁵ Some argue this isolation led to an increased dependency on the federal government, which became very apparent with regards to housing specifically.¹⁶ Once housing was put under the authority of the Canadian federal government, members of First Nations communities had to begin adapting to North American and European-style architecture, as opposed to their traditional housing like longhouses, wigwams and tipis.¹⁷ Many problems arose from this transition, because many members of First Nations communities did not have the knowledge or skillset to maintain this unfamiliar type of home.¹⁸ These houses were typically smaller and weren't designed to meet the needs of clan-based families.¹⁹ Ultimately, First Nations reserves were left without enough units to house community members, which resulted to overcrowding.²⁰

1.2 Housing Conditions, Shortages and Overcrowding

The issue of overcrowding and poor housing conditions on reserves continued into the 21st century. In 1962, there was a shortage of 6,048 houses on First Nations reserves in Canada. At the time, only 44 per cent of homes on reserves had electricity and nine per cent had an indoor toilet.²¹ By 1981, 23 per cent of homes on reserves needed major repairs and 33.4 per cent were considered overcrowded.²² More recently, these issues have garnered attention both nationally and internationally. James Anaya is the UN's special rapporteur on the rights of indigenous peoples. He visited several Canadian

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid.

²² Ibid.

reserves in 2013 and his findings were less than optimistic: “At least one in five aboriginal Canadians live in homes in need of serious repair, which are often also overcrowded and contaminated with mould.”²³ In his report, Anaya also pointed out Canada’s double standard of for living conditions: “Canada consistently ranks near the top among countries with respect to human development standards, and yet amidst this wealth and prosperity, aboriginal people live in conditions akin to those in countries that rank much lower.”²⁴

The UN report would not have been a revelation to Canadian authorities. In 2011, an evaluation was conducted on the state of on-reserve housing by Indian Affairs and Northern Development Canada [INAC].²⁵ The study concluded that 41.5 per cent of aboriginal households on reserves were in need of major repairs.²⁶ The rate was 14.5 per cent for aboriginal households off reserve. “Major repairs” are defined as those including “defective plumbing or electrical wiring, structural repairs to walls, floors or ceilings and the like.”²⁷ The study suggested the “deterioration” of housing units on reserves was attributed to inadequate design, low-quality building materials and overcrowding.²⁸

While the housing shortage on Canadian First Nations reserves is undeniable, the severity of the problem is still being debated. A 2011 report by the AANDC concluded there was an immediate shortage of 20,000 to 35,000 houses to meet the housing needs of First Nations communities across Canada.²⁹ Surveys conducted by the Assembly of First

²³ Anaya, James, “At Least One in Five Aboriginal Canadians Live in Homes in Need of Serious Repair, Which Are Often Also Overcrowded and Contaminated with Mould.”

²⁴ Ibid.

²⁵ Canada, “Evaluation of INAC’s On-Reserve Housing Support.”

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ibid.

²⁹ Ibid.

Nations, however, estimated the shortage to be upwards of 85,000 units.³⁰ Whatever the number is, no one can deny there is a shortage and that this issue has resulted in overcrowding. Statistics Canada defines crowded households as those with more than one person living in each room.³¹ According to the 2006 census, 26 per cent of First Nations on Canadian reserves were living in overcrowded dwellings, which is six times higher than the proportion of those living in non-aboriginal communities.³² That amounts to approximately 78,000 people.³³ These living conditions create problems that extend beyond mere inconvenience. Overcrowded homes are also known to cause negative health effects for residents. Overcrowding is one contributing factor to moisture buildup in homes, which can lead to mould.³⁴ These conditions can also lead to the spread of bacteria and viruses, causing illnesses like asthma and tuberculosis.³⁵

1.3 Funding Structure

Every year, the Canadian federal government allocates about \$272 million in funding for housing, which is allocated to three areas: construction of new housing, maintenance of existing housing, and subsidies for people renting housing.³⁶ In 2005, an additional \$295 million was allotted for housing, which was to be spent over the next five years.³⁷ Housing funds are divided between the Canada Mortgage and Housing Corporation and Aboriginal Affairs and Northern Development Canada (formerly known as Indian Affairs

³⁰ Dennis Patterson and Lillian Dyck, "HOUSING ON FIRST NATION RESERVES: Challenges and Successes."

³¹ Canada, "Evaluation of INAC's On-Reserve Housing Support."

³² Government of Canada, "Business, Consumer and Property Services - Overview."

³³ Government of Canada and Statistics Canada, "Age Distribution of First Nations Populations Living on and off Reserve, Canada, 2006."

³⁴ Fraser et al., "Bottom up and Top down."

³⁵ Ibid.

³⁶ Canada, "Evaluation of INAC's On-Reserve Housing Support."

³⁷ Ibid.

and Northern Development Canada).³⁸ The funds are then dispensed by the leaders of the First Nation, who choose specific projects the money will go to and are then expected to create housing plans that meet the community's needs.³⁹ In 1996, the federal government implemented a spending cap on funding for the AANDC (Aboriginal Affairs and Northern Development Canada), meaning First Nations funding could not grow by more than two per cent annually.⁴⁰ As of 2014, the annual budget for the AANDC was \$8 billion.⁴¹ This funding is used for areas like education, community infrastructure and on-reserve housing.

Every year, approximately 1,750 homes are built and 3,100 are renovated on First Nations reserves through a combination of federal government funding and investments from individual communities.⁴² There are three primary ways the AANDC distributes funding for housing on First Nations reserves in Canada: the 1996 on-reserve housing policy, the income-assistance program, and the ministerial loan guarantee program.⁴³ Through the on-reserve housing policy, the AANDC provides money for First Nations communities to use for maintenance, insurance, home construction and renovations.⁴⁴ The amount of funding is given in proportion to the number of people in the community and how remote it is.⁴⁵ This method of funding is optional for First Nations communities and those that opt out are eligible for subsidy programs through the AANDC that offer funding upwards to \$40,000 for housing projects.⁴⁶ The second form of funding is the

³⁸ Government of Canada, "Frequently Asked Questions - First Nations On-Reserve Housing."

³⁹ Ibid.

⁴⁰ "How Does Native Funding Work?"

⁴¹ Canada, "Backgrounder – Aboriginal Affairs and Northern Development Canada's Financial Picture (2013–2014)."

⁴² Dennis Patterson and Lillian Dyck, "HOUSING ON FIRST NATION RESERVES: Challenges and Successes."

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Ibid.

income-assistance program, which provides \$125 million in annual funding to help low-income residents with rent and other housing expenses.⁴⁷ The third main source of AANDC funding is through a ministerial loan guarantee (MLG). An MLG is a “government-backed security for loans issues on reserve” and is applied on nearly one third of housing on Canadian reserves and has a guarantee authority limit of \$2.2 billion.⁴⁸ These loans specifically can be used for the construction, renovation or acquisition of homes on reserves.⁴⁹

1.4 Funding Controversy

1.4.1 Insufficient Funding and Criticism of Funding Structure

In February 2015, the Standing Senate Committee on Aboriginal Peoples published an interim report entitled “Housing on First Nations Reserves: Challenges and Successes.” Members of the committee visited 16 First Nations communities, speaking with community members, chiefs and housing managers about their experience with the federal government’s on-reserve housing policies. The report examined the current state of housing on reserves, including the efficiency and sustainability of funding models, housing conditions and the availability of housing on reserves. The report stated that several participants interviewed in these First Nation communities were quick to criticize the structure of the federal government’s funding system for housing.⁵⁰ According to the report, some First Nations community members and leaders argued the bureaucratic nature of the federal funding model made it difficult to administer, which exacerbated the

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Canada, “Ministerial Loan Guarantee Manual.”

⁵⁰ Dennis Patterson and Lillian Dyck, “HOUSING ON FIRST NATION RESERVES: Challenges and Successes.”

challenges of providing enough housing on reserves.⁵¹ One of the complaints was the long delay between applying for funding and the confirmation that it has been approved.⁵² Funds need to be spent within the fiscal year and any delay can put pressure on communities, which then have to spend money in a shorter period of time.⁵³

The report concluded not only a criticism of how funding is distributed, but also how much money is provided. The committee stated there was a significant housing shortage on Canadian reserves and that an unacceptable number of houses in First Nations communities were in poor condition. “Witnesses from across the country told the Committee that funding levels for housing through CMHC and AANDC were inadequate to address the magnitude of the housing shortage.”⁵⁴ The committee said problems with housing conditions and shortages have left many reserves in a “state of crisis.”⁵⁵

A report conducted by the office of the auditor general of Canada in 2011 suggested that annual funding from the AANDC and the CMHC is not enough to cover the cost of building new housing units and repairing old ones.⁵⁶ The senate committee suggested increased federal funding is not the only way the housing crisis can be solved. It proposed other options as well, like market housing and revolving loan funds.⁵⁷ The committee stressed the importance of education through increased dialogue between the federal government and First Nations leaders to clarify the responsibilities of each party

⁵¹ Ibid.

⁵² Ibid.

⁵³ Ibid.

⁵⁴ Ibid.

⁵⁵ Ibid.

⁵⁶ “Status Report of the Auditor General of Canada to the House of Commons.”

⁵⁷ Dennis Patterson and Lillian Dyck, “HOUSING ON FIRST NATION RESERVES: Challenges and Successes.”

with regards to rent collection, construction and renovations.⁵⁸ Another suggestion was to provide better training for on-reserve homeowners for housing maintenance.⁵⁹

Irving LeBlanc works for the Assembly of First Nations, an advocacy organization that represents First Nations interests on a national level in Canada. LeBlanc is the special advisor for housing, infrastructure and emergency issues management. He and other members of the assembly argue that funding from the Canadian federal government is insufficient in meeting the housing needs of First Nations communities. The assembly wants to build approximately 6,000 houses on reserves annually to “meet the needs of all First Nations.” At the cost of approximately \$150,000 per home, LeBlanc calculates it will cost approximately \$1 billion dollars per year— and that’s what the assembly is asking of the department of Aboriginal Affairs and Northern Development Canada. LeBlanc says it is nearly impossible to estimate how long it would take for all First Nations housing needs to be met. He says the estimate of \$1 billion per year is based on the projected need for the next 25 years based on four criteria: the number and size of housing units needed to eliminate overcrowding, the amount of renovations needed to alleviate overcrowding, the number of houses that need to be replaced, and the number of houses that need renovations.

1.4.2. Financial Mismanagement on Reserves

The polarized debate in the news media and political arena has prolonged and exacerbated the difficulty of finding solutions. The rise of conservative and neoliberal

⁵⁸ Ibid.

⁵⁹ Ibid.

politics has led to increasing skepticism among the public about a state solution to First Nations housing problems. Some vocal proponents of Canada's conservative movement suggest a lack of federal funding is not to blame for poverty and poor housing conditions on First Nations reserves. Mark Milke is the the director of Alberta Policy Studies and senior fellow at the Fraser Institute, a public policy research organization known to promote right-wing perspectives. Milke wrote an article in response to Idle No More, the 2012 protest movement aimed at protecting indigenous sovereignty in Canada. In the piece entitled "Is Canada Shortchanging Aboriginals?," Milke suggested reserves usually are at an economic disadvantage because of their location. He claimed problems faced on reserves are similar to that of any rural community: "Simply put, it is impossible to bring the opportunities available in urban Canada to rural Canada. Even for non-aboriginals in non-reserve villages, educational, health, and career options are severely limited."⁶⁰

It's also been suggested that financial problems on First Nations reserves may be connected to their governance system. Milke says the way money is distributed from the federal government to individual nations can interfere with the accountability process between chiefs and his/her band and council members: "In non-native towns and cities, most money flows up from local taxpayers via property taxes. That creates a natural taxpayer-politician link and accountability."⁶¹ Band councils are required to serve their members through "management accountability" and "political accountability."⁶² Management accountability involves the control and supervision over programs and

⁶⁰ Milke, "Is Canada Shortchanging Aboriginals?"

⁶¹ Ibid.

⁶² Canada. Indian & Northern Affairs Canada, *First Nations Governance Handbook*.

services and the responsibility to manage funds appropriately.⁶³ Under political accountability, councils are required to act in the best interest of their members.⁶⁴

One of the most well-known examples is Attawapiskat, the First Nations community in northern Ontario that first made headlines in October 2011 when it declared a state of emergency.⁶⁵ Soon the whole country knew about this small community and its big housing crisis.⁶⁶ Attawapiskat Chief Theresa Spence drew attention to many of the problems faced by this community of just under 2,000 people. These issues included families living in tents, houses considered “fit for condemnation,” and others living without running water or electricity.⁶⁷

Prime Minister Stephen Harper criticized Chief Spence and her council for not appropriately spending the approximate \$100 million the federal government had given Attawapiskat First Nation since 2006.⁶⁸ An external audit was conducted in December 2011 to investigate the spending practices of Spence and her council.⁶⁹ Results concluded that nearly 80 per cent of the 505 transactions reviewed between 2005 and 2011 “lacked proper documentation.”⁷⁰ From 2011 to 2012, Attawapiskat First Nation was placed under third-party management, which is described by the AANDC as “a temporary measure to ensure the continued delivery of programs and services to community members, and is applied by the department only as a last resort.”⁷¹

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ “HOUSING CRISIS IN ATTAWAPISKAT.”

⁶⁶ “Theresa Spence, Controversial Chief of Attawapiskat First Nation, Earned \$82,000 Tax-Free in 2013.”

⁶⁷ “HOUSING CRISIS IN ATTAWAPISKAT.”

⁶⁸ “Attawapiskat Crisis Sparks Political Blame Game.”

⁶⁹ “Attawapiskat Chief Slams Audit Leak as ‘Distraction.’”

⁷⁰ Ibid.

⁷¹ Canada, “Backgrounder - Third-Party Funding Agreement Management.”

Attawapiskat First Nation made headlines again the following year when Chief Theresa Spence went on a hunger strike from December 2012 to January 2013.⁷² Her intention was to draw attention to First Nations issues including poor living conditions on reserves.⁷³ But a public opinion poll conducted in the aftermath of the hunger strike showed many Canadians held conservative views on First Nations funding, much like those of Mark Milke. The poll was conducted for National Post/Postmedia News and Global Television by the market research firm, Ipsos Reid in January 2013.⁷⁴ Of the approximately 1,000 Canadians polled, 60 per cent said the problems faced by First Nations peoples were “brought on by themselves.”⁷⁵ In 1989, a similar poll showed that only 35 per cent of Canadians held this belief. In the 2013 poll, 81 per cent believed federal funding should not be increased unless external audits were conducted on reserves to guarantee financial accountability among First Nations leaders.⁷⁶ In March 2013, the First Nations Financial Transparency Act [FNFTA] received royal assent, under which First Nations governments were required to submit financial reports no less than 120 days before the fiscal year ends.⁷⁷

Officials with the department of Aboriginal Affairs and Northern Development Canada suggested the FNFTA would be beneficial, because it would provide greater transparency for taxpayers. The department’s website states: “Canadians, including members of First Nation communities, want to know that their tax dollars are being used to improve community living conditions, and to create jobs and economic opportunities

⁷² “Pressure Mounts on Harper as Hunger-Strike Chief’s Protest Enters Third Week.”

⁷³ Ibid.

⁷⁴ “Fast Fallout.”

⁷⁵ Ibid.

⁷⁶ Ibid.

⁷⁷ “New Federal Audits of Native Reserves Find Questionable Spending.”

for First Nation communities.”⁷⁸ Not everyone supported this Conservative policy, however. Some, including Hayden King suggested the act would have negative impacts on First Nations communities. King is from Beausoleil First Nation on Gchi'mnissing in Huronia, Ontario, and is the director for the Centre of Indigenous Governance at Ryerson University.⁷⁹ In a CBC article from August 2014, King suggested the FNFTA would undermine the legitimacy of First Nations sovereignty and governance: “This includes stripping communities of power in areas of social policy, extinguishing rights and title, reducing program resources, and generally trying to transform communities into municipalities under provincial jurisdiction.”⁸⁰ Furthermore, he suggested unbalanced media coverage that focused only on highly paid First Nations leaders would further perpetuate the stereotype of the “corrupt chief.”⁸¹ These ongoing political battles have ultimately led to a polarized discussion about funding for First Nations, rather than tangible actions to solve the housing crisis.

1.5 Building Codes and Land Ownership on Reserves

Regulations that apply to most Canadian communities for owning land and building houses differ greatly from those set for First Nations reserves. Land is held collectively by the band, reflecting the ownership pattern from pre-colonial days, and individual members can “use and occupy” a piece of land.⁸² While they don’t have full ownership of the land, they can acquire something called a *Certificate of Possession*, meaning they

⁷⁸ Canada, “Frequently Asked Questions - Release of Recipient Audit Policy, Plan, and Summary Reports.”

⁷⁹ “First Nations Transparency Act May Do More Harm than Good.”

⁸⁰ Ibid.

⁸¹ Ibid.

⁸² Branch, “Land Management.”

have lawful possession of that particular segment of land on the reserve.⁸³ The process of building a home is also different than those off reserve. As of 1983, houses built using federal funding (from the department of Aboriginal Affairs and Northern Development Canada or Canada Mortgage and Housing Corporation) needed to meet the standards of the National Building Code of Canada (NBC).⁸⁴ It is the responsibility of individual chiefs to ensure the code is followed. These regulations differ, however, for those who choose to build and pay for their own homes. This includes alternative-style homes like Earthships, which members of some First Nations reserves are opting to build in light of a national housing shortage. Earthships are environmentally sustainable homes that are off-grid and built using mostly recycled or natural building materials. LeBlanc says it's a rather independent process to build houses that are not federally funded and that there is usually very little involvement on behalf of the band: "If an individual wants to build a house on their property, which is in most cases CP, (Certificate of possession), they can build pretty well whatever they want." Earthships are usually built using the homeowner's personal funds, rather than federal funding. This makes Earthships built on reserves exempt from the National Building code and thus makes them easier to build. While there are few regulations that apply to those building their own house on reserves, LeBlanc says the Assembly of First Nations highly encourages any homeowners to follow building codes that will ensure safe living conditions: "What we're pushing for is recognition and adherence to the building codes even if they're not legally enforceable, but as best practice."

⁸³ Ibid.

⁸⁴ Press, "Enforce Building Code on Reserves, Officials Urge Aboriginal Affairs Minister."

2 Housing Alternatives on First Nations Reserves

2.1 Alternative Housing

In response to housing shortages on many of Canada's First Nations reserves, some are beginning to find solutions by turning to alternative-style homes. These have included straw bale houses and Yurt homes, which are portable tent-like structures built with plywood.⁸⁵ One structure in particular that has recently begun to appear on reserves is something called an Earthship. It's an environmentally sustainable home that was developed by American architect Michael Reynolds in the 1970s.⁸⁶ The structures are built using naturally sourced and recycled materials such as old tires, scrap metal and mud. They rely on sustainable energy sources, such as solar and wind power.⁸⁷ The design was eventually adapted for countries with different climates, including Canada. One of the first Earthships in Canada was built by married couple Pat and Chuck Potter in the 1990s near Bancroft, Ontario.⁸⁸ Since then, dozens of these structures have been showing up in communities across the country,⁸⁹

There are at least two Earthships being built on Canadian First Nations reserves right now— one in Prince Edward Island and another in Ontario. An additional build is planned for next spring at Six Nations reserve in southern Ontario. Eliza Knockwood is the first person in Atlantic Canada to build an Earthship in a First Nations community. She is a Mi'kmaq woman from Abegweit First Nation in Scotchfort, Prince Edward Island. Eliza decided to build her own home because she has been on a housing waitlist since her daughter was born 15 years ago. By building an Earthship, she hopes not only

⁸⁵ Stinson, "A Handcrafted, \$7,500 Yurt That's Far Cooler Than Your House."

⁸⁶ Harkness, "Earthships."

⁸⁷ *Ibid.*, 54.

⁸⁸ Purdy, Elizabeth Rhoetter, "Green Technology: An A-to-Z Guide."

⁸⁹ "The \$55K, 2,900-Square Foot, Eco-Friendly Home – with No Electricity Bills."

to help solve the housing shortage on her reserve, but also to blend modern environmental technology with First Nations spiritual teachings. Skyler and Kahseeniyo Williams of Six Nations reserve in Ontario are also building an Earthship-inspired home for their family. They want to help address the housing shortage on their reserve and also inspire people to limit their reliance on fossil fuels. The couple has also been leading workshops to teach others how to build these sustainable homes. There is a possibility this housing model will expand, since the construction of any Earthship generally attracts many volunteers who are interested by the model.

Some have taken different measures to combat the First Nations housing crisis. One example is Darlene Necan, a First Nations woman who couldn't find housing in her community of Saugeen First Nation in Northern Ontario.⁹⁰ In 2013, she decided to build a cabin on a piece of land in Savant Lake. The unorganized township is about 20 kilometres from her reserve.⁹¹ The cabin only had one room, no electricity and was built using mostly donated materials including chipboard sheets.⁹² In November 2014, Necan was given a stop work stop-work order and was charged by the Ministry of Natural Resources and Forestry for breaching the Public Land Act.⁹³ Decan was facing upwards of \$10,000 in fines, but in March 2013, the province of Ontario withdrew the charges, saying it was "not in the public interest" to move forward.⁹⁴

⁹⁰ "Homeless Woman Charged for Building Her Own Home."

⁹¹ Ibid.

⁹² Ibid.

⁹³ Ibid.

⁹⁴ "Ontario Withdraws Charges against Homeless Woman Who Built Her Own Cabin."

2.2 The Earthship Mindset

Although there are less than a handful of known Earthships on First Nations land to date, this model for house construction is one that may prove more appealing to First Nations than other options for several reasons. One is the ability to adapt anything as a building material; a second is the focus on who does the building; another is the philosophical approach. In her article *Earthships: The Homes That Trash Built*, social anthropologist Rachel Harkness describes the structures as “autonomous dwellings.” Harkness says Earthships are unique not only in how they are built, but by whom they are built: “It constitutes an architectural project focused on the participatory and ongoing nature of building, rather than an overly professionalized, aesthetic approach to construction.”⁹⁵ The homeowner’s involvement in the construction process is not limited to learning how to build a home. Harkness says building an Earthship also involves a connection to one’s surrounding environment and describes this pursuit of sustainability as more than just a project, but as a “way of life.”⁹⁶

Building an Earthship can be challenging and exhaustive endeavor, so B.C.-based researchers Phillip Vannini and Jonathan Taggart wanted to find out what motivates people, especially those with no experience or credentials, to build these homes. Vannini, an ethnographer and professor at the School of Communication and Culture at Royal Roads University, and Taggart, a photojournalist, travelled across Canada to meet people choosing to live off-grid, to go inside their homes and, more importantly, to go inside their heads to figure out why and how they choose alternative ways to live and build. The phrase DIY or *do-it-yourself* has gained popularity in recent years as people opt for more

⁹⁵ Harkness, “Earthships.”

⁹⁶ Ibid.

independent, hands-on and often cost-effective approaches to maintaining a home.

Vannini and Taggart say this self-reliance is a central part of building an off-grid home, but suggest that another term is needed to more accurately describe the process in which these structures are built. They coined their own term, “D-I-W” or *Do-it-with*.⁹⁷ This concept describes home-building as a relational process: “DIW... highlights the practice of collaborating not only with humans, but also with non-human actors: materials and spaces endowed with a regenerative potential of their own.”⁹⁸

Vannini and Taggart argue that off-grid homebuilders are able to execute these projects because of their “regenerative life skills.” These skills are described as an ability to live sustainably while relying solely on materials that are available at that time and place.⁹⁹ The concept was influenced by the theories of both architect John Lyle and anthropologist Tim Ingold.¹⁰⁰ Lyle’s “regenerative design theory” encourages a construction method that employs “place-specific knowledge,” embraces the use of natural materials and stresses sustainable practices.¹⁰¹ It is centred on the concepts of “renewal and rebirth,” referring to both the way materials are recycled and how the structure itself evolves over time.¹⁰² Ingold’s theoretical framework focuses on ways humans connect with elements and objects around them.¹⁰³ Vannini and Taggart explain Ingold’s philosophy as an “entanglement,” in which the structure and its builder

⁹⁷ Vannini and Taggart, “Do-It-Yourself or Do-It-With?”

⁹⁸ Ibid.

⁹⁹ Ibid.

¹⁰⁰ Ibid.

¹⁰¹ Ibid.

¹⁰² Ibid.

¹⁰³ Ibid.

essentially become one, describing it as “a type of bonding which erases all boundaries between the elements that comprise it.”¹⁰⁴

The people who build off-grid houses can vary as much as the structures they create. However, there appear to be some characteristics that are shared among them. People who build alternative homes like Earthships are more likely to be healthy, educated and have “relatively strong social and economic capital.”¹⁰⁵ Vannini and Taggart say these types of homebuilders usually tend to be self-motivated problem-solvers, driven by the desire to take control of situations.¹⁰⁶ People who embark on endeavours like building Earthships often rely not only on their surrounding environment to construct their homes, but they also tend to have a group of supporters, whether it is a partner, group of friends or an entire community.¹⁰⁷ This is the experience of Eliza Knockwood in Prince Edward Island and Skyler and Kahseeniyo Williams in Ontario. Both Earthship builds have attracted people from both on and off reserve to offer both labour and moral support.

2.3 The Earthship Design

The Earthship model was considered by founding architect Michael Reynolds to have a twofold purpose. The design that originated in the 1970s, as Harkness explains, was a way to solve two completely different issues: “too much litter and too little affordable shelter.”¹⁰⁸ The Earthship marked a shift in the way people thought about recycling garbage and began an “eco-design movement,” defined by its “zero waste” philosophy.¹⁰⁹ And while Reynolds was a pioneer in sustainable architecture, he certainly

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

¹⁰⁷ Ibid.

¹⁰⁸ Harkness, “Earthships.”

¹⁰⁹ Ibid.

was not the first or the only person to incorporate garbage into a building model. The idea of reusing discarded materials is practiced in many parts of the world, particularly the global south.¹¹⁰ In these situations, some builders choose to use recycled materials because they have few other options available to them. Things like plastic bottles and scrap metal are more accessible and provide an obvious substitute to more conventional and expensive building materials. People building Earthships, however, often have a more intentional mindset, according to Harkness. She says they build these particular types of dwellings not just to provide shelter, but out of a sense of obligation to the preservation of their surrounding natural environment.¹¹¹ The goal is to incorporate the structure into that environment as much as possible: “The Earthship does not take place on top of a landscape in opposition to something called ‘Nature’ but rather sits within the environment-world as part of it.”¹¹²

This kind of construction typically is harder to do in industrialized nations, where there are often strict building regulations. Earthships, like other homes built in Canada, must comply with the National Building Code. Provinces and territories are responsible for regulating the design, structure and implementation of fire safety systems.¹¹³ The National Building Code becomes legally enforceable once adopted by individual provinces and territories.¹¹⁴ The code is interpreted and implemented differently by jurisdictions and the process of building an Earthship can, therefore, be more difficult depending on the bylaws of a particular region.

¹¹⁰ Ibid.

¹¹¹ Ibid.

¹¹² Ibid.

¹¹³ Canada, “Model Code Adoption across Canada - National Research Council Canada.”

¹¹⁴ “New Building Codes Means More-Efficient Homes Are on the Horizon.”

Earthships are designed to function without reliance on fossil fuels or publicly supplied power sources, which is why they are often labelled as “off-grid” or “unplugged.”¹¹⁵ Earthships and other off-grid homes have to rely, therefore, on alternative energy sources through technology like solar panels or small wind turbines.¹¹⁶ Earthship builders find other ways to create safe and sustainable living environments by installing cisterns to collect rainwater on the roof. This water is then put through a filtration system or water organization module before being used for drinking or bathing. In some cases, the by-products or waste water are used to grow plants and produce.¹¹⁷ Many Earthships use tires as a foundation and a building frame, giving the house a U-shaped structure.¹¹⁸ These tires are filled with dirt to lock in heat and block out moisture. In areas with colder weather, like Canada, Earthships often include additional insulation or plastic layers that ensure snow and rain don’t penetrate the walls. Some of these Earthships also include woodstoves and toilets that convert waste into ash.¹¹⁹

2.4 Challenges of Implementing Earthships on Reserves

While some people on First Nations reserves in Canada are turning to Earthships as their own solution to a housing crisis, there are undoubtedly challenges along the way, one of which is funding. Ultimately, it is up to the chief of a First Nations reserve to decide how federal housing funds are allotted.¹²⁰ Irving LeBlanc from the AFN says First Nations leaders are often dealing with limited funds and therefore their priority isn’t given to alternative homes like Earthships, but rather to more standard, traditional types

¹¹⁵ Tabb, Phillip James, and A. Senem Deviren, “The greening of architecture : A critical history and survey of contemporary sustainable architecture and urban design.”

¹¹⁶ Harkness, “Earthships.”

¹¹⁷ Purdy, Elizabeth Rholetter, "Green Technology: An A-to-Z Guide."

¹¹⁸ Tabb, Phillip James, and A. Senem Deviren, “The greening of architecture : A critical history and survey of contemporary sustainable architecture and urban design.”

¹¹⁹ Purdy, Elizabeth Rholetter, "Green Technology: An A-to-Z Guide."

¹²⁰ Government of Canada, “Frequently Asked Questions - First Nations On-Reserve Housing.”

of homes. For the most part, homeowners are the ones funding Earthship projects taking place on Canadian reserves today. Their builds are made possible, in part, because of donated materials and volunteer labour. Another challenge in building an Earthship is finding recyclable building materials to use, such as old car tires or scrap metal. Access to these materials can vary based on location. Finally, for those who successfully build an Earthship on a Canadian reserve, though they may find shelter, there is no current evidence to suggest these homes will provide refuge from other problems plaguing First Nations communities such as low employment rates and social problems.

3 Environmentalism and Spirituality

3.1 Relationship with the Land

As First Nations people living on reserve struggle with housing situations and look for alternatives, they are likely to approach the problem somewhat differently than other Canadians. First Nations people building Earthships on reserves say its design principles fit with their ancestral teachings on spirituality, which includes an obligation to preserve one's surrounding natural environment. Many, though certainly not all, First Nations peoples in Canada identify themselves by their connection to the land they inhabit, describing it as an "inseparable relationship."¹²¹ The idea is that their "traditional knowledge" will be passed through multiple generations and shared with non-indigenous communities as well.¹²² Many First Nations, specifically those in coastal regions, follow the principle of "cause and effect."¹²³ This is based on the understanding that humans rely on earth to survive and that to maintain or "balance" this relationship, they must use

¹²¹ Brown, Brown, and British Columbia Government EBook Collection, *Staying the Course, Staying Alive*.

¹²² Ibid.

¹²³ Ibid.

it in a sustainable way.¹²⁴ It is also understood that these teachings are not static, but can be applied to different locations, peoples and time periods.¹²⁵

The Assembly of First Nations describes the reverence for land and respect for the environment not only a tradition, but as an obligation: “First Nations peoples have a special relationship with the earth and all living things in it. This relationship is based on a profound spiritual connection to Mother Earth that guided indigenous peoples to practice reverence, humility and reciprocity.”¹²⁶ Eliza Knockwood says this relationship with Mother Earth can be expressed through the Earthship model, because it is designed to protect and preserve the surrounding environment by reusing waste materials and using power sources other than fossil fuels. She says this is what makes this type of home a natural choice for both her and other members of First Nations communities considering alternative housing options: “I want to use the land to support my life and I want to be able to support that land and I think that’s the model today that we’re striving for. We’re striving for that model of ‘How can we coexist with mother earth and with our environment in an honourable way?’ And I think this is what’s going to allow me to keep my integrity in tact as a sovereign Mi’kmaq woman.”

3.2 Origins of Environmentalism and the Stereotype of The “Noble Indian”

While many First Nations people in Canada affirm their connection to the land as a part of their spiritual identity, their role as original or natural environmentalists is still being contested and in some cases is even seen as a hindrance to their efforts as

¹²⁴ Ibid.

¹²⁵ Ibid.

¹²⁶ "Environmental Stewardship." Assembly of First Nations. Accessed November 1, 2014. <http://www.afn.ca/index.php/en/policy-areas/environmental-stewardship>.

environmental activists. Indigenous peoples of North America are often represented in both academic literature and mainstream news media as the founders of environmentalism, characterized by their inherent knowledge of and respect for the land. Some scholars have questioned the origins of this stereotype and have criticized this representation of the “ecologically noble Indian” as being romanticized, over-simplified and ultimately an inaccurate representation of the diverse nature of indigenous peoples throughout modern-day Canada and the United States. In his article *Transcending the Debate over the Ecologically Noble Indian*, American anthropologist Paul Nadasdy examines how and why indigenous peoples are so often associated with environmentalism, the misunderstandings surrounding that relationship and the problems that arise as a result. While there may not be consensus on how to define *environmentalism*, Nadasdy says most scholars agree the term operates on a spectrum.¹²⁷ This spectrum is divided in three sections: non-environmentalists, reform environmentalists and radical environmentalists.¹²⁸ Non-environmentalists are considered the most “anthropocentric” of the three, holding the view that land, animals and resources exist for the purpose of benefiting humans.¹²⁹ Reform environmentalists believe in harvesting the earth’s natural resources, but also believe it must be maintained and protected.¹³⁰ Finally, radical environmentalists call for a “reconstruction” of how the world operates, seeing this transformation as the only way to prevent human behaviours from damaging the environment.¹³¹ Anthropologist Rachel Harkness describes Earthships as having the ability to “re-order and revalue our world and its constituents,”

¹²⁷ Nadasdy, “Transcending the Debate over the Ecologically Noble Indian.”

¹²⁸ Ibid.

¹²⁹ Ibid.

¹³⁰ Ibid.

¹³¹ Ibid.

while changing how humans interact with the people and places that surround them.¹³²

Based on this definition, many of those choosing to build Earthships would most closely identify as radical environmentalists.

Nadasdy says scholars and environmentalists are often tempted to place indigenous identity on this spectrum. He argues, however, that this practice is problematic, because the spectrum is based a narrow framework: “Since the spectrum is itself a cultural construction, any approach that takes it for granted remains rooted in in Euro-American assumptions about the range of possible relationships between humans and the environment.”¹³³ Nadasday says by focusing on isolated words like “reverence” and “love,” non-indigenous scholars and environmentalists often misinterpret indigenous teachings and ignores the complexities and differences that exist between individual nations.¹³⁴ He also claims that this misunderstanding of indigenous peoples and culture can foster hostility towards them: “But when indigenous people fail to live up to the impossible standards of ecological nobility, Euro-Americans tend to judge them harshly, as guilty of betraying their own cultural beliefs and values.”¹³⁵

Other scholars like Graham Harvey focus less on whether indigenous people were the first environmentalists and more on the extent to which they engage with environmentalism today. Harvey is a lecturer in religious studies at The Open University in the United Kingdom. He writes environmentalism has had a large impact on the shaping of indigenous identity, both internally and from the perspective of European

¹³² Harkness, “Earthships.”

¹³³ Nadasdy, “Transcending the Debate over the Ecologically Noble Indian.”

¹³⁴ Ibid.

¹³⁵ Ibid.

colonists who often referred to indigenous peoples as “others” or “noble savages.”¹³⁶ He says the term “all our relations,” commonly used by diverse groups of Aboriginal peoples, is a summary of their relationship between living and non-living creatures.¹³⁷ Harvey suggests, however, this term should not be interpreted as a “romantic sentiment,” and that by doing so, it implies indigenous people are a static group, resistant to change and evolution: “Tradition, like sociality, requires continuous negotiation, regular contestation, and frequent enhancement. This is of the essence of the respectful behaviours implied in the resonating phrase ‘all our relations.’”¹³⁸ Whatever the complexities of the relationship between First Nations and environmentalism, it is evident that the belief that First Nations people have a special relationship with nature that drives some of those who are looking for alternatives such as Earthships.

¹³⁶ Harvey, “Environmentalism in the Construction of Indigeneity.”

¹³⁷ Ibid.

¹³⁸ Ibid.

Conclusion

Too often, the Canadian media tell stories that focus on the negative side of First Nations issues. We hear about housing shortages, deplorable living conditions and the ongoing controversy over potential causes of these issues, including a lack of federal funding or financial mismanagement by chiefs. Those issues are important, but they don't tell the whole story. Hopefully this project will change that by focusing not only on problems, but also on solutions. It is a story of empowerment and self-reliance, a story of First Nations peoples changing their communities at a grassroots level by turning to alternative housing models like Earthships. The main purpose of an Earthship is to provide a home, but for some First Nations peoples, it means even more. Earthships offer a unique approach to architecture that blends modern environmental technology with traditional First Nations spirituality. It provides them with an innovative way to build homes, without abandoning their reverence and respect to the land. Ultimately, builders like Eliza Knockwood, along with her supporters, hope these, energy-efficient homes could help people on other reserves across Canada that have housing shortages or poor living conditions.

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Feature Component: “Breaking Ground”

Eliza Knockwood rubs her thumb over the edge of a cigarette lighter. In her left hand, she holds a braided string of sweet grass. It’s fraying at the ends and sets off a trail of black smoke when it meets the flame. She cups her hands and brings the scented air to her face. She closes her eyes. And for a moment, she just breathes.

The 33-year-old is standing atop a hill at Abegweit First Nation. Prince Edward Island’s red soil rests beneath her feet. As she stands, she gives thanks. “We’ve always spoke of the earth that we live on as a mother — as a living being,” she says. “I’m cradling her, I’m nurturing her and it’s my responsibility to do that.”

The ground around her is covered in scrap metal, twisted twine, old tires and crumpled blue tarps. It looks like a bunch of junk, scattered cast-offs from an affluent society a world away, even an affront to Mother Earth, but Eliza sees something very different. She sees the building blocks for her future home.

Eliza spent 15 years getting to this point. That’s how long she’s been waiting for a house on her reserve. Today, Eliza lives with her teenage daughter in the basement of her mother’s house. “I’m living out of boxes, like my whole life is in storage. We don’t have our own space to really stretch our arms out and feel that this is home. There’s no sense of true ownership in that. We’re living under another person’s home.”

After all that time, Eliza got fed up. The summer of 2014 she decided to stop waiting and start building. But she didn’t exactly choose what you’d call a conventional house. Instead of using shingles, vinyl and concrete, she’s using mud, tires and old scrap metal. Her house is modelled after something called an Earthship. It’s an environmentally sustainable home that is off-grid and made mostly from natural and recycled materials.

Eliza hopes this will serve not just as a home for her family, but also a prototype for others in her situation. She hopes these low-cost, energy-efficient houses will help other victims of Canada's longstanding on-reserve housing crisis. First Nations communities across the country are facing a housing shortage and, with a rising aboriginal population, some worry it will only get worse.

A 2011 report by Aboriginal Affairs and Northern Development Canada showed that between 20,000 and 35,000 homes would need to be built to meet the immediate needs of First Nations housing communities. Surveys conducted by the Assembly of First Nations estimate the shortage to be upwards of 85,000 units.

Without enough houses, many people on First Nations reserves have to live in homes crammed with multiple families. According to the 2006 census, 26 per cent of people on Canadian reserves were living in overcrowded dwellings, which is six times higher than those living in non-aboriginal communities. This has forced thousands of First Nations people to find their own way of putting a roof over their head. For some, it's meant living raising their children in a basement. For others it's meant sharing cramped bedrooms with friends and relatives. And while that experience may be uncomfortable, inconvenient or even degrading, it's not the biggest problem they face. Overcrowded homes can also be dangerous. The more people in a house, the more likely it is to have moisture build up. Pretty soon black mould is seeping through the ceiling tiles. Viruses and bacteria begin to spread throughout the home and for some that can lead to things like asthma and tuberculosis.

For many in this situation, their only option is to wait for relief. But Eliza Knockwood and a small collection of others are trying to speed up that process — by rethinking what it means to build a home.

Tires, Metal and Mud

Since mid-July, Eliza has been hard at work, tucked in the back of her reserve, hidden from the hundreds of drivers who pass by on St. Peter's Highway every day. There is no address, no street signs. You take a right where the paved road ends. Follow the tracks and don't stop until you can see the river. Then you know you're there. Most days you would find Eliza on the top of this hill with a black bandana on her head, a pair of faded jeans and a sledgehammer in hand. She is determined to build not just a house, but an Earthship. The environmentally friendly, off-grid home was first conceived by American architect Michael Reynolds.

Earthships have been showing up in communities across Canada for years, but never on a First Nations reserve — until now. There are only a handful of Earthships being built on Canadian First Nations reserves today — one in Prince Edward Island and another in Ontario. An additional build is planned for next spring at Six Nations reserve in southern Ontario. Eliza says Earthships are a perfect fit for reserves, because they can blend modern environmental technology with traditional First Nations spirituality. She says it provides indigenous people with an innovative way to build homes, without abandoning their reverence and respect for Mother Earth. It's a way to combine the old with the new, science with spirituality, modern living with ancestral traditions. “It just complements the indigenous perspective and the contemporary perspective so great, you know, it really blends nicely,” Eliza says.

Earthships can take on many different forms. No two are alike. Though hers is not yet finished, Eliza imagines the shape it will take. “It will look like a big mound, just like a big hill.” Tires are a key feature of most Earthships. Fortunately for Eliza, there is no shortage of old tires on PEI. Landfills are overflowing with these mountains of black rubber. “I rented a 12-by-six trailer and filled them up, so each haul got us a couple of hundred tires and so we made about four or five trips.” These tires make the foundation. Each one is filled with dirt that’s packed in tight enough to keep out moisture. For Eliza’s home, the walls are packed nine tires high.

Tires are just the beginning of a long list of unconventional materials Eliza plans to use for her house. Instead of Styrofoam insulation between the walls, she hopes to use doors from old refrigerators. In place of drywall or concrete, the inside walls will be covered in a smooth layer of adobe, a paste-like mixture of water and clay. The roof will be covered with solar panels to power the home. It will also have a cistern that collects water. Eliza plans to rely completely on rain and snow to supply her with the water she needs.

While it may look strange on the outside, Eliza’s home will look much like any other from the inside. It will have two bedrooms, a greenhouse, a kitchen, living room and bathroom. It will also offer a cozy escape during those months where winter winds make it feel like 30 below. The tires will not only give the house its structure, they will also act like an insulator, trapping heat emitted by a woodstove.

It Takes a Village to Build an Earthship

Word travels fast in a place like Prince Edward Island, but it has a way of traveling even faster when the story involves a woman determined to build a house from little more than mud and tires. Eliza knows what people think about her and she's not surprised. Some call her crazy. Others call her brave. Neither title fazes her much. "I wasn't afraid of any backlash and I wasn't afraid of any controversy. I was more excited to be able to show self-empowerment and encouragement and a model ... as an option for other families." They say it takes a village to raise a child. As it turns out, it also takes a village to raise an Earthship.

While the Earthship will only be home to Eliza and her daughter, the project has attracted more than a dozen people from on and off reserve who have donated time, energy and supplies. Since mid-July, volunteers have come by the carload to help build the Earthship. Peter Simon is one of them. He's a 21-year-old youth leader from Elsipogtog, a First Nations community north of Moncton, New Brunswick. He spent most of his summer on PEI and said he felt called by Eliza's "vision of empowerment." Day after day, he went through the same routine. His shovel sliced through a pile of red dirt and rocks. Over and over, he scooped soil and put it into an old car tire. Between each layer, he picked up a 10-pound sledgehammer and hit the dirt until it was flat. He is hundreds of miles from home, building a house he will never live in. But he keeps coming back. "I see the reality that people need to start thinking of another alternative than just waiting for a house that could cost more than needed," he says.

Volunteers were as diverse in their background as they were in their skillset. Some gave old tires and scrap metal; others just gave their support. Few were more

helpful than Jordan Cameron, who gave Eliza the blueprint she needed to build her home. The 22-year-old from Summerside, PEI studied construction technology and had travelled to Arizona, where he learned how to build Earthships. He later built one himself — the first one on PEI. Jordan admits he considered these eco-friendly houses “over the top” when he first heard of them. Now in the final stages of building his home, he sees things differently. “They’re the only ones really doing the full package, you know? You’re reducing your footprint while living directly in harmony with nature.”

A History of Displacement

The story of Earthships on reserves is about more than a few people taking on an interesting and innovative project. It’s part of a much bigger narrative about the struggles First Nations people face finding a home. It’s an understatement to say First Nations housing has been a longstanding problem in Canada. These problems predate Confederation—by more than two centuries. The earliest traces of Canada’s reserve system began in the 1630s when French missionaries created settlements in present-day Quebec as a way to convert indigenous people to Christianity. Before that, many First Nations people were living in more traditional homes like tipis and wigwams. As the number of European settlers rose, so did tensions around land entitlement. Reserves became more popular as a way to solve these disputes. By 1867, “Indians and Indian lands” become the responsibility of the federal government under The British North America Act. This meant the federal government was now responsible for providing First Nations communities with services like education, health, social services and housing. By 1876, that responsibility expanded even further. Under the Indian Act, the government

was now considered a “guardian” of First Nations people. It also meant the minister of Indian Affairs now had authority over of how reserve land was used.

Reserves were often small and contained pieces of land, much different than the larger territories most First Nations peoples were used to living on before Confederation. Reserve land was also considered low quality and lacked valuable natural resources that would help communities generate money. Left with poor land and limited services, First Nations communities eventually became dependent on the federal government for survival. And this dependency was especially strong when it came to housing.

When the federal government began funding First Nations housing, reserves were forced to begin adapting to North American and European-style architecture. This led to many problems, because many members of First Nations communities didn’t have the skillset to maintain this unfamiliar type of home. These houses were typically smaller and weren’t designed to meet the needs of clan-based families. Ultimately, First Nations reserves were left without enough units to house community members, which resulted to overcrowding.

Funding Shortfalls

Today, federal funding provides about \$272 million in annual funding for housing. Housing funds are divided between the Canada Mortgage and Housing Corporation and Aboriginal Affairs and Northern Development Canada. Those funds are then given to the chiefs of individual First Nations communities, who decide how the money should be divided between building and maintaining homes.

Approximately 1,750 homes are built and 3,100 are renovated on First Nations reserves every year through a combination of federal government funding and investments from individual communities.

But some say that money doesn't go far enough to meet the housing needs on Canada's First Nations reserves. Irving LeBlanc works for the Assembly of First Nations. LeBlanc is the special advisor for housing, infrastructure and emergency issues management. The assembly wants approximately 6,000 houses to be built reserves annually to meet the needs of all First Nations. At the cost of approximately \$150,000 per home, LeBlanc calculates it will cost approximately \$1 billion dollars per year —and that's what the assembly is asking of the department of Aboriginal Affairs and Northern Development Canada.

Problems at Abegweit

Funding shortfalls are a familiar problem for Eliza. She lives in Scotchfort, the largest of the three Mi'kmaq communities that make up Abegweit First Nation in eastern PEI. With a combined population of fewer than 500 people, there's no doubt it's a tiny place, even by PEI standards. But despite its size, Abegweit has a serious problem. There aren't enough homes for the people who live there.

Brian Francis has been the chief of Abegweit First Nation since 2007 and oversees all three reserves, Scotchfort, Morell and Rocky Point. Before that, he spent 22 years working for federal government departments, including veterans affairs and fisheries and oceans, holding every position from mailroom clerk to senior management.

His latest job comes with a lot of stress. He feels helpless, knowing he can't provide houses to families that need them. There are about 100 houses on Abegweit First

Nation. He says with a rising population, the demand for new houses is high and will only keep growing. “I have a list of probably 30 families that need a house, so I’m never going to get caught up the way things are going now. I’m never going to get caught up.” Francis says this situation happens all too often. “It doesn’t make it any easier when you have someone sitting there crying, because they have young children, but yet they’re living in a house with six other people and trying to get by.”

According to Francis, Eliza isn’t the only one at Abegweit First Nation whose name has been on a waitlist for more than a decade. “I’ve had people since I became chief that want a house for sure and they’ve been waiting before my time and that’s eight years. So, easily 15 or 20 years average.” He said choosing who gets a house is based on the number of people in the family, how long they’ve been without a house and the living conditions they are in. “But when you only have one a year, it doesn’t take too long to figure that out.”

Francis describes the housing program as “grossly outdated.” He says the only federal funding Abegweit First Nation receives for housing is through ministerial loan guarantees, which are government-backed security for loans on reserves. But he says that funding does not go nearly far enough. “If we’re lucky, we get one new unit a year. If we’re lucky.”

And chief Francis says housing shortages are just the beginning of the problem. He says overcrowded homes and unsafe living conditions are also common. “When I came to office, there was houses that were probably 30 to 40 years old that had not had any repairs done to them, so it’s a massive task to start tackling that.”

He recalled one house with mould and condensation, windows rotting from inside and out and a ceiling collapsed in the bathroom. “It’s just major stuff, you know?” Francis says it’s difficult to keep up with necessary repairs, so the community has found different ways to pay for housing. Most of that money has come from the local lobster fishery and a gas bar that opened in Scotchfort in 2004. “It comes down to our own source revenues. It’s very important, because the only way we’re going to get ahead.”

When Eliza proposed the idea of building an Earthship, chief Francis supported the plan. If someone else was building a house, it was one less he had to worry about. “Given the housing needs in our community, I was in full support when someone comes to me and says ‘I just need a little plot of land and I’ll do the rest myself.’ That’s music to my ears.”

And while he knows it will help Eliza find a home, he’s skeptical it will provide a solution to a national problem. “I don’t think it will take on ... It’s a complicated thing to build from a set of plans. I saw the plans and they’re a book.” But Francis thinks if anything, projects like Earthships will be a way for members of First Nations communities to empower themselves. “Certainly it’s tremendous when someone want to do that, take charge of their own destiny, because it’s very difficult for myself as a leader to have to tell people ‘No, we don’t have a house for you or it’s going to be a few years before you get a house.’”

The “Urban Indian”

Not everyone on a First Nations reserve would even consider a project like this. But Eliza Knockwood’s life has shaped her to be the kind of person who would take on such a feat. For her, it’s about more than building a home. It’s about fighting against the

racism and stereotypes that once held her back — and still affect many First Nations people today.

Eliza is a well-known figure both at Abegweit First Nation and around the island. She works with non-profits that connect native and non-native communities and has long been a vocal advocate for environmental issues. But Eliza wasn't always so sure of herself. When she was four years old, her family left the reserve and moved to Charlottetown. Though it's the capital city, it has a modest population of about 35,000 people. It's the kind of place where people still ask 'Who's your father?' when they meet you for the first time. The city is also only about 25 kilometres southwest of where Eliza was born.

But for Eliza, it was a foreign land. And she quickly realized not everyone wanted to be her neighbour. As she moved on to junior high, Eliza continued her search to find out what it meant to be an "Indian." She turned her focus to academics as a way out. She looked to books as an "escape" from what she endured on the playground and in the classroom. But the struggle continued. The racism persisted. Things went from bad to worse.

"The physical abuse started to really heighten once I got into junior high and I was coming home with bruises and hair pulled from, you know, walking past someone in the hallway and a knife was brought out upon me in Grade 8." That was the breaking point. That's when Eliza's mother, Marie decided, "Enough was enough."

"I knew there was something going on, so I pulled my girls out of school," she says. Eliza and her younger sister, Ginger were homeschooled for the next two years.

“That empowered us to confront racism and to confront isolation or oppression. We were able to move through that, because we were provided with tools,” says Eliza.

Coming Home

After high school, Eliza wanted to move back to Abegweit First Nation, the reserve where she was born. She wanted a community to call home, but when she arrived, things weren't quite what she imagined. “I did experience somewhat of a kind of culture shock,” she said. “I've seen a lot of the states of housing and the battles of black mould and falling-in roofs and just the structural aspect of the housing conditions were really poor.”

Eliza was 19 years old and had just given birth to her daughter, Jade. She was tired of renting apartments and was looking for a home to raise her child. So, she put her name on that housing waitlist 15 years ago. For much of the time afterwards, she lived and travelled throughout Canada, getting involved, she says, in “a lot of national and international youth groups.”

She roamed between Nova Scotia, Prince Edward Island and Ontario as she waited for her name to come up to finally provide a home for her and her daughter. Then, two years ago, something changed. Eliza was living in Halifax at the time and was browsing the DVD section of a local library. One title in particular caught her attention: “Garbage Warrior.” The story was about the architect Michael Reynolds and his radical idea of houses built not with shingles, vinyl and concrete, but with mud, tires and old scrap metal. She signed it out and headed home.

“Watching his documentary really, it just brought me inspiration and it intrigued me.”

As, on the screen, these pieces of the house came together, so did Eliza's thoughts. "Actually seeing people doing it ... and it's providing for their families and it's actually doing what a home should do. I think that's the part that really grabbed me in the end." Eliza hadn't just watched a film, she'd glimpsed a solution. Maybe this was just what First Nations reserves needed, homes built by and for the community.

She saw a way for people to take their life into their own hands. She saw "the solution to a lot of horrific devastation" she had seen in First Nations' families, because they lacked a home or had to crowd with other families under one roof. She saw an alternative to poorly built, soulless, pre-fabricated houses that seemed to reinforce the message that First Nations members were dependent on Canada's government for the basics of life. "I've travelled and I've worked in other provinces and learned a lot of things and knew that these pre-fabricated houses are not only taking jobs away from community members, but they're also not very well made and at a very high, high, high cost," Eliza says. She expects her Earthship will cost between \$15,000 and \$20,000.

Moving Forward

Though he's never set foot on her reserve, Mark Fleischaker is one of Eliza's supporters. He's a structural engineer and member of Living Solutions Group, a B.C.-based cohort of volunteer engineers, environmentalists, teachers and construction professionals united by their enthusiasm for sustainable building practices. Fleischaker and the team are currently working on an Earthship-inspired greenhouse in Langley, B.C. Fleischaker has also spent time in Thailand and India both observing and participating in alternative housing projects, including Earthship builds. Fleischaker says building an

Earthship can present a lot of logistical challenges in urban areas, which have their own interpretation of and implementation of building codes based on different jurisdictions.

But they could have strong potential on reserves. “It might be easier there than elsewhere to set this precedent and there could be a lot of positive spin-offs from doing it, like you see in other Earthship communities and Earthship builds.” He says, however, that will not happen if it is enforced from the outside, and will only be possible if the community members on First Nations reserves have the will to do it. “At the end of the day, we’re not living in it. They have to understand how to live with it. They have to understand it themselves, so there’s an educational component to it.”

Irving LeBlanc of the AFN says some Canadian reserves have ten-year waiting lists and sees the potential in First Nations people choosing alternative housing solutions. “You’re not going to get a house within that time unless you do things your way, you have your own initiative. You either purchase a house, build your own house or start building, an innovative approach to building your own house.”

Those choosing to build homes like Earthships say the process can be very empowering and hope it will serve as an example of how to live alternatively. Eliza Knockwood says by choosing to build their own home, people on First Nations reserves show agency and independence. She says by building alternative homes, First Nations peoples can also have a positive influence on surrounding communities: “I think that the role of First Nations people is really critical today. We’re in a position to set a really good example in how we build from this point forward our communities.” LeBlanc also says for those who choose these homes, it can show resilience: “So that’s really the only [other] way that you could get shelter, your own shelter. So in other words, empowering

yourself to do that, where it's not out of any local government's fault, it's just that the need is so great that they have to do this.”

Mother and child

Eliza calls her home the “mother Earthship.” Every time she swings a hammer, every time she lights sweet grass, this relationship of mother and child is never far from her mind. Eliza understands her childhood was different. She knows not every child was taught stories about the land. But she also doesn't think it's too late for anyone to have that connection to Mother Earth. “I don't think that is anything is lost. I think maybe we've forgotten.”

She hopes her Earthship will remind people of how to rely on the land as their ancestors did. “This build is actually awakening some of that memory of how much we actually enjoy working with the natural elements and being in them.”

Eliza credits “the wisdom of my mother” for teaching her to respect the land, how to collect medicines, and how to get through the darkest of times.

She speaks of the earth itself as a mother, as well. “She's a mom. Just as I am a mother. She's a giver. She's a protector. She takes care of us. She shelters us. She feeds us, clothes us. She gives us all that we need to survive.”

Eliza has been taught by her own mother Marie that if the land is not taken care of, not respected, the earth will simply die. “It will be just waste and it will blow away with the wind.” She well understands that while Earthships are inexpensive and eco-friendly, they aren't likely to push aside traditional forms of housing, or even replace poorly built pre-fabs doled out to waiting-list dependents any time soon.

“People cringe at the idea of free energy or ‘off the grid’ almost as though it’s profanity,” she said. But the way she sees it, living in an Earthship goes much further than just saving money on your family’s oil bill.

“In developing off-the-grid sustainable homes, we’re developing healthier, sustainable, more prosperous families and from there we get into community and from there we can grow into nations.”

And while there may never be a day when Earthships appear on every reserve in Canada, Eliza hopes her example and that of a few others will provide an answer for those who need a home most: “I think a lot of us are feeling like maybe we’re pioneering something and we also have faith that it’s going to take hold really fast, because it already has. It’s starting. The wave is already on its way and we’re riding it.”

Appendix A: Website

URL: <https://blogs.ubc.ca/stephaniekellythesisproject>