

CURRENT LANDSCAPE OF INDIGENOUS-LED HOUSING INNOVATION



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DAVID T FORTIN ARCHITECT

Acknowledgement

For Indigenous communities across the lands now known as Canada, to be "at home" is to be in relation with community and the Land. One can be shelterless and yet still 'at home'. By contrast, "housing" is a concept tied to the provision of shelters where families and individuals can feel safe and comfortable throughout their lives. In preparation of this report, we acknowledge that such provision of housing is only one essential aspect of being 'at home' and that there is still much work to be done in other areas. The projects included here are only a small sample of the inspiring innovation happening across the country, and we acknowledge all of the builders, innovators and community leaders who are working diligently with their communities to best address their specific housing needs. We are overwhelmingly grateful for all of the community members, design teams, and individuals who offered their time and input towards this document. Lastly, a special thank you to Elizabeth Yeoh and Celina Rios Nadeau for all of their efforts in assembling this document.

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Executive Summary

In December 2023, the Government of Canada announced a new initiative for a housing design catalogue. This initiative is being jointly led by Canada Mortgage and Housing Corporation (CMHC) and Housing, Infrastructure and Communities Canada (HICC). As part of this initiative, CMHC engaged an external Indigenous architect and expert in community-led design to better understand how First Nations, Métis, and Inuit governments, organizations, and housing providers have used standardized and culturally appropriate designs to plan and build housing in their communities.

David T. Fortin, a Red River Métis architect, academic, and member of the Royal Architectural Institute of Canada (RAIC) Indigenous Task Force was recruited to prepare a report to discuss the landscape of Indigenous-led housing, both built and currently under development across Canada. The purpose of this report was to explore how the housing design catalogue could be adapted and implemented within First Nations, Métis, and Inuit communities. It includes examples of various innovative design and construction practices across Canada, rather than an exhaustive list.

The development of the report is informed by outreach with Indigenous community leaders, architects, designers, and builders. Some key elements included in the report:

- **History of Indigenous housing design:** The report provides an overview of Indigenous housing designs and discusses the influence of colonialism, its contemporary impacts on Indigenous communities, as well as current challenges. It observes that the housing policies and programs initiated by the government align more with Canadian standards of living rather than with the needs of First Nations, Métis, and Inuit communities. A brief discussion of *The Indian Act* and its influence on Indigenous peoples' lands, culture, and identity is also included. The report views the housing crisis as a multi-pronged systemic issue. It recommends that the challenges facing Indigenous communities be addressed through self-determination and ensuring Indigenous-led solutions for diverse housing responses, housing design within a value-based community network, and establishing financing alternatives.
- **Indigenous-led best practices and design guidelines:** The report offers a concise overview of existing best practices and design guidelines, emphasizing their practicality, innovative approaches, cultural relevance, and suitability for housing construction across First Nations, Métis, and Inuit communities and regions.
- **Overview of Indigenous-led (and Indigenous-partnered) housing projects and design approaches:** These projects across Canada vary in scale from tiny homes to large urban developments and demonstrate that housing projects developed with and by Indigenous people result in healthier, more adaptable homes where communities thrive. Indigenous leadership is evident in a variety of roles in these projects, from clients, designers, builders, developers, funding, and management. The involvement of the community in these projects enables better connections and understanding of community needs and values. Innovative approaches are responsive to community needs and address concerns such as cultural appropriateness and expression, accessibility, affordability, adaptability, services, economic development, and connection to the broader community.

- **Innovative construction and diverse housing options along the housing continuum:** Housing projects using different types of construction or design features (modular and volumetric modular construction, prefabricated building components, panel systems, community-led design, energy efficiency features and systems, and Indigenous urban development) are covered in the report. The report also provides information on the projects' location, stage of completion, clientele, and housing type. These projects address different types of housing needs, such as emergency shelter, transitional housing, multi-unit, single and family dwellings, elder housing, student housing, youth residence, and housing for multi-generational families.

The projects showcased in this report demonstrate that housing designs and needs vary significantly among First Nations, Métis, and Inuit communities, and are influenced by the communities' expertise, cultural practices, geographic location, and climate. Therefore, any housing design catalogue should consider these diverse criteria, as standardized housing models have historically proven to be ineffective and colonial in addressing the diverse needs of Indigenous communities.

The most promising approach lies in the community-led design and construction of homes tailored to specific needs. It is crucial that housing initiatives for Indigenous communities be Indigenous-led, foster economic development, and build capacity, while also respecting and integrating treaty rights and cultural and spiritual values. For example, in remote areas, prioritizing strategies that utilize local materials, skills, and labor should be considered. In urbanized areas where standardized housing models are feasible and housing production can take place, it is crucial for Indigenous people to lead the design, manufacturing, and production process. This is especially important when housing components are delivered to remote Indigenous communities, to ensure long-term benefits and a sense of community ownership.

Résumé

En décembre 2023, le gouvernement du Canada a annoncé une nouvelle initiative pour un Catalogue de conceptions de logements. Cette initiative est dirigée conjointement par la Société canadienne d'hypothèques et de logement (SCHL) et Logement, Infrastructures et Collectivités Canada (LICC). Dans le cadre de cette initiative, la Société canadienne d'hypothèques et de logement a retenu les services d'un architecte autochtone externe, expert en conception communautaire. L'objectif est de mieux comprendre comment les gouvernements, les organisations et les fournisseurs de logements des Premières Nations, des Métis et des Inuits ont tiré parti de conceptions normalisées et adaptées à la culture pour planifier et construire des logements dans leurs communautés.

Nous avons fait appel à David T. Fortin, architecte métis de la rivière Rouge, universitaire et membre du Groupe de travail autochtone de l'Institut royal d'architecture du Canada. Il a été recruté pour préparer un rapport sur le contexte du logement dirigé par des Autochtones partout au Canada. On cible les habitations construites ou en cours d'aménagement. Ce rapport avait pour but d'explorer la façon dont le Catalogue de conceptions de logements pourrait être adapté et mis en œuvre dans les communautés des Premières Nations, des Métis et des Inuits. Il comprend des exemples de diverses pratiques novatrices en matière de conception et de construction au Canada, plutôt qu'une liste exhaustive.

L'élaboration du rapport repose sur des activités de liaison avec des dirigeants communautaires, des architectes, des concepteurs et des constructeurs autochtones. Voici certains des principaux éléments du rapport :

- **Historique de la conception de logements pour les Autochtones:** Le rapport offre un aperçu des conceptions de logements pour les Autochtones. Il traite de l'influence du colonialisme, de ses répercussions contemporaines sur les communautés autochtones ainsi que des défis actuels. Il souligne que les politiques et les programmes de logement mis en place par le gouvernement cadrent davantage avec les normes de vie canadiennes qu'avec les besoins des communautés des Premières Nations, des Métis et des Inuits. Il comprend aussi une brève discussion sur la Loi sur les Indiens et son influence sur les terres, la culture et l'identité des peuples autochtones. Le rapport considère la crise du logement comme un problème systémique à plusieurs volets. On y recommande que les défis auxquels se heurtent les communautés autochtones soient relevés au moyen de l'autodétermination. On doit veiller à ce que des solutions dirigées par les Autochtones soient adoptées pour diverses interventions en matière de logement, la conception de logements au sein d'un réseau communautaire fondé sur les valeurs et l'établissement de solutions de financement.
- **Pratiques exemplaires et lignes directrices pour la conception dirigées par les Autochtones:** Le rapport offre un aperçu concis des pratiques exemplaires et des lignes directrices existantes en matière de conception. Il met l'accent sur leur caractère pratique, leurs approches novatrices, leur pertinence culturelle et leur adéquation pour la construction de logements dans les communautés et les régions des Premières Nations, des Métis et des Inuits.
- **Aperçu des approches de conception et des ensembles résidentiels dirigés par des Autochtones (et en partenariat avec les Autochtones):** La taille de ces ensembles résidentiels au Canada varie, allant des micromaisons aux grands aménagements urbains. Cette variabilité démontre que les ensembles d'habitation aménagés avec et par les Autochtones offrent des logements plus sains et plus adaptables, où les habitants s'épanouissent. Le leadership autochtone est évident dans divers rôles dans ces ensembles, qu'il s'agisse de clients, de concepteurs, de constructeurs ou de promoteurs, ainsi que dans les domaines du financement et de la gestion. La participation de la communauté permet d'améliorer les liens ainsi que la compréhension des besoins et des valeurs de la communauté. Les approches novatrices s'adaptent à ces besoins. Elles répondent à des préoccupations comme la pertinence et l'expression culturelles,

l'accessibilité, l'abordabilité, l'adaptabilité, les services, le développement économique et les liens avec la communauté dans son ensemble.

- **Construction novatrice et diverses options de logement dans le continuum du logement:** Le rapport aborde les ensembles de logements réalisés selon différents types de construction ou de conception (construction modulaire et modulaire volumétrique, composants du bâtiment préfabriqués, systèmes à panneaux, conception communautaire, caractéristiques et systèmes écoénergétiques, et aménagement urbain autochtone). Le rapport fournit aussi des renseignements sur l'emplacement, l'état d'avancement, la clientèle et le type de logements des ensembles résidentiels. Ces derniers répondent à différents types de besoins en matière de logement et peuvent prendre diverses formes : maisons d'hébergement d'urgence, logements de transition, immeubles collectifs, maisons individuelles, logements pour personnes âgées, logements pour étudiants, résidences pour jeunes et logements pour familles multigénérationnelles.

Les ensembles résidentiels présentés dans ce rapport démontrent que les conceptions et les besoins en matière de logement varient considérablement entre les communautés des Premières Nations, des Métis et des Inuits. Ils sont influencés par l'expertise, les pratiques culturelles, l'emplacement géographique et le climat des communautés. Par conséquent, tout catalogue de conceptions de logements devrait tenir compte de ces divers critères. En effet, les modèles de logement normalisés se sont historiquement révélés inefficaces et colonialistes dans leur réponse aux divers besoins des communautés autochtones.

L'approche la plus prometteuse est la conception communautaire et la construction de logements adaptés aux besoins particuliers. Il est essentiel que les initiatives de logement pour les communautés autochtones soient dirigées par des Autochtones. Elles doivent favoriser le développement économique et des capacités, tout en respectant et en intégrant les droits issus de traités et les valeurs culturelles et spirituelles. Par exemple, dans les régions éloignées, il faudrait envisager de privilégier des stratégies qui se fondent sur les compétences, la main-d'œuvre et les matériaux locaux. Dans les régions urbanisées où des modèles de logement normalisés sont réalisables et où la création de logements est possible, il est essentiel que les Autochtones dirigent les processus de conception, de fabrication et de production. Cet aspect est particulièrement important lorsque des composantes de logement sont livrées à des communautés autochtones éloignées. On offre ainsi des avantages à long terme et un sentiment de propriété communautaire.

Cover image: Street view of the design for the Thunder Woman Lodge in Scarborough, rendering, Smoke Architecture.

© David T Fortin Architect, August 2024

About this Document

In May 2024, the Canada Mortgage and Housing Corporation (CMHC) contacted David T. Fortin Architect to prepare a report summarizing the current landscape of Indigenous-led housing, both built and currently under development across Canada. Its purpose is to categorize and build awareness about community-driven innovations in housing design and construction processes.

This report has been developed with contributions by community leaders, architects, designers, and builders. The 39 projects selected reflect the varying housing needs and conditions of First Nations, Inuit, and Métis communities throughout Canada. The findings in this report demonstrate the value of Indigenous leadership and provide considerations for approaching Indigenous-led design and construction processes. Each project offers important lessons intended to encourage discussion and decision-making at the CMHC as they work with community partners to address nationwide housing shortfalls and shortages moving forward.

It is important to note that the limited time allowed to collect information for this report, given the vast geography of the lands now known as Canada and the many First Nations, Inuit, and Métis communities working on addressing housing needs, inevitably will fall short in its comprehensiveness. Innovation is happening in communities in different ways from coast to coast to coast. While we have reached out to many Indigenous housing leaders through our contacts and through our research, we acknowledge that there are many, many initiatives that we remain unaware of. Our intent is thus to provide a cross section of some of the initiatives we were able to include given the scope of our involvement in the hope that CMHC can have a starting point to gain awareness about them as well as contact information for various people across the country. Our goal is thus to both build awareness about recent Indigenous-led housing innovations and also encourage CMHC and other housing providers to work directly with Indigenous leaders to meet supply challenges moving forward.



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INTRODUCTION

Overview

There is a long and disruptive legacy of housing being designed ‘for’ First Nations, Inuit, and Métis communities in Canada, rather than being led ‘by’ them. The contemporary housing crisis has its origins in colonialism, as housing has long been a form of colonial violence. As David Fortin describes, “from the moment government-funded buildings, designed “for” the betterment of Indigenous peoples were drawn, an attempt to sever them from their culture, their built environment and their land was initiated” (Fortin, 2020, 247). Used as a means to regulate Indigenous peoples’ lives, government housing responses for Indigenous communities have historically not only served to disempower them but have largely fallen short of performing to adequate standards and meeting their specific cultural and place-based needs.

While far beyond the scope of this report, it is essential to be mindful that Indigenous peoples have been ‘at home’ with the land since time immemorial, designing and building ‘housing’ that supports their cultural beliefs and customs, as well as their way of life. In all areas of Canadian society, it is now largely acknowledged that Indigenous knowledge supported ways of living that were deeply sustainable and spiritually connected to the land. All buildings, including housing, are ultimately reflections of the social and technological structures of societies and are critical expressions of their community’s agency. Contemporary Indigenous housing strategies should prioritize these values as well.

This report thus recognizes the resilient capacity of community knowledge and agency to determine housing solutions for themselves, which is highly relevant in the context of the contemporary housing crisis. As foregrounded in our summary, community-led responses to the housing crisis have the potential to create healthy, culturally appropriate, sustainable, and affordable homes for generations to come.

Housing Crisis Facing Indigenous Peoples

At a glance, contemporary housing issues affecting First Nations, Inuit, and Métis peoples on- and off-reserves in Canada are complex and diverse, and crippled by systemic barriers, making this crisis difficult to resolve. Following the perspective of the National Collaborating Centre for Aboriginal Health, assessing the quality of Indigenous housing needs to go beyond its physical condition to include its social and environmental dimensions (Housing as a Social Determinant of First Nations, Inuit, and Métis Health, 2017, 1). In a holistic sense, the quality of Indigenous housing has largely not met the standards and needs of communities it is serving. Issues with quality and standards are compounded by a nation-wide shortage in the housing supply connected to issues of affordability, accessibility, deficiency in variety of housing typologies (co-ops, co-housing, etc.), housing insecurity, and resources and financing for new development projects.



Sanirajak community housing, photograph, Bawating Building Science.

Five years ago, findings by the CMHC indicate that nationally, 67.6% of Indigenous households on-reserve were living in or able to access adequate and suitable housing (CMHC, 2022). More recently, the 2021 Census by Statistics Canada indicates that 16.4% of Indigenous people reported to be living in a dwelling in need of major repairs, while over 1 in 6 (17.1%) Indigenous people were living in crowded housing – a population nearly twice as large as the non-Indigenous population (9.4%) living in similar conditions – with the majority listed as multi-generational households (Statistics Canada, 2022). In both the cases of housing in need of major repairs and crowding, Inuit and First Nations populations living on-reserve are found to be more impacted (Statistics Canada, 2022). Affordable and core housing need remain further concerns with 16.8% and 13.2% of Indigenous people respectively identified (Statistics Canada, 2023). Compared to figures from the previous 2016 Census, these cases have declined among Indigenous peoples overall. These statistics serve as reminders of the enduring gaps in Indigenous housing broadly; however, do not provide a glimpse into some of the specific issues.

For example, housing is shown to have a direct impact on health. Mould issues are pronounced in crowded homes where there is increased internal humidity (von Stackelberg, 2019). A study of four First Nations communities in Northwestern Ontario notes that dwellings with poor indoor environmental quality, compromised predominantly by water penetration through the building enclosure, are linked to higher rates of lower respiratory tract infection among children (Kovesi et al., 2022, E85–E86). Rising environmental instabilities due to climate change are exacerbated by housing that is not suitable and increasingly compromising community safety and their rights to remain in their lands. Barriers in resources and community capacity to finance and retrofit existing homes or build new ones remain a further problem.

Housing issues are also shown to be disproportionately faced by already vulnerable populations of Indigenous peoples. The Native Women's Association of Canada (NWAC) links housing issues faced by Indigenous women, girls, gender-diverse, and Two-Spirit people to issues such as intergenerational trauma from residential schools, systemic racism, violence against Indigenous women and girls, housing inequalities, the lack of appropriate housing and accessible and culturally appropriate services, and homelessness (Native Women's Association of Canada, March 31, 2020, 14). A unique experience of Métis women and 2SLGBTQQIA+ people surveyed by Les Femmes Michif Otipemisiwak is that of "intergenerational displacement/dispossession" that links their struggle to access housing with the "displacement of their families and communities through (among other things) colonization, scrip, and road allowances" (Les Femmes Michif Otipemisiwak, March 2022, 36–38). Barriers to housing access and security broadly affecting Indigenous women and gender-diverse people include affordability, discrimination from housing providers, safety, barriers



From top to bottom: Bungalow with separate water tank shed in Bunibonibee Cree Nation, Smoke Architecture, "Culture and Context Report," 69; and Peguis First Nation member William Sutherland's property during a flood in April 2024, adapted from Douglas Thomas, video, April 9, 2024, Youtube.



From top to bottom: Déline Housing, rendering, Formline Architecture + Urbanism Inc.; Dave Pranteau Aboriginal Children's Village opening day ceremony, photograph, Province of BC; misatimosimōwin mīhkwāp (Horse Dance Lodge) construction, photograph, Big Block Construction; and Victoria Blake Memorial Elders Home, photograph, Taylor Architecture Group.

to culture, overcrowding, and access to services (Native Women's Association of Canada, March 31, 2020, 33–65). Experiences with homeless services by urban Inuit women and gender-diverse Inuit point to a need for funding Inuit organizations and service providers to support culturally appropriate services in shelters (Pauktuutit Inuit Women of Canada, April 2022, 20).

Community-led Housing Initiatives

Building on existing studies identifying the shortcomings of Indigenous housing on- and off-reserves, this report understands that the housing crisis is a systemic issue that cannot be resolved through a return to government-led and even conventional architectural design processes. There has been a notable shift in the focus on Indigenous leadership in development projects catalysed by the Truth and Reconciliation Commission of Canada's Calls to Action towards the process of reconciliation in light of its findings on the legacy of government-run residential schools. Applicable to the context of Indigenous housing, Call to Action #92 asks the corporate sector to commit to meaningful consultation and building respectful relationships with Indigenous peoples before initiating economic development projects (Truth and Reconciliation Commission of Canada: Calls to Action, 2015, 10). Echoing the TRC Calls to Action, the United Nations state that Indigenous peoples have the right to be actively involved in the development of housing on their lands. But as Fortin cautions, Indigenous leadership and involvement in such projects are often met with design processes rooted in "non-Indigenous methods, expertise and training" and which run the risk of being culturally disconnected (Fortin, 2020, 245–246).

Community leadership in housing development is therefore critical to producing meaningful change and addressing the specific needs of communities. These processes can leverage local ways of knowing, methods, and resources, and thus, propel housing innovation while building capacity and economic benefits for each community.

Contents of the Report

This report is the result of an environmental scan that aims to showcase a sample of housing responses in communities across Canada developed through processes led by First Nations, Inuit, and Métis peoples in all stages of design and implementation. Ranging from the scale of a tiny home to a large urban development, these examples show that housing 'with' and 'by' Indigenous peoples has significant capacity to produce healthier and more responsive homes that align with community agency and self-determination. Furthermore, it offers strategic questions for how non-Indigenous developers, designers, builders, and consultants can meaningfully enter into partnerships with Indigenous communities to support and realize their housing projects.

RESEARCH LIMITATIONS

Timeline of Environmental Scan

Given the short timeline to complete this environmental scan, this report is by no means intended to comprehensively capture all Indigenous-led and innovative housing projects in Canada. Furthermore, the summaries of each project do not go into extensive detail; instead, they aim to broadly identify how Indigenous individuals, communities, or organizations were involved in its realization, and the design innovations that emerged through this process. This time frame proved challenging to collect a broad selection of projects and gather resources. In some cases, this limited our ability to build a common understanding and trust with communities and/or project leaders that would allow them to feel comfortable disclosing information about their projects.

Project Selection

Several projects that were originally intended to be included were omitted from the final publication due to the community and/or project leaders' concerns ranging from how the project was being represented, restrictions surrounding the distribution of project information, and the association of the report with the CMHC.

Housing in Northern Indigenous Communities

It is critical to acknowledge the particular challenges and gaps in understanding about housing in the North – a region that has evolved rapidly in recent decades and is continuing to do so. These specific conditions have made it difficult for Inuit and First Nations communities who call the region home to take charge of their housing.

Several indicators of housing deficiencies in the North are identified in the 2021 Census by Statistics Canada, including the 32.6% of Inuit who are in core housing need; the over half of Inuit living in crowded housing, specifically in Nunavut; and the increased likelihood of Inuit living in Inuit Nunangat to reside in homes needing major repairs (Statistics Canada, 2022). As explained in the Inuit Nunangat Housing Strategy, acquiring sufficient capital to build new housing and repair aging units is difficult, which has created a reliance on government funding (Crown-Indigenous Relations and Northern Affairs Canada, 2019). The construction of housing in the North is dependent on existing northern infrastructural networks, which are already in deficit and made even more vulnerable through their exposure to extreme conditions and climate change and costly operations (National Round Table on the Environment and the Economy, 2009, 47–49). Other issues compounding the effects of the housing crisis include the high costs of transportation, construction, operations, and maintenance; climatic challenges; and lack of diversity in housing options across the housing continuum (Crown-Indigenous Relations and Northern Affairs Canada, 2019).

The quality and appropriateness of the existing housing stock in the North is yet another challenge that reveals the need for more regionally responsive design. Inuit youth leaders interviewed in a report by the Inuit Tapiriit Kanatami expressed the importance of increasing access to good quality housing to support physical and mental health, regionally appropriate design, affordability, and environmental sustainability (Inuit Tapiriit Kanatami, 2016, 3–5). When it comes to evaluating homes, research on green building standards has shown that certification systems such as LEED and BREEAM do not have rating tools for specifically accounting for the conditions in northern and Arctic regions (Yu Buryachenko et al., 2021, 8). In recent years resources, such as the Inuit Tapiriit Kanatami’s case studies into successful housing programs in *Best Practices in Sustainable Housing Delivery in Inuit Nunangat*, have identified best practices for housing in the North. The Government of Nunavut’s *Good Building Practices* also aims to provide regionally specific guidance.

With this recognition of the unique housing crisis in the North, it is critical that future directions for housing in this region not only prioritize quantity but encourage community leadership on housing initiatives and driving innovation. While this report covers several contemporary Indigenous-led and innovative housing projects in Inuit Nunangat and other Northern Indigenous communities, the output and thus representation of such projects is noticeably fewer than their Southern counterparts. We recognize that this report falls short of capturing the range and complexity of issues in Northern communities.



Maison Rouge (Red House) in the village of Kangiqsualujjuaq in Nunavik, photograph, Blouin Orzes architectes.

LIST OF TERMS

acceptable housing: defined by the CMHC as being “adequate in condition, suitable in size, and affordable” (CMHC, n.d.).

adequate housing: housing that is not in need of major repairs, such having a damaged structure or utilities, according to its residents (CMHC, n.d.).

affordable housing: applies to any form of housing and housing tenure and is conventionally defined using the shelter-cost-to-income-ratio to have shelter costs equal to or less than 30% of total before-tax household income (CMHC, January 2019, 1). An alternative method for determining affordability includes the residual income/basic needs threshold, which subtracts non-shelter costs from the before-tax household income while accounting for household size and composition (CMHC, January 2019, 1).

core housing need: determined if a household is not living in acceptable housing and does not have a sufficient before-tax household income to access acceptable housing locally (CMHC, n.d.).

healthy housing: supports physical, mental, emotional, and spiritual health, social wellbeing, as well as healing processes in recognition of traditional understandings of wellness.

Indigenous-led: housing design and implementation processes defined as Indigenous-led encompass a range of decision-making power by a First Nations, Inuit, or Métis community and/or organization, from involvement, to collaboration, to design, and to realizing concrete changes that support self-determination.

innovative: linked to Indigenous leadership, innovation is defined by unique or novel responses to the housing crisis in design, manufacturing, and assembly. The report categorizes these innovations as “modular (single story),” “volumetric modular (up to 3 stories),” “panel systems,” “prefabricated building components,” “community-led design,” and “energy efficiency and systems.”

suitable housing: provides sufficient bedrooms for the household size and composition, according to National Occupancy Standard (NOS) requirements (CMHC, n.d.).

HISTORY OF INDIGENOUS HOUSING

Following the establishment of the reserve system for First Nations peoples across the country, alongside the concurrent dispossession of their lands, came the need to address their unique housing needs. Government-initiated housing policies and programs were thus borne out of disparaging and paternalistic attitudes towards the freedoms and rights of Indigenous communities to determine how they live. Their framing in many instances, was presented as an act of social good to align Indigenous peoples' housing and in tandem, their lifestyles, with settler Canadian standards. Altogether, the history of these government housing initiatives is mired in the suppression of Indigenous sovereignty and assimilation.

Precursor to Housing Interventions

The oppressive legislation of the 1867 *Indian Act* initiated a national-scale restructuring of First Nations peoples' lands, culture, and identity. It established status recognition for First Nations, while excluding Inuit and Métis peoples entirely. As Leanne Betasamosake Simpson describes, it saw the erasure of First Nations sovereignty over their traditional lands by suppressing their political power and eliminating their ability to “hold settlers accountable in their lands” (Simpson, 2017, 88). Through the creation of reserves abiding by “colonial economics,” according to Jacob Mans and Alex Wilson, First Nations communities were often forcibly displaced to lands deemed economically undesirable and destined to impoverish them (Mans and Wilson, 2019, 172).

Anglo-Canadian settlement and expansion led Métis people to face similar incursions and dispossessions of their traditional lands. In the late 1800s, settler violence drove the majority of the Métis population in the Red River area from their homeland west to present-day Saskatchewan and Alberta (Les Femmes Michif Otipemisiwak, March 2022, 10–12).

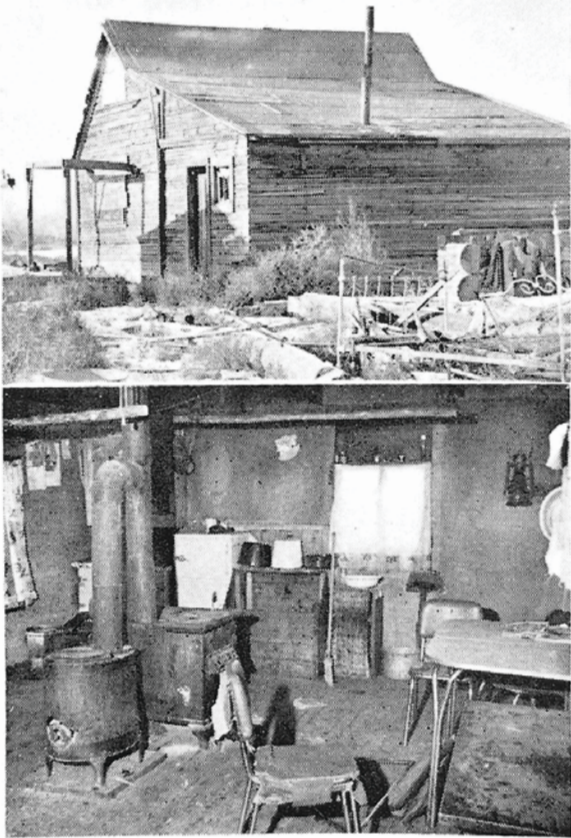
In the 1950s, the Government of Canada, seeking to establish Canadian sovereignty in the North, forcibly relocated Inuit families to settle the High Arctic (Royal Commission on Aboriginal Peoples, 1994, 136). In 1953 and 1955, around 92 Inuit were relocated by the RCMP from Inukjuak (formerly Port Harrison) and Pond Inlet to Craig Harbour and Resolute Bay (Royal Commission on Aboriginal Peoples, 1994, 7). Despite being promised good quality housing, schooling, employment, and medical services in the settlements, Inuit who were relocated have reported the opposite, evidenced by the absence of infrastructure and services (Qikiqtani Inuit Association, 2013, 12–13; Royal Commission on Aboriginal Peoples, 1994, 24–29).

Government-led Housing Policies and Programs

We can trace the legacy of these efforts to control and assimilate Indigenous peoples to subsequent moves by the government to design and deliver housing to communities. As researcher



Basic house plan designed by Indian Affairs Branch architects. Norman Riddiough, “Better Housing for Canada’s Indians,” *Ontario Housing*, February 1962.



These pictures speak for themselves. Fortunately such hovels are now being abandoned and replaced by adequate housing.

Discriminatory perceptions of Indigenous housing coincide with government-led interventions. Norman Riddiough, "Better Housing for Canada's Indians," *Ontario Housing*, February 1962.

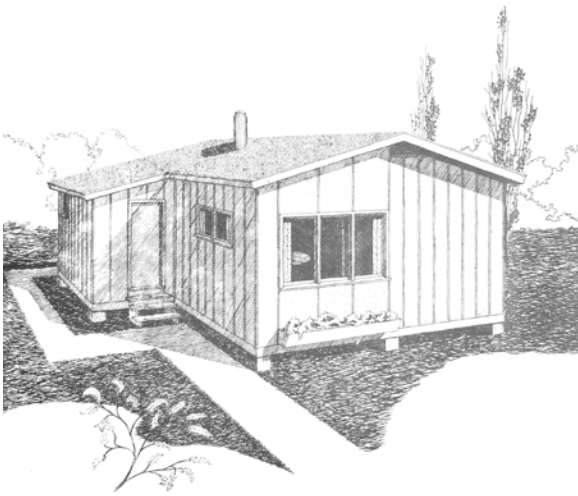
Magdalena Milosz describes, European settlers have been attempting to assimilate Indigenous peoples through domestic spaces, often linked to missionary activities, since at least the nineteenth century (Milosz, 2020, 81–82). The decades following the Second World War, however, saw an emergence of government issued policies and programs that would come to shape housing in Indigenous communities both on- and off-reserve.

Catalogue housing, notably the 1959 publication, *Canadian Indian Homes* by the Indian Affairs Branch, sought to regulate and standardize Indigenous housing and domestic life. A *Subsidy Housing Program* was subsequently released by the Indian Affairs Branch in 1962, which offered Indigenous communities and individuals grants and plans for four standard subsidy homes (Indian Affairs Branch, April 1, 1962).

Summarizing the intentions of these early government housing initiatives, an article in the February 1962 Issue of *Ontario Housing* titled, "Better Housing for Canada's Indians" describes a need to address what it refers to as "substandard" housing in Indigenous communities and "close the gap between the standards of Indian and non-Indian housing which existed at the end of the war" (Riddiough, 1962, 12). Much of the language used in the article presents a primitive characterization of Indigenous lifeways existing outside of settler norms of property ownership and domestic typologies. Conversely, echoing the tone of both documents by Indian Affairs Branch, it lauds efforts to introduce modern, technological housing as an act of social good – part of as a broader "rehabilitation program" that would integrate Indigenous peoples into Canadian society (Riddiough, 1962, 12). Government housing programs, such as the Eskimo Housing Loan Program, were introduced in the North in the 1950s and 1960s, urging Inuit to live in "sanitary" houses built in permanent settlements and enter a wage-based economy (Qikiqtani Inuit Association, 2013, 12–18).

Despite government claims, moves to supply adequate housing for Indigenous peoples did not deliver on their promises. For instance, the designs featured in *Canadian Indian Homes* emulate the standards of an altogether different era and use: temporary rental housing for war workers and veterans developed by Wartime Housing Limited in WWII (Milosz, 2020, 84–85). Quality and suitability issues were also present in Qikiqtaaluk with government housing modelled after Southern designs, built cheaply, and arriving to Inuit residents with defects (Qikiqtani Inuit Association, 2013, 27).

As revealed in recent scholarship, government interventions in Indigenous housing have not only proven to be inadequate and poorly constructed but have additionally served as a means of assimilation under the guise of social good. Milosz argues that alongside home economics classrooms and model homes in residential schools, housing functions as one of three "domestic contact zones" between Indigenous peoples and the settler colonial state designed to reinforce and transmit settler colonial



Subsidy House Plan "C" from the *Subsidy Housing Program*, Indian Affairs Branch, 1962.

domestic ideology on Indigenous peoples – a process which is intended “to infiltrate and harm Indigenous ways of being, with the overall goal of eradicating” Indigenous sovereignty” (Milosz, 2020, 81–82). For Fortin, the form of commoditized and prefabricated dwelling endorsed by the government “is incongruent with Indigenous perceptions of material, space, and home building. Yet generations of such practices have resulted in an acceptance of this kind of detachment between dweller, house, and place” (David T Fortin Architect, April 6, 2018, 2). This is a condition Fortin has described in regard to housing on the Métis Settlements where a small mention of factory assembled housing being acceptable led to an influx of substandard housing throughout the communities (Fortin, 2015, 16).

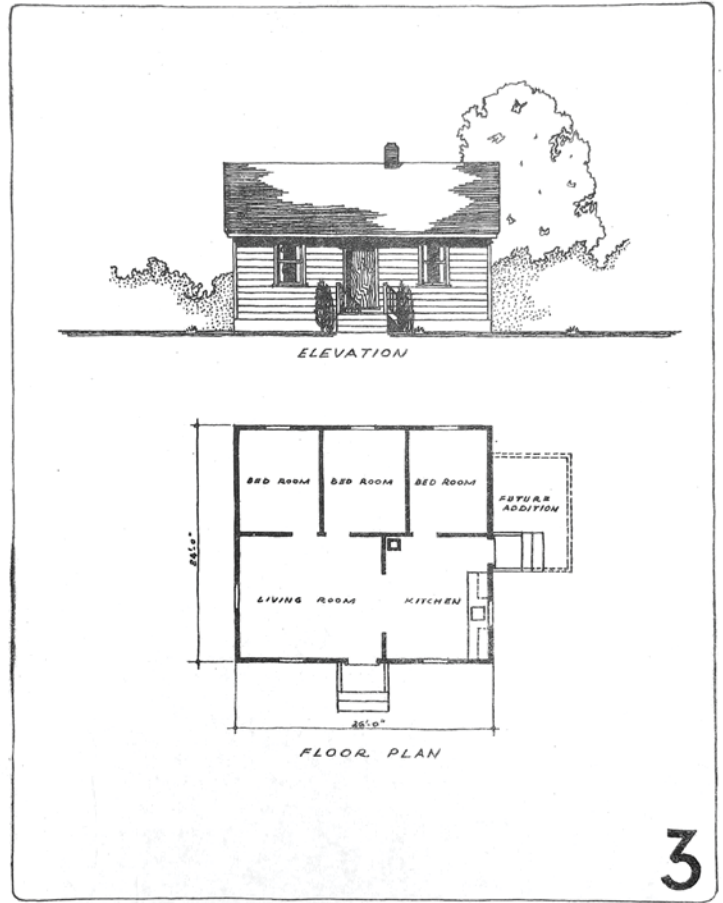
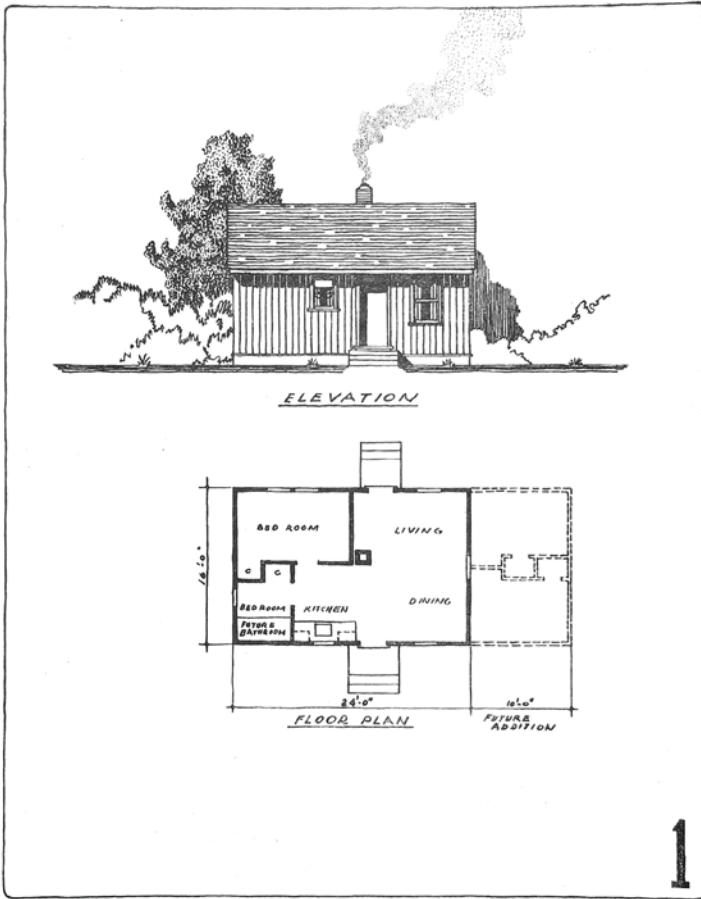
Contemporary Impacts

The Government of Canada’s legacy of designing and delivering housing to Indigenous communities through its colonial agenda has produced reverberating impacts on how homes in these contexts continue to be built today. As described by scholar Shelagh McCartney, “[t]he housing crisis facing Canada’s Indigenous population is the physical manifestation of the continued implementation of assimilative policies of Canada’s federal government, from the Gradual Civilization Act through to the Indian Act” (McCartney, 2016, 21).

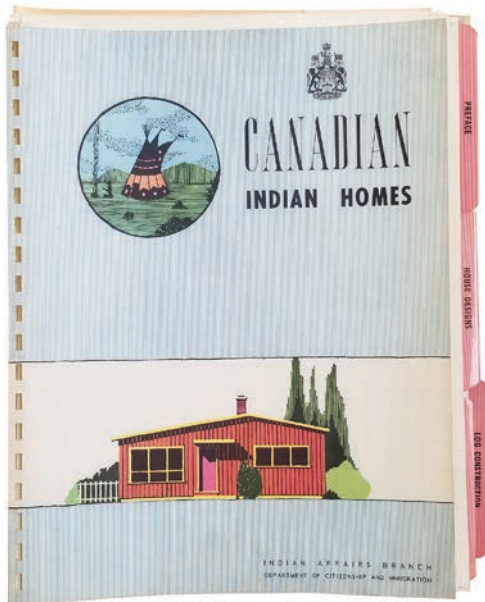
Top-down approaches where voices outside of communities have decision-making power over housing is problematic. McCartney adds that the “[r]eliance on technical, scientific knowledge and coercion through the language of participation has undermined Indigenous people from participating in the development of their housing” (McCartney, 2016, 27). As Fortin argues, “design” itself is “an imported approach to drawing and building” that enacted “the first spatial disruptions” experienced by Indigenous peoples (David T Fortin Architect, April 6, 2018, 17).

Offering a potential to increase Indigenous-led housing projects in the near future, the Government of Canada announced in its Budget 2023 that it would be committing \$4 billion in funding to implement an Urban, Rural and Northern Indigenous Housing Strategy and establish a National Indigenous Housing Centre (CMHC, 2023). Such efforts begin to confront the resources and capacity of First Nations, Inuit, and Métis communities to address their individual housing needs and ultimately build better and more appropriate homes.

CATALOGUE HOUSING



House Plans "1" and "3" from *Canadian Indian Homes*, Indian Affairs Branch, 1959.

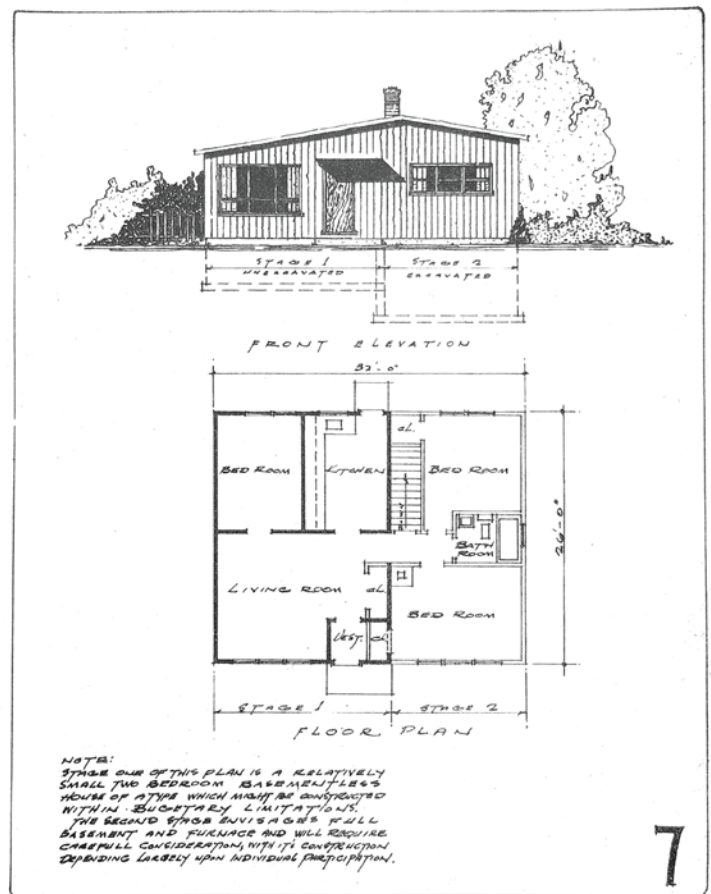
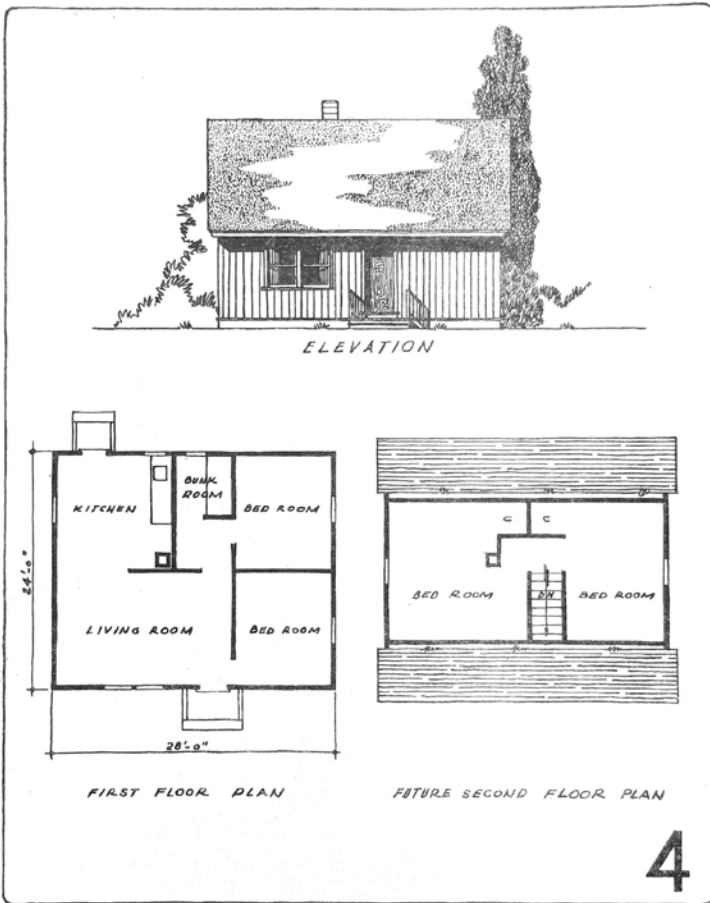


Cover of *Canadian Indian Homes*, Indian Affairs Branch, 1959.

Indian Affairs Branch, *Canadian Indian Homes*, 1959

The emergence of catalogue housing introduced government-regulated standardization in housing and domestic life for Indigenous communities. *Canadian Indian Homes*, published by the federal government's Indian Affairs Branch in 1959, presents one such example, intended for First Nations Band Councils and individuals. The document presents seven low-cost house designs to choose from, each with varying layouts that emulate settler understandings of domesticity and aesthetics. It additionally provides basic guidelines and specifications for building construction and systems.

Presenting a glaring limitation that hints at the housing catalogue's problematic premise, the document explicitly states that the designs are disconnected from utilities, noting that "electricity, running water, etc." are to be included "when available" (Indian Affairs Branch, 1959). In her own study of the catalogue, Milosz identifies further shortcomings in the plans, such as the lack of a second bathroom, family room, and dining room when compared with a similar typology marketed towards settler Canadians in the CMHC's 1958 *Small House Designs* publication

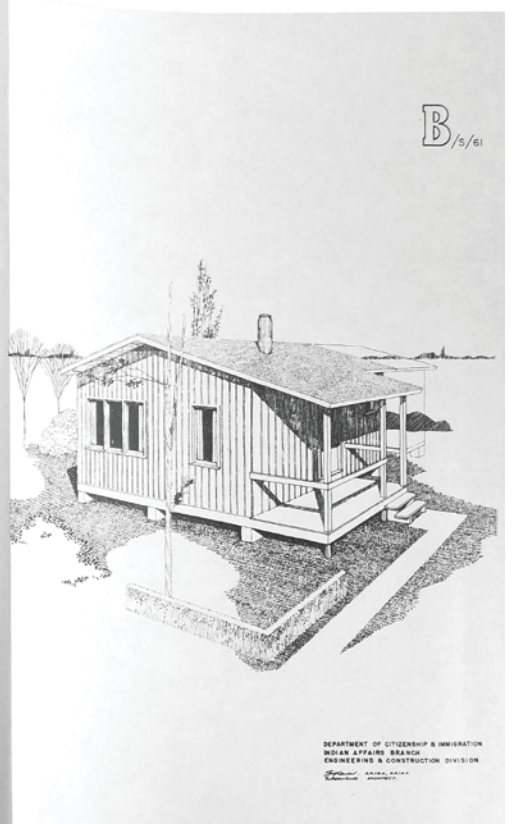
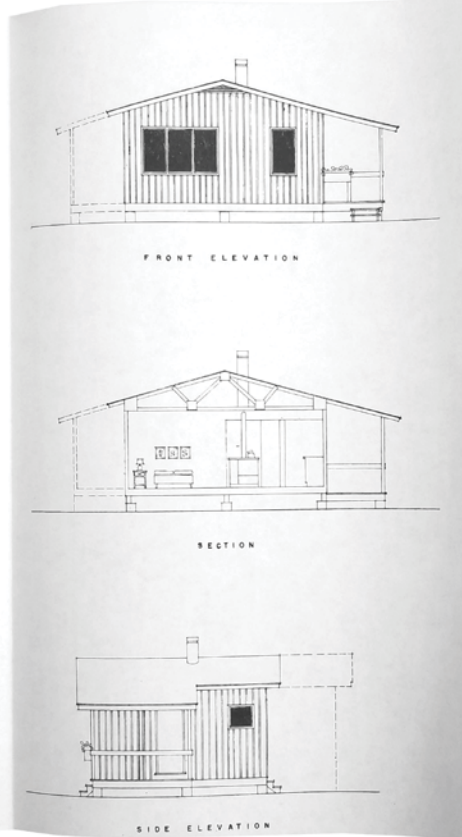
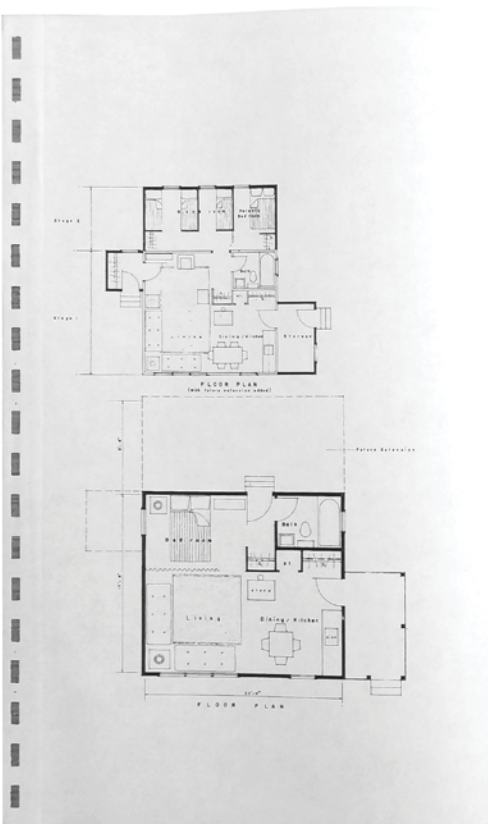
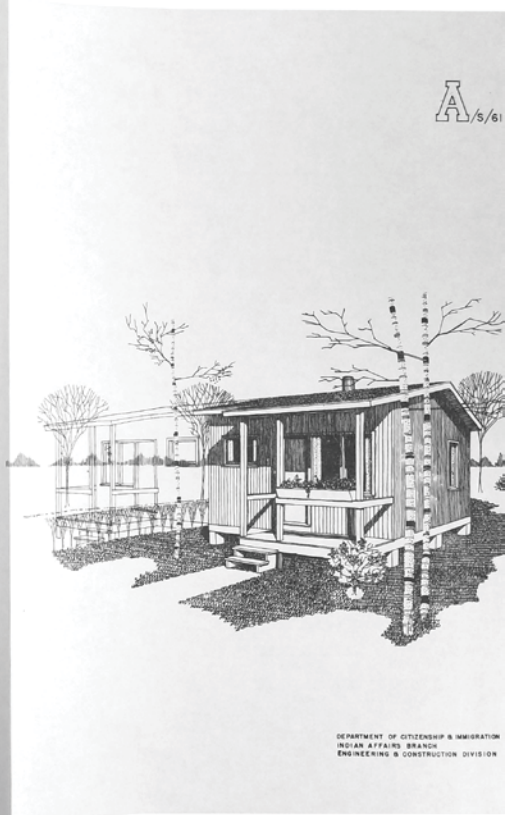
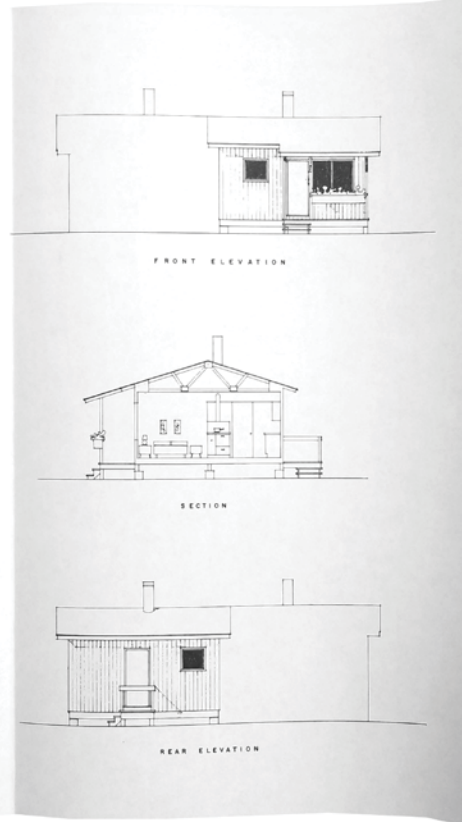
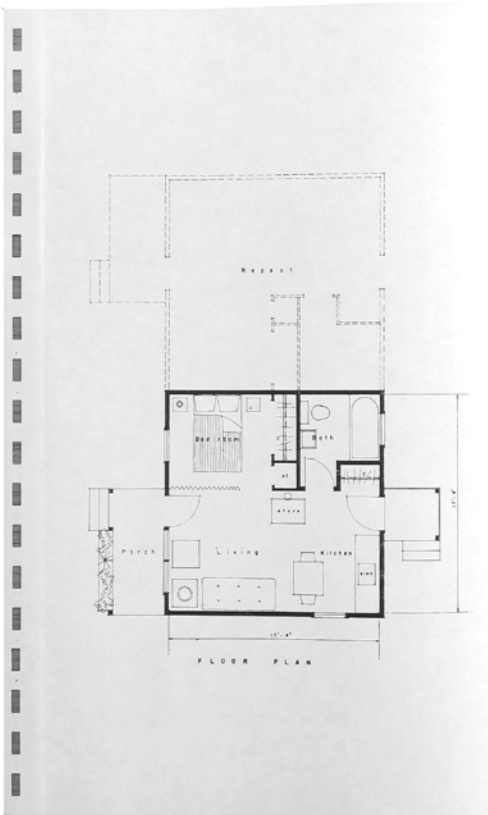


House Plans "4" and "7" from *Canadian Indian Homes*, Indian Affairs Branch, 1959.

(Milosz, 2020, 84). These homes were inevitably hindered from being built to the perceived quality they advertised by their design and the "bureaucratic control and restricted access to resources such as financing" (Milosz, 2020, 86).

Indian Affairs Branch, *Subsidy Housing Program*, 1962

In a similar manner of standardization and presentation format, the *Subsidy Housing Program* released in 1962 features a smaller catalogue selection of homes that could be built with the government subsidy offered in the program. Compared to *Canadian Indian Homes*, its set of drawings provide us with more detailed information about the layout and construction, though the scale and quality of the homes are noticeably alike.



House Plans "A" and "B" from *Subsidy Housing Program*, Indian Affairs Branch, 1962.

CURRENT STATE OF INDIGENOUS HOUSING



Délı̄nę community housing, photograph, Formline Architecture + Urbanism Inc., 2021.

The current housing crisis can be viewed as a multi-pronged systemic issue. As McCartney notes, there has been little action from the federal government to systemically and substantially change this; instead, the focus remains on “short-term, crisis oriented” solutions (McCartney, 2016, 21). In our research we identified that some of the barriers to resolving this issue persist due to the insufficient focus on building quality, healthy homes, building codes and conventional techniques, construction challenges, funding availability, and the commodification of housing.

Quantity over Quality

The urgency to deliver more homes in Indigenous communities has come with the challenge of ensuring durable and quality construction. Financing and resources remain a barrier that

has led many to prioritize building quickly, rather than building to last. Despite the destruction of two duplexes by a fire in Fort Resolution, Northwest Territories raising concerns about the widespread adoption of modular units in communities, housing minister Lucy Kuptana acknowledged Housing NWT's reliance on modular construction comes from the standpoint of affordability and efficiency, saying, "We don't have the money to build homes" (Blake, 2024). When homes are built, program manager for the Bringing It Home initiative, Corey Cote-Diabo says external contractors do not deliver them to good standards and quality control (Cimellaro, 2024).

Limitations of Building Codes and Techniques

Conventions and standards followed by housing developers are themselves rooted in settler understandings of design and construction, bringing issues of regional and cultural appropriateness for instance, to mind. As Mans and Wilson explain, building codes, while fulfilling concerns of safety, do not necessarily meet the specific housing needs of First Nations communities (Mans and Wilson, 2019, 183).

Construction Challenges

Building processes are hindered by capacity issues that can be seen to have an impact in the outsourcing of construction labour and the capacity of Indigenous communities to build the quality homes they desperately need. Indigenous women surveyed by the NWAC indicate the lack of skilled tradespeople within their communities and need for construction training and employment opportunities for youth to build better homes (Native Women's Association of Canada, March 31, 2020, 73).

Supply and construction logistics present further challenges, particularly in the case of Northern and remote communities relying on external manufacturers and suppliers. A respondent in NWAC's survey notes that "[u]p North, the delivery of supplies is extremely expensive and if something breaks, you have to wait a long time for things to be replaced" (Native Women's Association of Canada, March 31, 2020, 73).

These issues reflect the dependency on labour and material economies detached from communities across the country, which are at odds with how many Indigenous peoples traditionally built their homes. In Mans and Wilson's project for Opaskwayak Cree Nation (OCN), they describe how OCN housing is traditionally connected to the land and community through considerations for local materials, seasonality, place, and "the builders' personal skills, abilities, and preferences" (Mans and Wilson, 2019, 173). Similarly, traditional Inuit houses are informed by naturally available materials, such as animal skins and snow, the size of the family dwelling in them, and the location where the family has settled for the season (Qikiqtani Inuit Association, 2013, 12).

Funding Shortages

Financing housing projects is a barrier to building more and better housing. While the CMHC and other government supports and programs are intended to address this, communities have voiced that the funding is insufficient. Housing loans from commercial banks to meet this gap are difficult to secure, as they depend on the finance being guaranteed (Vincent and Hammond, 2023). Mans and Wilson note that it is “the capital needed to compete with Western markets” that is a barrier for First Nations communities who want to deviate from “conventional Western building techniques and processes,” and thus create more responsive housing solutions (Mans and Wilson, 2019, 174).

Companies Profiting-off the Housing Crisis

The ongoing housing crisis in First Nations, Inuit, and Métis communities has created a market for building companies that view the crisis as an opportunity to turn a profit. Many websites of architecture firms and construction companies examined in our research for this catalogue feature projects specifically categorized as ‘Indigenous’ or ‘Indigenous Design Work,’ or that can be filtered using these keywords. Builders specializing in rapid-build housing solutions, such as modular and prefabricated housing, have also in many cases, geared their designs to Indigenous clients, particularly those living in remote and Northern communities. With this interest in Indigenous housing, it is important to be critical of attempts to privatize housing solutions and the decision-making power in conventional design services that are most often provided by non-Indigenous and Southern companies. From seemingly passive strategies of placing Indigenous art in boardrooms, to more overt housing design and delivery, it must be emphasized that the economic benefits of housing supply must shift to Indigenous peoples, or all the difficult lessons learned from previous generations will inevitably be repeated.

Commodification of Housing

Based on these concerns, it is clear that there needs to be a subversion of how housing in Indigenous communities is approached. Supporting communities in taking their housing needs into their own hands is key to this. While some communities lack the capacity to deliver housing independently, at the regional or Tribal Council scales, many opportunities for developing startup businesses exist. Unfortunately, houses have been commodified and therefore, their production is as important as any other aspect. Who economically benefits from it? Who builds capacity to deliver future housing from it? How can it be produced in a way that minimizes impact on Mother Earth? All of these difficult questions must be meaningfully addressed.

HOW MIGHT PROCESSES BE ADAPTED?

Support Agency and Self-determination

The Spectrum of Public Participation provides a scale describing the levels of impact that a participant group can have on the outcome of a participation process (International Association for Public Participation). In the context of Indigenous housing, this highlights the importance of increasing the decision-making ability that Indigenous individuals, communities, and organizations have in the development of their housing. In doing so, housing has the potential to support their agency and self-determination.

Integrate Capacity-Building

It is critical to also examine how the resources of Indigenous individuals, communities, and organizations can be bolstered by the process of developing housing by integrating skills building and knowledge sharing opportunities. Our research indicates that engaging youth and providing them with training and employment creates community resilience in the long-term. Furthermore, everyone should have an opportunity to learn and contribute, thereby addressing industry-wide gaps such as the gender disparity in the trades.

Diversify Housing Responses

Looking beyond standard modular designs that have become the norm in many communities, housing options need to be diversified to better respond to diversity in cultural needs, family compositions, lifestyles, and income. NWAC suggests deviating from “one-size-fits-all housing solutions” and the “overreliance on single-family homes” (Native Women’s Association of Canada, March 31, 2020, 75).

Design Housing within a Community Network

The connection of housing models to their context is another area to be integrated into its design. As McCartney emphasizes, the design of housing, which serves as “a powerful cultural tool” should be “considered as part of a complex network of community assets” (McCartney, 2016, 21). Similarly, Mans and Wilson identify that there needs to be a focus on their “ecological and social impact” within the broader community network (Mans and Wilson, 2019, 176).

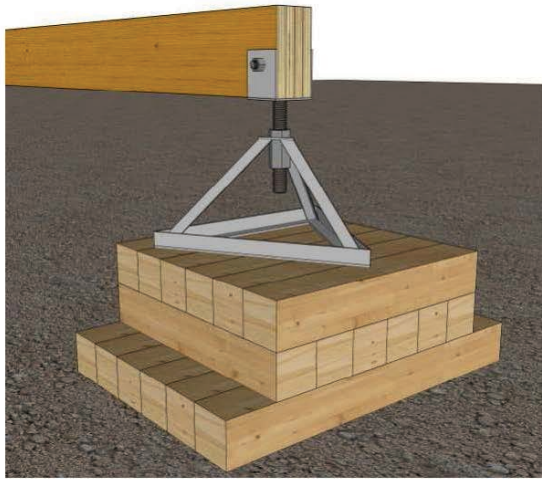
Financing Alternatives

Reliance on government funding and bank loans alone has not always been sufficient for addressing community housing needs. Alternative models for financing such as the Indigenous-to-Indigenous lending approach can provide communities with the capital to scale up their capacity to build homes (Vincent and Hammond, 2023).

INDIGENOUS-LED BEST PRACTICES AND DESIGN GUIDELINES



Foundation Approach #1: The Traditional Portable Screw-Jack



BOOKLET 1: SITE PLANNING & FOUNDATIONS | TECHNICAL GUIDE FOR NORTHERN HOUSING - Ontario 26



Foundation Approach #1: The Traditional Portable Screw-Jack

The Traditional foundation system includes beams supported by adjustable screw-jacks or stilts that are surface-mounted on wood or concrete pads with gravel underneath. Because the ground will settle and heave throughout the year, it is essential that this system have the capability to be adjusted seasonally.

Because this foundation system is just sitting on the surface, where required, some form of tie-down is



required to prevent the wind from lifting the house up off the ground. Tie-downs can be achieved by attaching cables from the foundation structure to weights on the ground. An easy method of creating a tie-down is to build a stone gabion, which is a metal cage filled with stone and rubble.

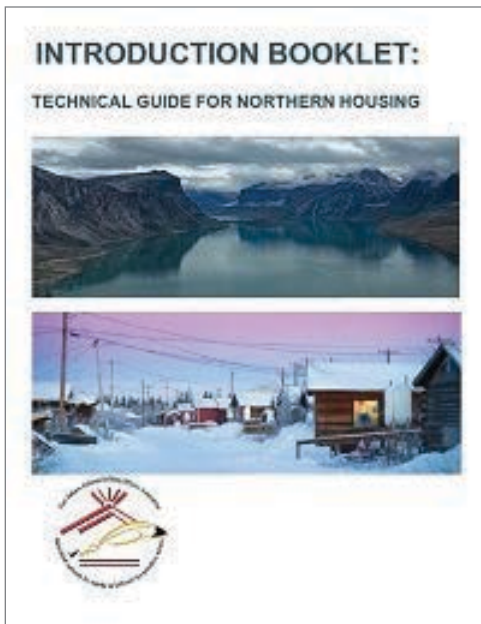
When to use this approach

This is the lowest-cost and fastest to build of the recommended foundation approaches, but it is only recommended for use when a house is required to be built quickly at minimum cost. There are better approaches for more long-term foundations.



BOOKLET 1: SITE PLANNING & FOUNDATIONS | TECHNICAL GUIDE FOR NORTHERN HOUSING - Ontario 27

Spread from *Technical Guide for Northern Housing*, FNNBOA, 2022.



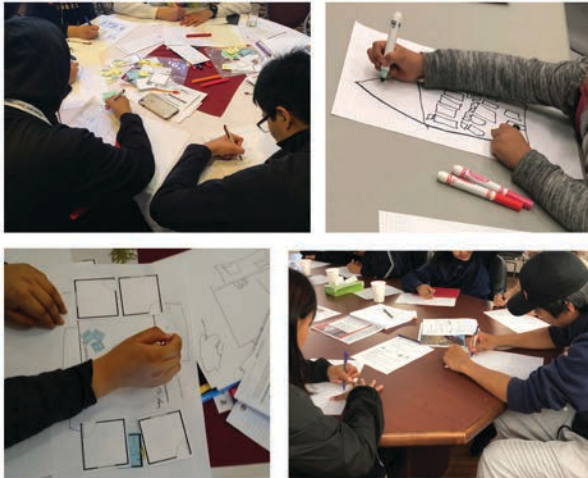
Cover of *Technical Guide for Northern Housing*, FNNBOA, 2022.

FNNBOA, *Technical Guide for Northern Housing*, 2022

This collection of booklets by the FNNBOA provides “technical and engineering information” and identifies “best practices” relating to National Building Code of Canada (NBCC) standards for housing construction within Northern and remote contexts. It views this information as key to understanding the “governance and challenges of construction in the North” (Introduction Booklet: Technical Guide for Northern Housing, 2022, 1). While informative for both Northerners and those based outside Northern communities, FNNBOA believe this information is particularly applicable to those working in the construction and supply chains linked to Northern communities (Introduction Booklet: Technical Guide for Northern Housing, 2022, 2). Their long-term plan is to develop booklets specific to 14 sub-regions. Currently, they have published a booklet dedicated to the Northern Ontario context, which covers geotechnical solutions, mechanical systems, building assemblies, and fire safety. The technical guide appendix includes drawings from four examples of community-based Northern house designs from across Canada that were coordinated by David T Fortin Architect.

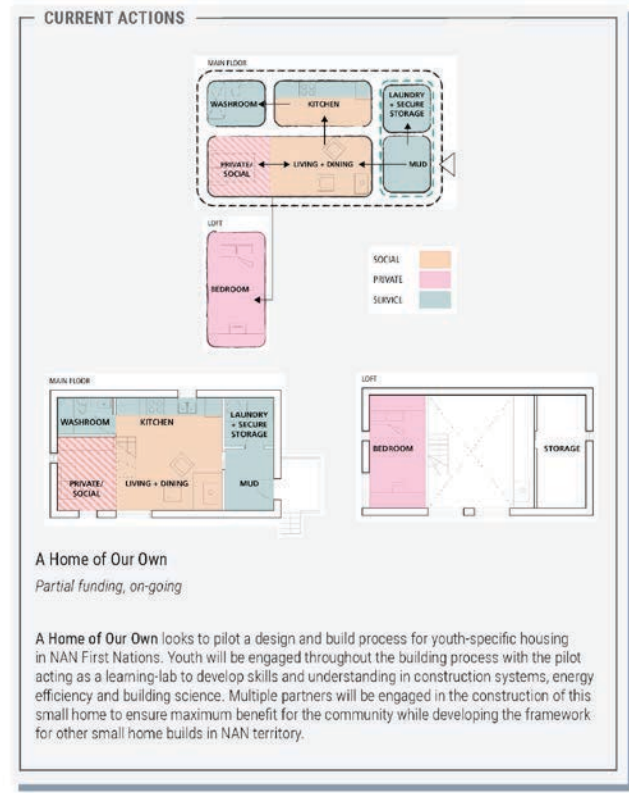
" Housing is a priority. Every family needs to have their own space to create memories."

- NAN Oshkaatisah Council



Clockwise from top left: NAN Youth Gathering 2020, community workshop in Slate Falls Nation, youth workshop in Cat Lake First Nation, and NAN Youth Gathering 2020.

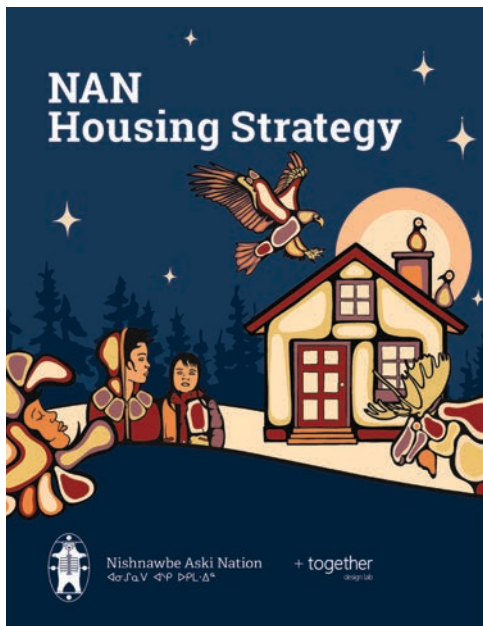
Engagements with youth were hosted in community and at NAN Youth Gathering events in-person and virtually. Many youth shared their ideas for housing and sketches from these events were analyzed for key features and spatial arrangements, contributing to the development of *A Home of Our Own*.



A Home of Our Own
Partial funding, on-going

A Home of Our Own looks to pilot a design and build process for youth-specific housing in NAN First Nations. Youth will be engaged throughout the building process with the pilot acting as a learning-lab to develop skills and understanding in construction systems, energy efficiency and building science. Multiple partners will be engaged in the construction of this small home to ensure maximum benefit for the community while developing the framework for other small home builds in NAN territory.

Spread from *NAN Housing Strategy*, Nishnawbe Aski Nation and Together Design Lab, 2023.



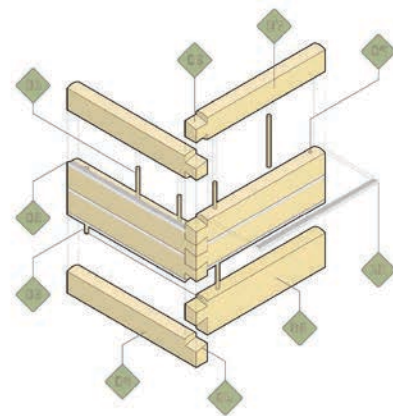
Cover of *NAN Housing Strategy*, Nishnawbe Aski Nation and Together Design Lab, 2023.

Nishnawbe Aski Nation and Together Design Lab, *NAN Housing Strategy*, June 2023

Facing an ongoing housing emergency, Nishnawbe Aski Nation (NAN) led the development of a housing strategy to address community housing needs, envision design responses, and create capacity building opportunities and policy alternatives (Nishnawbe Aski Nation and Together Design Lab, June 2023, 8). It was developed through the participation of NAN community members in workshops and engagement sessions and through a partnership with the Together Design Lab (TDL) at Toronto Metropolitan University (Nishnawbe Aski Nation and Together Design Lab, June 2023, 20–26). They present a road map of short- and long-term goals with timelines and expected outcomes, covering “advocating for inclusive housing systems,” “addressing health impacts of housing,” “appropriate and sustainable design and materials,” “integrated infrastructure planning,” “improving funding structures,” “governance and policy reform,” and “capacity development and training.”

e) Dovetail Log Building and the Métis Folk Homes of the Prairies

Métis employed the use of the Half-Dovetail joinery to connect hand-hewn logs on their domestic buildings. A diagram to the right illustrates a typical corner construction detail in an isometric drawing.



Half Dovetail Hand-Hewn Métis Wall

- 01 // Hardwood Dowel Hand Shaped to Pin Logs
- 02 // Lime/Straw/Clay Log Chinking
- 03 // Half-Dovetail Shoulder
- 04 // Hand-Hewn Sill Log Showing Hewing Marks
- 05 // Half-Lap or Half Dovetail Corner Joint with Interlocking Mortise secured by Corner Post Tenon
- 06 // Tall Angle/Pitch (8-15°)-11.5° Typical
- 07 // Typical Horizontal Log 16-22' Long and ~6"x10"
- 08 // Hand-Hewn Sill Log Showing Hewing Marks
- 09 // Pre-drilled Dowel Hole

Fig. 54 Isometric Diagram showing typical Half Dovetail Log Construction, image by Jason Surkan.



Fig. 53 Photo 2012, 2018, 2019; Photo 2019 - Hudson's Bay Trading Post, image of Hudson Bay Trading Post at Fraser Canyon. Photo credit: www.bcm.ca/museum/visit-us/visiting-us

Spread from *Architectural Design Guidelines*, MNBC, 2024.



Cover of *Architectural Design Guidelines*, MNBC, 2024.

Métis Nation of British Columbia, *Architectural Design Guidelines*, 2024

Authored by Métis architects David Fortin, Jason Surkan, and Terence Radford, the Métis Nation of British Columbia's (MNBC) publication provides design guidelines for “strengthen[ing] cultural identity and bring[ing] Métis communities together through built form” (Fortin, Surkan, and Radford, 2023, 11). A historical to present day overview of Métis in British Columbia relates Métis history, identity, and culture to building traditions and design. Moves to catalogue Métis ways of life, building typologies, and construction methods building through drawings and photographs accompany this summary. The publication subsequently examines how design might consider situating the importance of the land, trauma, longevity, participatory processes, and health.

GOOD EARTH LODGES

NOTATION

Creating a new material and a new production process while training workers in both the production of the material and its use in construction was challenging, but there is great pride in the project and the way in which Crow resources and Crow tribal members were used to construct these homes. The external collaboration between the University of Colorado Boulder and the Apsálooke Nation Housing Authority has been embraced by all who have participated in the projects. Involvement of the university in the project has been instrumental both in providing technical and management support and also in providing continuity, as the staffing within the housing authority has continued to change due to internal challenges and changes in government during the life of the project.

NOTES

The long-term vision in collaboration with the Division of Energy and Mineral Development is to continue to develop and enhance the tribe's ability to identify resources that enhance its economic stability. The Good Earth Lodges project starts to achieve that vision. Historically, the focus was to extract resources on tribal lands. This project, although challenging, identifies a series of solutions for issues on the Crow Reservation, such as addressing unemployment and the need for job training, addressing the critical need for housing, and identifying resources on tribal lands that can be used in construction and tribal enterprise.

"The Crow people believe that they have three mothers. The first is the woman who gives birth to the child. The last is Mother Earth, who the people go back to when they die. And then the home, the lodge is our mother, it protects us as we are being raised, coming up in this world."

-Gabriel Black Eagle




NOTES ON DESIGN & MATERIALS

The Good Earth Lodges project explores the potential for sovereign nations to produce their own building materials and use their own labor to create more sustainable, locally based economies. It is an excellent example of how universities can collaborate with tribal communities to develop projects that fit the needs and achieve the vision of the community. The project also provides lessons about the challenges of achieving locally produced, locally sourced, and locally built houses. Moving outside of conventional construction practices and materials presents significant challenges, but it also allows for creative solutions. It allows tribes to work outside the conventional marketplace to provide innovative products and approaches to achieve many additional benefits beyond the provision of housing.



41 **Best Practices in Tribal Housing: Case Studies 2013**

Tacoma, WA | **PUYALLUP TRIBE OF INDIANS | PLACE OF HIDDEN WATERS**

Client/Developer: Puyallup Nation Housing Authority
 Design/Architect: Daniel Glenn, AIA, NCARB
 Environmental Works
 Puyallup Nation Housing Authority and Margot
 Construction: Puyallup Nation Housing Authority and Margot

CM/Engineer: Malsam Tsang Engineering Corporation
 Structural Engineer: Thomas Rengstorff and Associates
 Landscape Architect: Ecotope
 Hazous Engineering

Timeline: MAY 2008 Construction Begins, JULY 2008 Utility Installation, COMPLETION OF EXTERIOR DESIGN, MAY 2009 Construction Starts on Housing, NOV 2009 Construction of the Interior, MAY 2010 Construction of the Exterior Housing Completed, MAR 2012

CULTURAL FORM

Place of Hidden Waters represents culturally and environmentally responsive new housing for the Puyallup Tribe in the Pacific Northwest, one that achieved Leadership in Energy and Environmental Design (LEED) for Homes Platinum certification. The project is located on traditional Puyallup tribal lands on a hill overlooking the Puget Sound tidal flats. The design emulates the rectangular, shed-roofed form of a traditional Coast Salish longhouse, using a variation of the modern townhouse courtyard.

Photo: Tasha English

CORE PROJECT EMPHASES:

- Local Trade
- Waste Management
- Renewable Energy
- Responsible Engagement

LESSONS LEARNED

- Affordable tribal housing can achieve LEED Platinum certification and be a national housing model.
- Resident and staff participation in the design process was a critical ingredient to the project's success.
- Careful study of historic precedents can provide inspiration for modern living.

BEST PRACTICES

- An integrative process was key to the design from the beginning, following the requirements for LEED for Homes.
- The vision for the project came from engagement among the housing authority, community, and architect. The project was developed through careful site evaluation, historic precedents, and green building goals.
- Consistent project leadership by housing staff allowed for continuity.

DESIGN

LEED PLATINUM CERTIFICATION

INNOVATION

LEED GREEN BUILT

IMPACT

TOTAL BSA APPROVED: \$6.6M
 PHASE I: \$2.6M Phase II: \$2.1M*
 COST PER SQ FOOT:
 Phase I: \$166 Phase II: \$135*
 TOTAL UNITS: 20

* Estimated costs


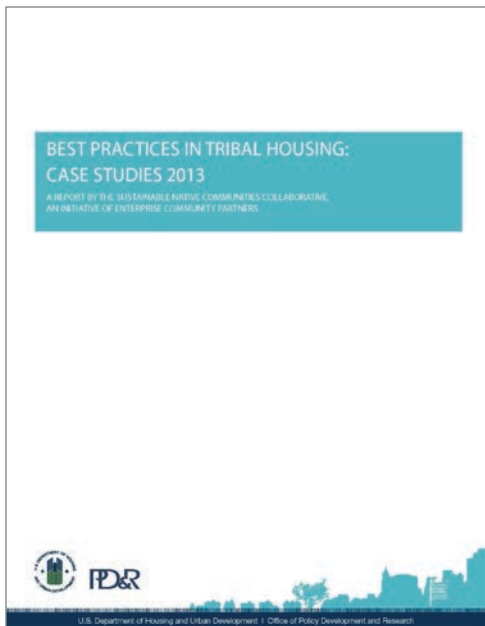


Photo: Tasha English

42 **Best Practices in Tribal Housing: Case Studies 2013**

Spread from *Best Practices in Tribal Housing: Case Studies 2013*, SNCC, 2014.



Cover of *Best Practices in Tribal Housing: Case Studies 2013*, SNCC, 2014.

Sustainable Native Communities Collaborative, *Best Practices in Tribal Housing: Case Studies 2013*, October 2014

Another example of best practices in housing initiatives comes from the context of tribal housing in the United States. This report by the Sustainable Native Communities Collaborative seeks to identify best practices in the criteria of 'Design,' 'Site,' 'Innovation,' 'Culture,' 'Green,' and lastly, 'Impact' on future generations. Each of the projects featured in this report are analysed and evaluated based on their performance in these categories.

OVERVIEW OF ARCHITECTS AND DESIGNERS

Individuals and companies included in our list of Indigenous architects and designers are publicly identified as Indigenous by the Canadian Council of Aboriginal Businesses (CCAB) and/or the Government of Canada Indigenous Business Directory, or who have been identified as Indigenous in other contexts. We do not have authority to confirm or dispute if anyone on this list is Indigenous or not. Any engagement with individuals and/or companies should be accompanied by a confirmation of their Indigenous identity as fraud has also become a significant issue across the country.

The accompanying list of allied architects and designers reflects the individuals and companies who have contributed to projects in this report only. We are also aware that there are many other firms across the country working with Indigenous communities towards Indigenous-led projects. Both lists are not intended to comprehensively reflect all the architects and designers practicing in Canada.

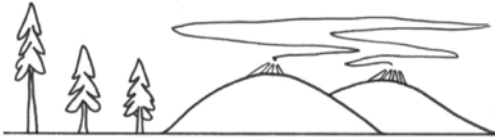
Indigenous Architects/Designers

Aabijjiwan New Media Lab
Aiden Callison (hcma)
Alex Wilson (University of Saskatchewan)
Amina Lalor (Laurentian University)
Bohdana Innes (J.L. Richards & Associates Limited)
David Kitazaki (dk Architecture)
David T. Fortin Architect
Douglas Cardinal Architect
Formline Architecture + Urbanism Inc.
Gregory Brais Sioui Architect
Jake Chakasim (Carleton University)
James Bird
Jason Hurd (aodbt Architecture + Interior Design)
Jason Surkan (SOLO Architecture)
Michael Robertson (Cibinel Architecture Ltd.)
Nicole Luke (Verne Reimer Architecture)
Obsidian Architecture Ltd.
Ouri Scott (Urban Arts Architecture Inc.)
Patrick R. Stewart Architect
Rachelle Lemieux (Verne Reimer Architecture)
Ray Gosselin Architect Ltd.
Regenerative Design
Ryan Gorrie (Brook McIlroy)
Shawn Bailey (University of Manitoba)
Smoke Architecture
Steffanie Adams (George Brown College)
TAWAW
Tiffany Shaw (Reimagine Architects)
Two-Row Architect

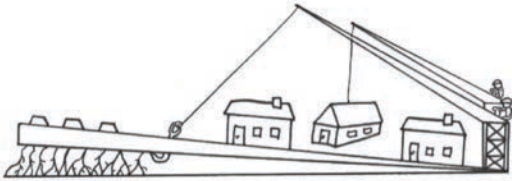
Allied Non-Indigenous Architects/Designers

1080 Architecture Planning + Interiors
Blouin Orzes architectes
Buoyant Foundation Project
DIALOG Design
dHKarchitects
EVOQ Architecture
Alain Fournier on RAIC Indigenous Task Force
hcma
J.L. Richards & Associates Limited
Kasian Architecture, Interior Design and Planning
Kobayashi + Zedda Architects
KPMB
LEA (Larocque Elder Architects)
LGA Architectural Partners
Low Hammond Rowe Architect
Mackin Architects Ltd.
mcCallumSather
MCM Architects Inc.
Oxbow Architecture
Reimagine Architects
Revery Architecture
SableARC Studios
Shelagh McCartney (Together Design Lab)
Taylor Architecture Group
Urban Arts Architecture Inc.
Verne Reimer Architecture Inc.

PROJECT EVALUATION CRITERIA



"As a First Nation community impacted by the Indian Act, the idea of home has been one of displacement, confinement, and the creation of sedentary lifestyles that we were unaccustomed to."



"The Wildfire House project is an important opportunity for the Tsilhqot'in to reflect on, research, and develop a house design in relation to our values and cultural practices."



"The purpose of engaging with UBC SALA is to explore what is possible given these circumstances. We've looked at how our ancestors lived, what living in our houses is like today, reviewed our mistakes, and incorporated what we are already doing to address housing."

What is Indigenous-led?

In line with the idiom, "nothing about us, without us," housing projects led by First Nations, Inuit, and Métis peoples support increased community decision-making and meaningful involvement in steering the outcomes of their housing from start to finish. In reference to the Spectrum of Public Participation, these are projects that go beyond the standard practices of informing and consulting; rather, they range from Indigenous involvement – a working relationship with an individual, community, or organization throughout the process – to more involved participation through collaboration and having full decision-making authority (International Association for Public Participation). As such, the housing projects included in the following catalogue have been or are currently being developed through thorough engagement processes or collaborations with First Nations, Inuit, and Métis peoples, or are led by them. Indigenous leadership applies to a variety of roles in these projects, from clients, designers, builders, developers, funding, and management.

Because of the greater level of community participation in these approaches, they have the ability to better connect with and understand community member needs and meet them using ways of knowing, methods, and resources. Beyond simply delivering housing, these projects focus on how communities will benefit, grow with, and have their self-determination supported by a development.



From top to bottom: The Tsilhqot'in idea of home from the Wildfire House Prototype project, drawings and thoughts, Russell Myers Ross (former Chief (Nits'il'in), Yunesit'in Government); community input for the Muskowekwan Family Healing & Wellness Centre, photograph, 1080 Architecture Planning + Interiors; and GCFSS Longhouse opening, photograph, Gitxsan Child & Family Services Society.



From top to bottom: Cardinal House cross-laminated insulated panel installation, photograph, Mark Hemmings; y-shaped Kivalliq Senior's Long-Term Care Facility, photograph, Verne Reimer Architecture Inc. and Blouin Orzes architectes; mass timber in the Wii Gyemsiga Siwilaawksat, photograph, hcma; and prefabricated units in the Pikangikum Safe House-Hotel, photograph, Grandeur Housing Ltd.

What is Innovative?

Innovation in design, manufacturing, and assembly emerges as an outcome of Indigenous-led housing design and implementation processes. Innovative approaches are responsive to community needs and address concerns such as cultural appropriateness and expression, accessibility, affordability, adaptability, services, economic development, and connections to the broader community. They are place-based, informed by geographic considerations, such as climate and regional variability, and a community's relationships to the land. Finally, they are mindful of supply and construction logistics and seek to streamline these processes by sourcing local materials and businesses, using traditional building methods and new and emerging technologies, and simplifying transportation and construction on site.

Categories:



Modular (single story): uses a replicable housing typology or unit within a single story.



Volumetric Modular (up to 3 stories): uses a replicable housing typology or unit up to a building height of 3 stories.



Prefabricated Building Components: uses large building components, such as whole wall assemblies, that are fabricated off-site and transported and assembled on-site.



Panel Systems: expedites transportation and/or construction processes through ready-to-assemble planar or slab building components.



Community-led Design: projects initiated and administered by First Nations, Inuit, and Métis communities or governments involving reciprocal relationship building and sharing of input through all stages from community leadership, Elders, Knowledge Keepers, youth, community members, and/or Indigenous organizations.

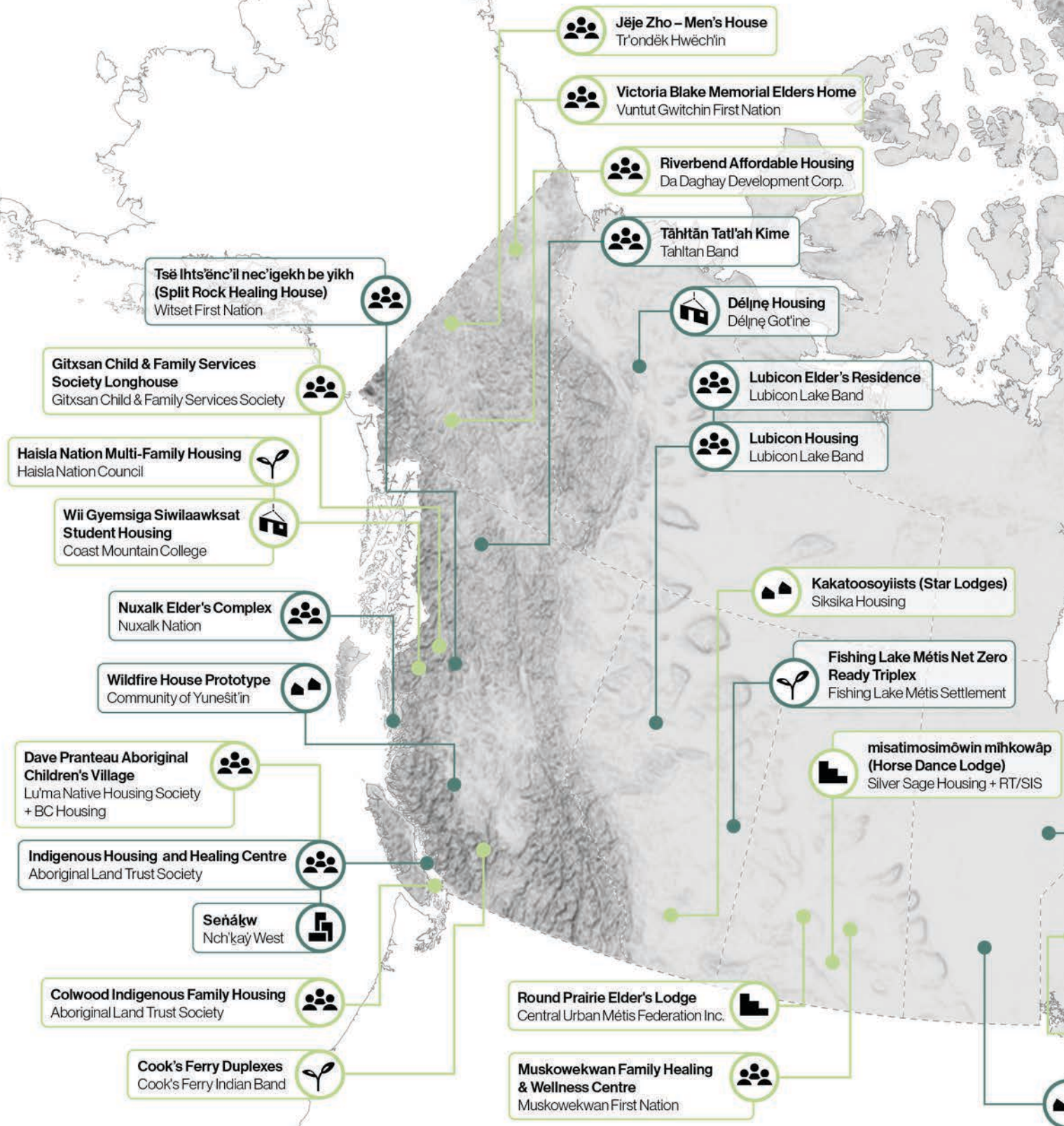


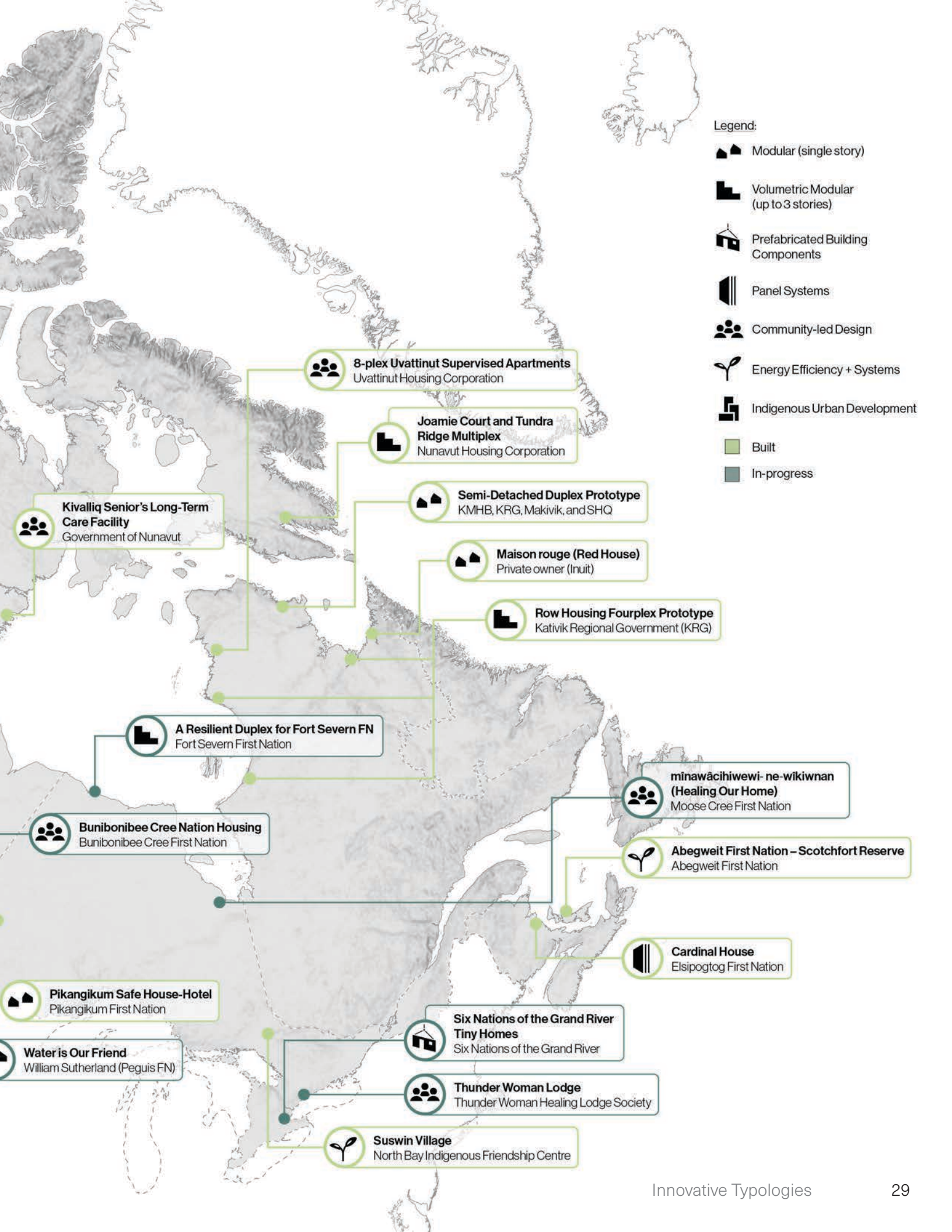
Energy Efficiency and Systems: considers sustainability in building construction and performance.



Indigenous Urban Development: urban-scale development arising from a community's partial or full ownership of lands or Land Back approaches to regaining sovereignty over Traditional lands.

INNOVATIVE TYPOLOGIES





Legend:

-  Modular (single story)
-  Volumetric Modular (up to 3 stories)
-  Prefabricated Building Components
-  Panel Systems
-  Community-led Design
-  Energy Efficiency + Systems
-  Indigenous Urban Development
-  Built
-  In-progress

 **8-plex Uvattinut Supervised Apartments**
Uvattinut Housing Corporation


 **Joamie Court and Tundra Ridge Multiplex**
Nunavut Housing Corporation

 **Semi-Detached Duplex Prototype**
KMHB, KRG, Makivik, and SHQ

 **Maison rouge (Red House)**
Private owner (Inuit)

 **Row Housing Fourplex Prototype**
Kativik Regional Government (KRG)

 **A Resilient Duplex for Fort Severn FN**
Fort Severn First Nation


 **mīnawācihiwewi- ne-wikiwnan (Healing Our Home)**
Moose Cree First Nation

 **Bunibonibee Cree Nation Housing**
Bunibonibee Cree First Nation

 **Abegweit First Nation – Scotchfort Reserve**
Abegweit First Nation

 **Cardinal House**
Elsipogtog First Nation

 **Pikangikum Safe House-Hotel**
Pikangikum First Nation

 **Six Nations of the Grand River Tiny Homes**
Six Nations of the Grand River

 **Water is Our Friend**
William Sutherland (Peguis FN)

 **Thunder Woman Lodge**
Thunder Woman Healing Lodge Society

 **Suswin Village**
North Bay Indigenous Friendship Centre



MODULAR

(SINGLE STORY)



Uses a replicable housing typology or unit within a single story.

SEMI-DETACHED DUPLEX PROTOTYPE



Prototype duplex exterior, photograph, H el ene Arsenault, SHQ.

Location: Quaqaq, Nunavik, QC

Completed: 2016

Clients: Kativik Municipal Housing Bureau (KMHB), Kativik Regional Government (KRG), Makivik (formerly Makivik Corporation), and Soci t  d'habitation du Qu bec (SHQ)

Project Architect: EVOQ Architecture colleagues Alain Fournier and Sami Tannoury

Project Contractor: Makivik Construction Division

Additional Consultants: AtkinsR alis Group Inc. (engineer, formerly SNC-Lavalin), Sigma (manufacturer), and Canadian Passive House Institute

Criteria:

- Inuit-led
- Indigenous Design/Architect
- Innovative Construction

Typology: Duplex



Kitchen, photograph, H el ene Arsenault, SHQ.

Role of Community

The Kativik Municipal Housing Bureau (KMHB), Kativik Regional Government (KRG), Makivik, and the Soci t  d'habitation du Qu bec (SHQ) launched a project to design a new and improved 2-bedroom, semi-detached duplex for residents of the Nunavik region in Qu bec. The new duplex needed to be culturally responsive; have a foundation design better adapted to climate change and the preservation of the tundra; have a level of energy efficiency equal or close to the Passive House Standard and improve the aerodynamics of the building to reduce wind resistance and the ensuing heat loss. The design for the prototype was based on the outcome of a 2-day Housing Design Charette in Kuujuaq, as well as a follow up design iteration with a number of Inuit community members.

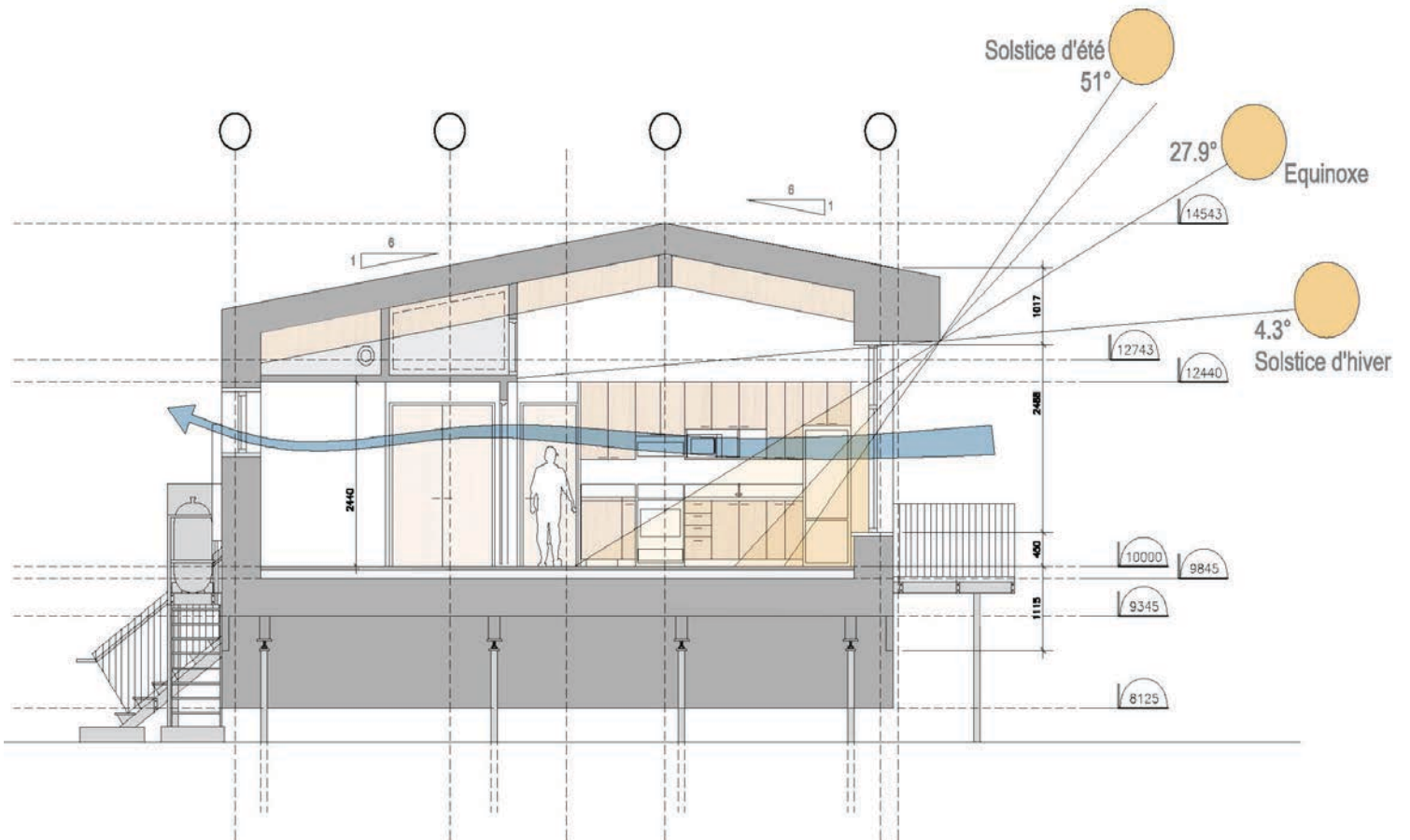
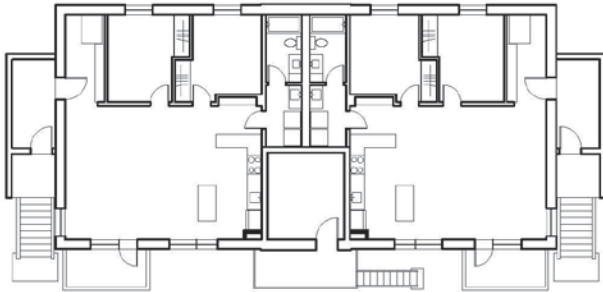
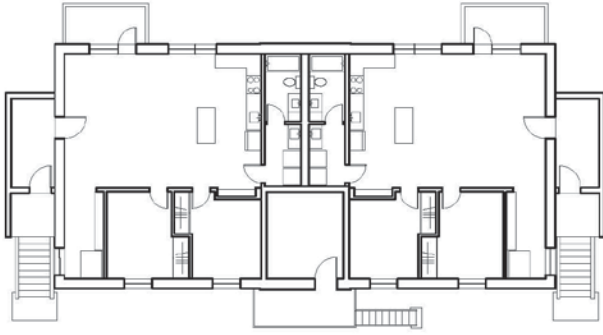
What is Innovative About it?

In response to the climate conditions in Quaqaq, the duplex prototype employs passive heating and daylighting strategies and high-performance materials and is highly energy efficient. It is designed on a raised floor to provide thermal comfort for occupants and a space for mechanical systems. The duplex can be supported on surface footings or pile foundations, depending on its location and soil conditions. A reversible floorplan was envisioned, providing two options that would both allow for an optimal south-facing orientation of the living space windows. Large cold and warm porches flanking the building provide storage space for items such as traditional gear and butchered animal parts. Each unit includes a large and open central living-dining-kitchen space, which can accommodate traditional gatherings. Modular polyethylene floor panels provide a safe cutting surface for eating country food. The kitchen island is multi-functional and movable. Deeper custom kitchen cabinets can house large cooking pots, while a locked cabinet safely stores hunting rifles and ammunition.

Construction + Technical Innovations

- Raised floor building that is adaptable to foundation types
- Large south-facing windows maximize passive solar heat gain
- Uses triple pane, low-E, argon filled sealed glazing units with fibreglass frames (RSI 1.230); and high-performance doors (RSI 1.760)
- Energy for heating: 128 kWh/m²/year (8.5 X Passive House Standard)
- Maximum heating load: 42 W/m² (4.2 X Passive House Standard)

References: EVOQ Architecture, email correspondence; and Louise Atkins, *Case Study 4 Inuit Housing: Pilot Nunavik Duplex* (Royal Architectural Institute of Canada).



Clockwise from top right: Duplex raised on piles, photograph, Hélène Arsenault, SHQ; section indicating ventilation and solar exposure, diagram; and reversible floor plan options, drawing, EVOQ Architecture.

MAISON ROUGE (RED HOUSE)



Home exterior, photograph, Noémie Lavigne.

Role of Community

With funding from the Kativik Municipal Housing Bureau (KMHB) Home Ownership Program for Residents of the Kativik Region, a 2-story 4-bedroom single-family home was constructed in the village of Kangiqsualujjuaq. The project involved working directly with the homeowner to understand and respond to their specific needs including providing views to the land, which was the main reason for choosing this site, while respecting their budgetary limitations. Despite its small size, it was a project of great complexity at all stages of its realization, particularly for the site preparation, which the owners took charge of themselves. In addition to its four bedrooms, the design includes an office/workstation for the homeowners. Though this project consists of a single home, the design is cost-efficient and could be replicated on a larger scale to build additional homes within the North.

What is Innovative About it?

In the context of construction in the North, costs associated with climate and remoteness makes it difficult for general contractors mainly dedicated to the realization large-scale public projects, to get involved in building small homes. As a result, this project employed a local construction company, which not only helped to minimize costs, but also became an opportunity to support the broader community.

Location: Kangiqsualujjuaq, Nunavik, QC

Completed: December 2019

Client: Private owner

Project Architect: Blouin Orzes architectes

Project Contractor: Patrick York

Funding Contributor: KMHB Home Ownership Program for Residents of the Kativik Region

Criteria:

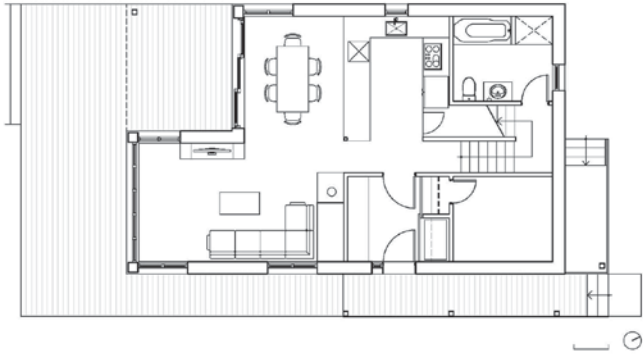
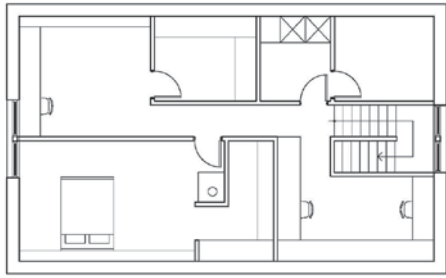
- Inuit-led
- Indigenous Design/Architect
- Innovative Construction

Typology: Single-family home



Kangiqsualujjuaq landscape, photograph, Blouin Orzes architectes.

References: Blouin Orzes architectes, email correspondence.



Clockwise from top right: Natural features around the property, photograph; rear porch and windows look out onto the landscape, photograph; home frontage, photograph; side and rear elevation design studies, rendering; ground and second floor plans; drawing, Blouin Orzes architectes.

PIKANGIKUM SAFE HOUSE-HOTEL



Safe house-hotel frontage and entrance, photograph, MCM Architects Inc.

Role of Nation & Community

The Pikangikum Safe House-Hotel is a place of refuge providing safe and secure shelter, emotional relief, and culturally appropriate services for individuals and families escaping violence or abuse and allowing families to stay together in the community. Supported through professional, culturally sensitive services, the Safe House-Hotel assists women and their children in the difficult transition from their current situations to an environment fostering a positive, independent, and non-violent lifestyle to lessen the effects of generational trauma. Safe, temporary shelter is additionally accessible to Elders, and LGBTQ people who often face similar realities in fragmented and unhealthy family relationships. The Safe House-Hotel includes diverse and flexible program spaces to enable a broad range of services. Community members have developed and led project planning and programming to make the facility financially and environmentally sustainable and rooted in Ojibway culture and heritage. Functional programming includes a large central common area housing the administration, security, offices, Elder's office, and common tenant spaces.

Location: Pikangikum First Nation, ON

Completed: October 20, 2021

Client: Pikangikum First Nation

Partners: Indigenous Services Canada, the Ministry of Attorney General, Ontario Provincial Police, Nishnawbe Aski Nation, and Indigenous Innovations Shelter Corporation

Project Leader: Vernon Kejjick

Project Architect: MCM Architects Inc.

Project Contractor: Sigfusson Northern

Additional Consultants: Grandeur Housing (prefabricated building manufacturer), Pikangikum Sawmill, and Ken Anderson Electric Inc.

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Emergency shelter, transitional, multi-unit

What is Innovative About it?

The project brings together the federal, provincial, and not-for-profit sectors, the justice system, and law enforcement to provide client and community-centric services with the goal of making the community a better place for everyone to live and work. It combines protective shelter spaces and hotel accommodation for visiting professional service providers. The approach utilizes modular units to create two wings housing 8 residential units and 6 hotel units with separate entrances dedicated to sheltering and lodging. Revenue generated will support the ongoing operation and maintenance of the Safe House-Hotel. The project addresses community access to support services, allowing vulnerable populations to heal in the community rather than be disconnected from it in their healing journey.



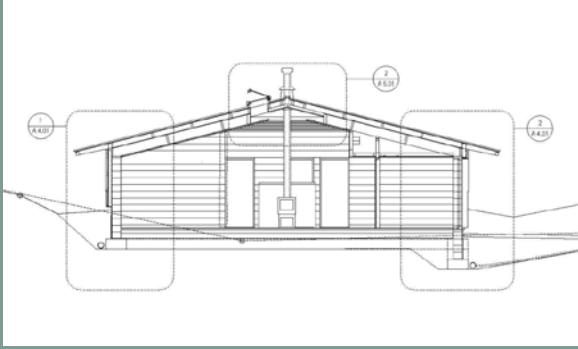
Outdoor gathering circle and fire pit, photograph, MCM Architects Inc.

References: Donna Sound, "Pikangikum First Nation opens safe house for families in crisis," <https://www.ctvnews.ca/canada/what-this-community-needs-pikangikum-first-nation-opens-safe-house-for-families-in-crisis-1.5639828>; mcm architects, "Community Safe House - Pikangikum First Nation," <https://www.mcmarchitects.ca/fnpikangikum-safe-house>; and Ian Scholten, "Pikangikum's Community Safe Village," <https://www.icenet.work/c/pikangikum-first-nation/>.



Clockwise from top: Raised planters in common outdoor space, photograph, MCM Architects Inc.; residential unit interior, photograph, MCM Architects Inc.; prefabricated units, photograph, Grandeur Housing; and common area, photograph, MCM Architects Inc.

WILDFIRE HOUSE PROTOTYPE



Section, drawing, John Bass (UBC SALA).

Role of Nation & Community

The environmentally and culturally responsive Wildfire House Prototype was initiated after the devastating wildfires the T̓silhqot̓'in experienced in 2017. These events have catalysed the need for an on-reserve housing and infrastructure strategy to assess and build houses that are equipped to address wildfires. T̓silhqot̓'in recognize their knowledge and ability to manage their land and limit the damage and lingering air quality issues produced by wildfires that have now become part of everyday life. Additionally, they identify that poorly constructed, crowded housing with poor indoor air quality is not suitable to manage the health-related impacts of wildfire smoke. In response, a partnership between the Yunešit̓'in community of the T̓silhqot̓'in National Government and the UBC School of Architecture and Landscape Architecture (SALA) is developing a 2-bedroom single-family home to be community-built and resilient in the face of wildfire, improve indoor air quality, and incorporate cultural specificity through the expression of T̓silhqot̓'in traditions and practices.

What is Innovative About it?

This co-developed prototype aims to bring together culture, simple technology, capacity-building, and local materials and craft. Its design includes a continuous space linking indoor and outdoor food-related activities, and a central space reminiscent of the traditional T̓silhqot̓'in pit house, called Lhiz Qen Yex. An opening centred on each wall serves as a reminder of the importance of the four directions, and of the land. Wildfire response is addressed through design strategies for the landscape and exterior and interior of the house. Altogether, this approach presents an opportunity to build economical but durable, high-performing, locally manufactured houses that contribute toward Yunešit̓'in resilience and self-reliance.

Construction + Technical Innovations

- Wildfire responsive landscaping with a 2 m wide gravel skirt surrounded by an ember-trapping berry hedge along the house perimeter
- Charred exterior wall cladding resists flame and spark
- Highly reflective metal roofing reduces thermal radiation
- Heat recovery ventilation combined with HEPA filtration ensures thermal comfort and high-quality indoor air
- High-performance envelope
- Durable, low embodied carbon materials above ground
- Locally sourced and manufactured structural walls, roof sheathing, engineered roof trusses, interior walls, ceiling panels, and millwork

References: John Bass, "Wildfire Housing Project," University of British Columbia, <https://irsi.ubc.ca/wildfire-housing-project>.

Location: Yunešit̓'in, T̓silhqot̓'in Territory, BC

Client: Community of Yunešit̓'in (T̓silhqot̓'in National Government)

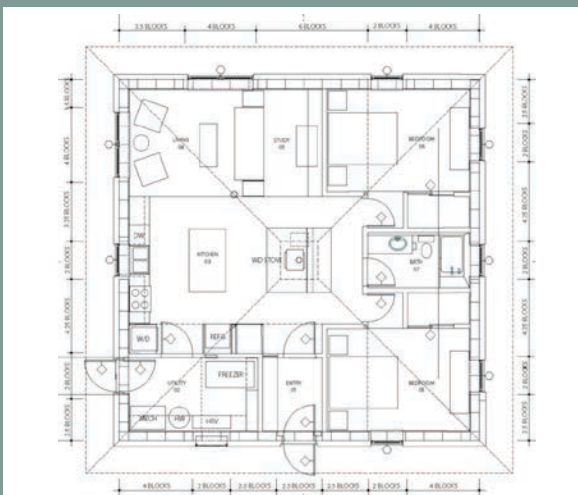
Project Leader: Russell Myers Ross (former Chief (Nits'il'in), Yunešit̓'in Government)

Project Design Team: John Bass (UBC SALA) in collaboration with UBC SALA colleagues Adam Rysanek and Greg Johnson, and research assistants Marion Gelinaz, Zach Morris, Laureen Stokes, Remi Landry Yuan, and Reece Milton

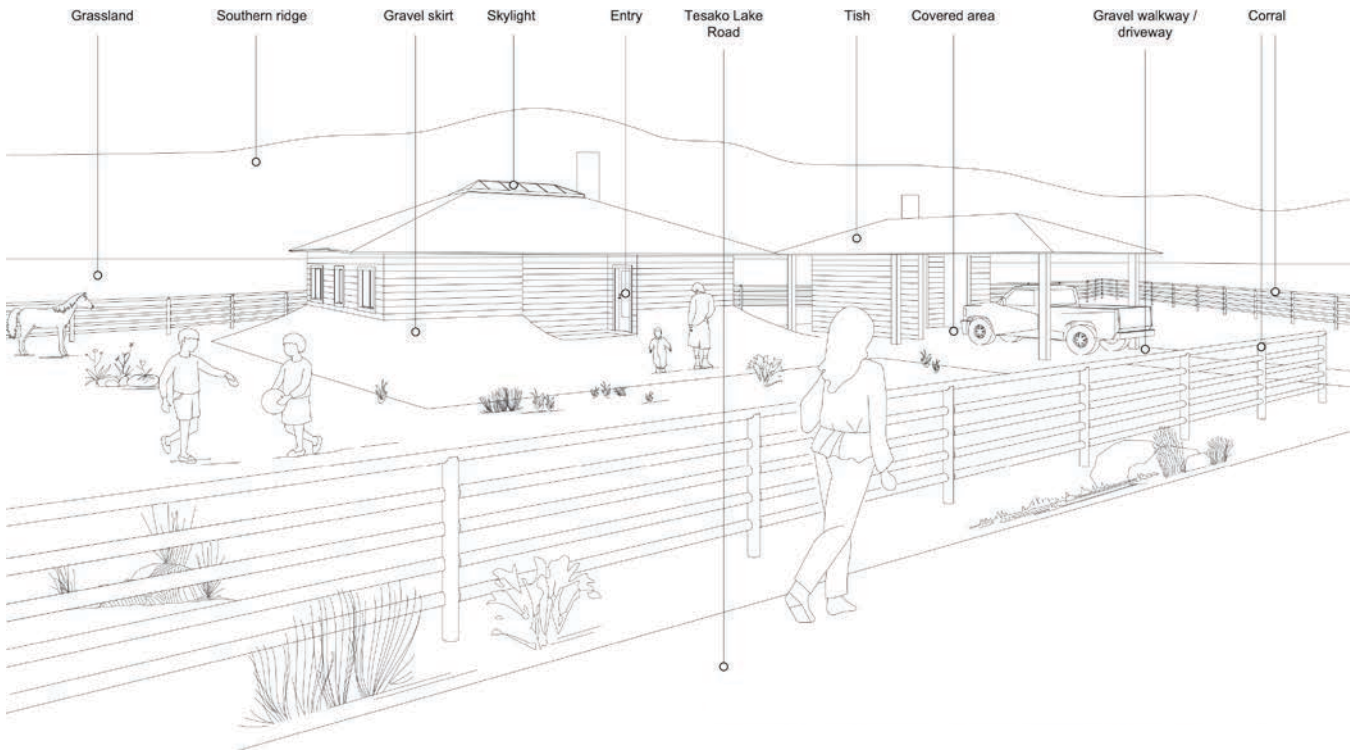
Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

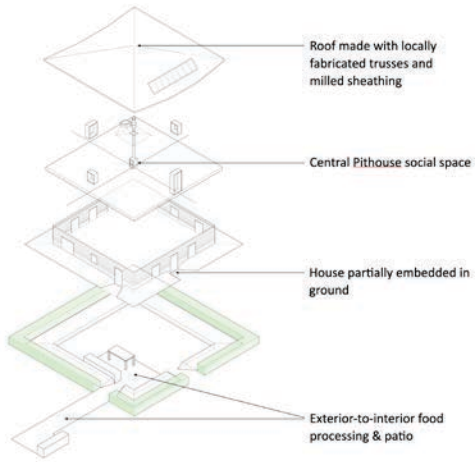
Typology: Single-family



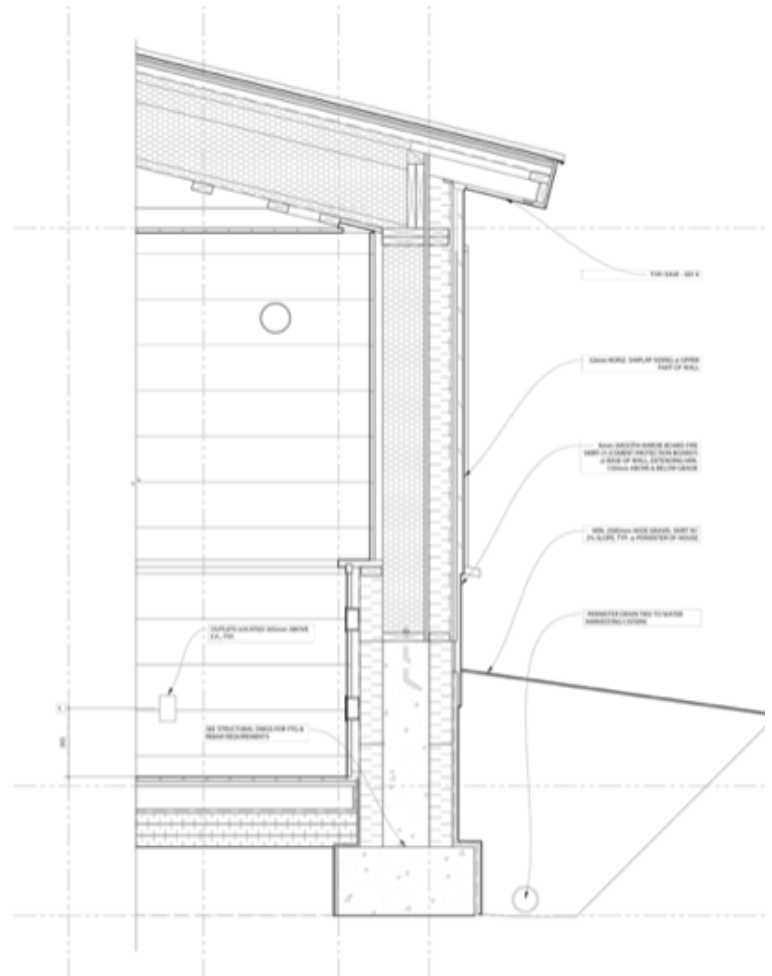
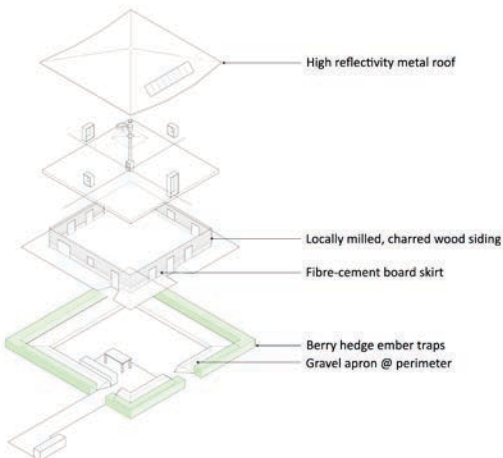
Floor plan, drawing, John Bass (UBC SALA).



Cultural specificity



Fire Responsiveness



Clockwise from top: Early scheme, drawing, Marion Gelinas (UBC SALA); section detail, drawing, John Bass (UBC SALA); and cultural specificity and fire responsiveness strategies, diagram, Remi Landry Yuan (UBC SALA).

WATER IS OUR FRIEND: AMPHIBIOUS RETROFIT FOR FLOOD MITIGATION



William Sutherland's property flooded in April 2024, video, April 9, 2024, Douglas Thomas, YouTube.

Location: Peguis First Nation, MB

Stage of Completion: Ongoing – completion expected in summer 2025

Client: William Sutherland (Peguis FN)

Project Leaders: William Sutherland and Elizabeth English

Project Design Team: University of Waterloo and Buoyant Foundation Project colleagues Elizabeth English, John Straube, and Alexa Holder

Contractor: William Sutherland (Peguis FN)

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Retrofit system, modular



Peguis FN member William Sutherland, David Lipnowski, *Winnipeg Free Press*.

Role of Nation & Community

In Peguis First Nation, a community which experiences chronic flooding, the development of an amphibious home is underway for member William Sutherland. William's family has lived on this land for generations, yet severe and recurrent flooding has put him at risk of property damage and being displaced. As the client, contractor, and coordinator, he is leading the amphibious retrofit of a new modular home to mitigate the effects of future floods. The University of Waterloo Team, including the Buoyant Foundation Project, is designing the amphibious installation, and acting in a supportive capacity. First Nations communities like Peguis FN are disproportionately exposed to flooding, and increasingly severe flooding is expected due to climate change and human manipulation of upstream water flow. Traditional solutions, like dams, flood walls, and levees, require large-scale construction, produce adverse environmental impacts by altering water flows, and cannot be easily modified if flood conditions worsen over time. Conversely, amphibious architecture works with water, minimizing disruption, displacement, and disconnection from the land and water. William's home will serve as an example of how amphibious applications to existing homes in Indigenous communities can promote autonomy, allowing Indigenous people to build climate resilience in place.

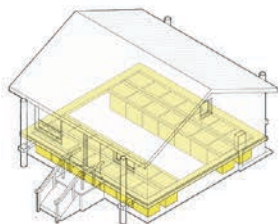
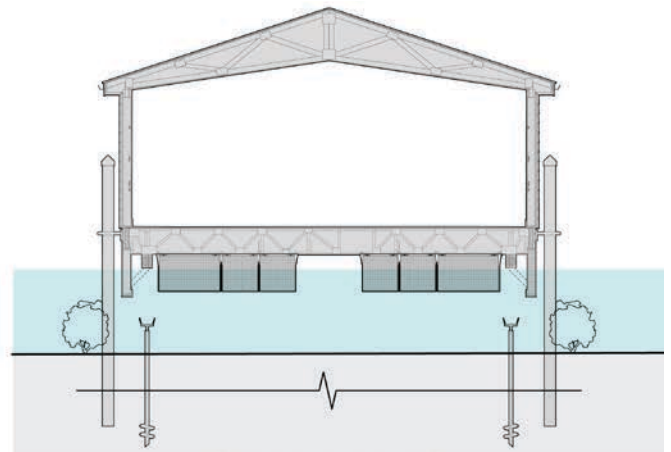
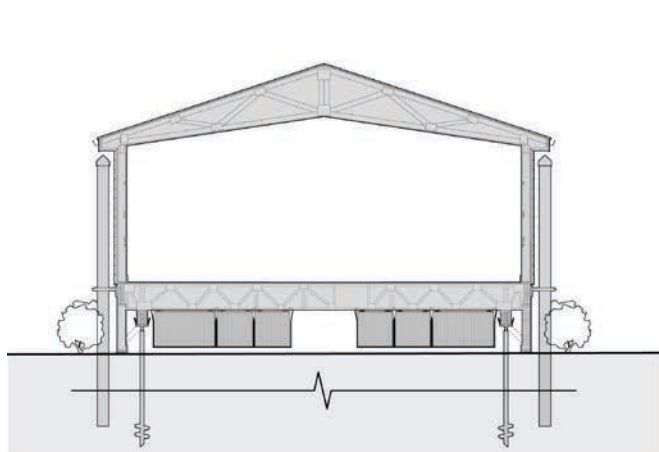
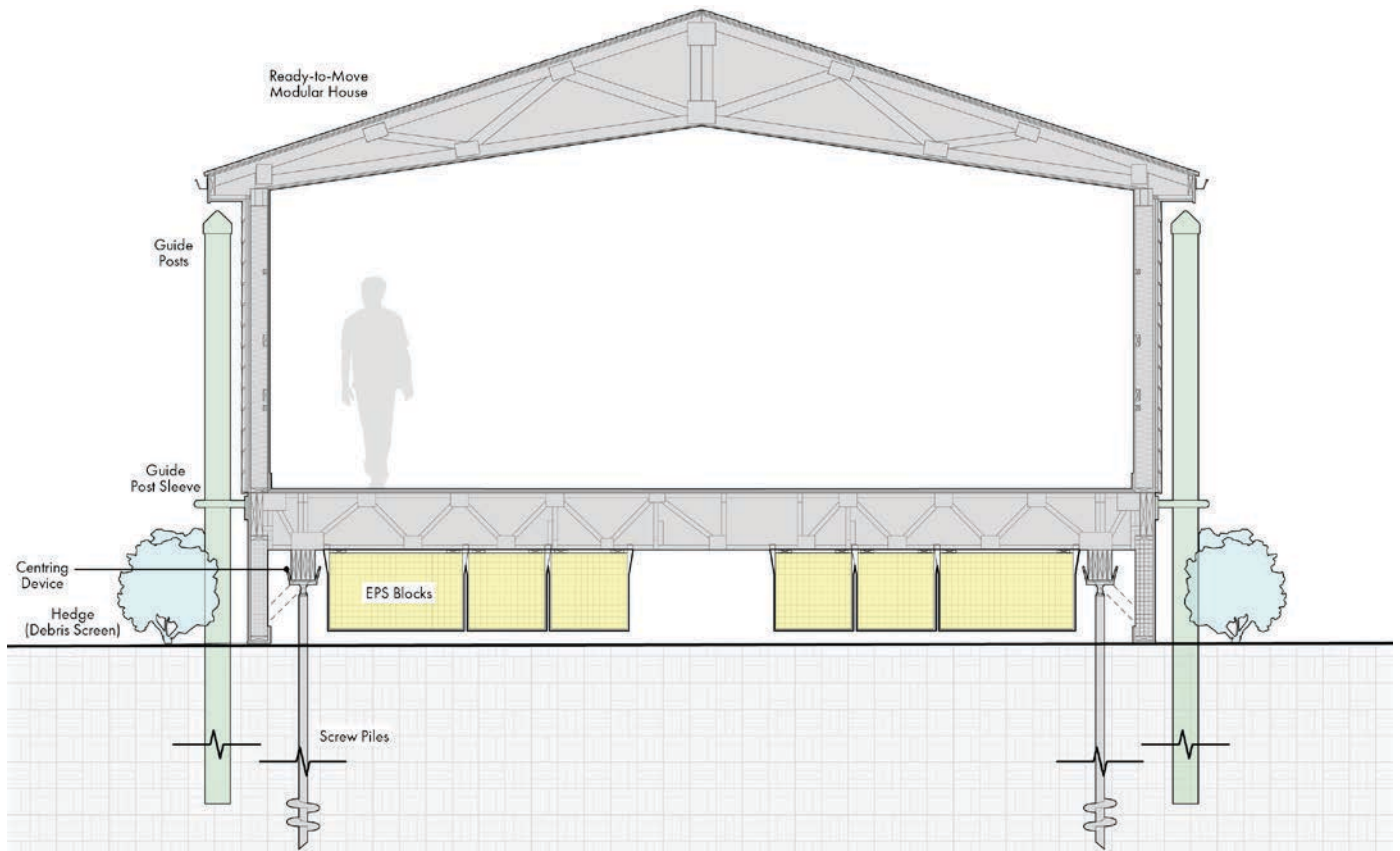
What is Innovative About it?

For Indigenous communities that face severe and recurrent flooding, amphibious architecture offers a dynamic solution that protects homes without obstructing the natural flow of water. Although examples of amphibious architecture exist around the world, such as in the Netherlands and Louisiana, this project involves developing solutions that are specifically suitable for Indigenous communities in Canada. The project employs a retrofit approach, modifying a conventional modular home to add an amphibious foundation. The amphibious home will sit on dry land when water levels are normal but is able to float in a flood due to the foundation's buoyancy elements. The installation of guidance posts will secure his home in place while it is floating and allow it to return to its original position undamaged when flood waters recede.

Construction + Technical Innovations

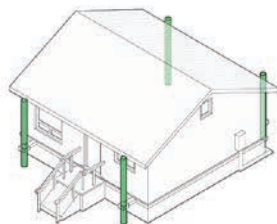
- Amphibious retrofit to single-family modular construction
- EPS blocks provide buoyancy
- Steel or timber guidance posts secure floating home

References: Elizabeth English, info@buoyantfoundation.org, (University of Waterloo, Buoyant Foundation Project), email correspondence.



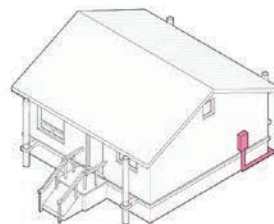
Buoyancy Elements

EPS blocks added to crawlspace beneath floor joists in order to float building.



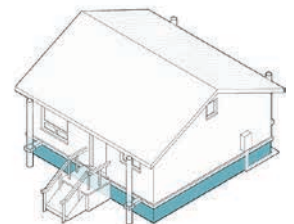
Guide Posts

Guidance posts, made from timber or steel, hold the house in place.



Utility Connections

Connections to septic system and utilities must be modified so the house can move.



Debris Screen

Something must block floating debris - this project is considering landscaping and fencing as options.

From top to bottom: Sections through the amphibious retrofit home, drawing, Alexa Holder and the Buoyant Foundation Project; and retrofit components, diagram, Alexa Holder and the Buoyant Foundation Project.



VOLUMETRIC MODULAR

(UP TO 3 STORIES)



Uses a replicable housing typology or unit within a building height up to 3 stories.

ROUND PRAIRIE ELDER'S LODGE



Building exterior, photograph, Jason Surkan.

Location: Saskatoon, SK

Completed: December 3, 2021

Client: Central Urban Métis Federation Inc. (CUMFI)

Project Leader: Kelly Pruden

Project Architects: David T Fortin Architect and Oxbow Architecture

Builder Partners: Big Block Construction and Grandeur Housing (prefabricated building manufacturer)

Additional Consultants: Medicine Rope Strategies, and Vereco Homes (energy study)

Criteria:

- Métis-led
- Indigenous Design/Architect (from David T Fortin Architect)
- Innovative Construction

Typologies: Elder housing, multi-unit



Unit interior, photograph, Jason Surkan.

Role of Community

Working alongside CUMFI, engagement with the urban Métis community and Elders brought forth the focus on safety, health, and wellness, both physically and spiritually grounded in Métis culture and knowledge. The multi-unit residential building offers independent living for Elders with support, inspired by the Round Prairie Métis settlement. Architectural building features pay homage through material selection, and patterns that resonate with the local population. Elders are some of the most vulnerable and isolated people and the need for culturally appropriate, supportive, and affordable housing is necessary for those having to live and adapt to urban settings, oftentimes disconnected from their community and cultural identity. Gathering spaces allow for residents to actively partake in activities such as preparing meals and visiting with families close to their units. These social spaces are an important to alleviating isolation, loneliness, and the loss of culture for the residents.

What is Innovative About it?

The 3-story modular build incorporates both site-built amenities and 26 apartment-style units, providing multi-unit, rental housing that is affordable and accessible, and giving Elders the agency to maintain their independence. The project enables Métis Elders to live in an environment that provides services to address age-related challenges and considers programming for gathering and cultural expression, such as the communal kitchen for preparing shared meals, the large multi-use gathering space with a central fireplace, the spiritual room for prayer, smudging or quiet contemplation, and outdoor shared gardens with traditional medicinal plantings and fruit trees. It was developed with culturally appropriate design considerations while prioritizing wrap-around health and cultural supports. The Elders were directly involved in the design process.

Construction + Technical Innovations

- Built to Net Zero Ready standards by adding solar panels to the roof, considering sustainability and renewable energy
- Hybrid construction: volumetric modular with glulam timber frame for amenity wing

References: "Round Prairie Elder's Lodge," David T Fortin Architect, <https://www.davidtfortinarchitect.com/round-prairie-elders-lodge>.



From top to bottom: Building frontage, photograph, Jason Surkan; and shared gardens, photograph, Big Block Construction.

MISATIMOSIMÔWIN MÎHKOWÂP (HORSE DANCE LODGE)



Modular units being craned into place, photograph, Big Block Construction.

Location: Regina, SK

Completed: October 2023

Client: Silver Sage Housing Corporation and Regina Treaty/Status Indian Services (RT/SIS)

Project Leader: Regan Morris and Tanya Ritchotte

Project Architect: David T Fortin Architect

Development Partner: Big Block Construction

Additional Consultants: Grandeur Housing (prefabricated building manufacturer)

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Transitional housing, multi-unit



Communal space, rendering, David T Fortin Architect.

Role of Nation & Community

misatimosimôwin mîhkwâp (Cree) is a transitional space that will support Indigenous individuals reintegrating into the city with cultural supports in place. In collaboration with Silver Sage Housing and Regina Treaty/Status Indian Services (RT/SIS), community engagement led to a series of values infused in the modest design. Community artists, including Linda Obey-Lavallee helped to design the sunshades, unit signage, selection of paint colours, and imaging which captures the spirit of the initial name for the project, Home Fire Complex (Big Block Construction, October 26, 2023). Through this partnership, she meaningfully shared some of the teachings she received, the significance of the colours, and the resonating importance it will have for those needing a safe space to heal. The angled wood posts similarly pay homage to the 15 tipi poles of the region's First Nations peoples. The project utilizes modular construction to ensure affordability and is designed to meet Net Zero Ready standards.

What is Innovative About it?

Part of the federal government's Rapid Housing Initiative, one of the goals of the project was to provide housing for urban Indigenous peoples as quickly as possible while maintaining high building standards. Through the project's confluence of housing and on-site support services operated by RT/SIS, those at risk of homelessness can receive appropriate support for mental health, addictions, and training ingrained in culturally sensitive activities and programming (Big Block Construction, October 26, 2023). The 3-story modular build contains 29 units made up of studio, 2-bedroom, and 3-bedroom dwellings for those with children. Utilizing modular construction methods, the building was craned over two days in April 2023. The building has been awarded the 2023 Green Build of the Year by the Regina & Region Home Builders' Association in recognition of its construction surpassing building standards for reduced environmental impact.

Construction + Technical Innovations

- Energy efficient design built to Net Zero Ready standards
- Fuel source: natural gas heating in suites, common space, and office; building-wide cooling and vestibule heating provided by electricity; and potential future roof solar array addition
- Heating and cooling: hydronic in suites and common areas via either boilers or chiller
- Water heating: via natural gas boilers
- Ventilation: fantech ERVs

References: "misatimosimôwin mîhkwâp (Horse Dance Lodge)," David T Fortin Architect, <https://www.davidtfortinarchitect.com/horsedance>; and "Reoccupying the land: Horse Dance Lodge sets a new standard for transitional housing," Big Block Construction, October 26, 2023, <https://www.bigblockconstruction.ca/post/reoccupying-the-land-horse-dance-lodge-sets-a-new-standard-for-transitional-housing>.



From top to bottom: Aerial view, photograph; and building frontage, photograph, Big Block Construction.

ROW HOUSING FOURPLEX PROTOTYPE



Colourful façade of the fourplex, photograph, EVOQ Architecture.

Location: Kuujjuaq, Inukjuak, and Kuujjuarapik in Nunavik, QC

Completed: 2006

Client: Kativik Regional Government (KRG)

Project Leader: Frédéric Gagné (formerly KRG)

Project Architect: EVOQ Architecture colleagues Alain Fournier and Éric Moutquin

Project Contractors: Kativik Regional Government Municipal Public Works Department

Criteria:

- Inuit-led
- Indigenous Design/Architect
- Innovative Construction

Typology: Fourplex

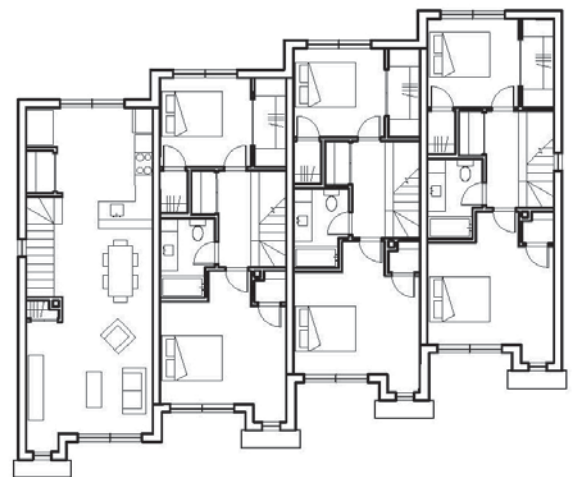
Role of Community

In an effort to make a dent in the decades-old housing shortage across Nunavik, the Kativik Regional Government (KRG) initiated the effort to design a housing unit that would be culturally responsive; have an increased density to reduce sprawl, cost of municipal infrastructures, delivery of trucked water, sewage and fuel; and be compact, energy efficient and cost-effective. This housing unit additionally needed to be easy to maintain and operate. The resulting design is a 2-story fourplex modeled after the row house typology and consists of three 2-bedroom units and one 1-bedroom unit, all 4.3 m wide. Prototypes were built in 2006 in Kuujjuaq, Inukjuak, and Kuujjuarapik using local labour. Since then, KRG has built 10 additional row houses between 2007 and 2012 in communities across Nunavik, further optimizing the processes of construction and maintenance.

What is Innovative About it?

The fourplexes were predominantly built in wood frame construction, using wood sourced from suppliers in the South. Though a conventional construction, the form of the buildings is responsive to its location. In order to reduce the visual impact that a 2-story volume would have in the context of a northern village of predominantly single-family homes or 1-story duplexes, the scale of the fourplexes was reduced by staggering the units. This division of the façade articulates and helps to identify the individual units and provides a sense of privacy for their entrances. The brightly coloured entrances echo the qamotiq (traditional Inuit sled), which continues to be widely used in Nunavik and is sometimes seen standing upright against buildings. The shared services and mechanical room are tucked under the 1-bedroom unit.

References: EVOQ Architecture, email correspondence.



From top to bottom: Entrances along the fourplex frontage, photograph; and ground and second floor plans, drawing, EVOQ Architecture.

JOAMIE COURT AND TUNDRA RIDGE MULTIPLEX



13-plex frontage, photograph, Andrew Latreille.

Location: Joamie Court and Tundra Ridge in Iqaluit, NU

Completed: 2021

Client: Nunavut Housing Corporation (NHC)

Project Architect: EVOQ Architecture colleagues Alain Fournier and Roxanne Gauthier

Project Contractor: Pilitak Enterprises Ltd.

Additional Consultants: Concentric, Bouthillette Parizeau (BPA), EXP, and Altus Group

Criteria:

- Inuit-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: 11-plexes and 13-plexes

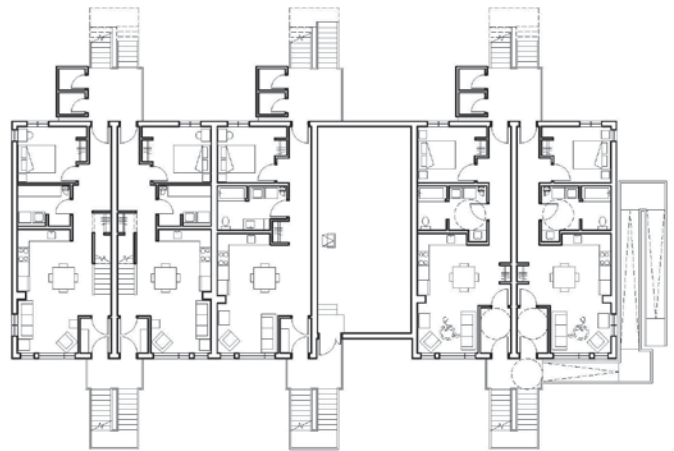
Role of Community

The Nunavut Housing Corporation (NHC) is a public agency of the Government of Nunavut that provides opportunities for all residents of Nunavut to have homes that support a healthy, secure, independent, affordable, and dignified lifestyle. The agency works with communities to provide housing to Nunavummiut. The NHC launched a project to design four new 3-story apartment buildings in Iqaluit, Nunavut, providing 46 additional social housing units. In response to the housing unit shortage in Nunavut, their objectives were to densify and optimize the use of existing sites in Iqaluit to maximize the number of dwelling units. The project included two sites with two buildings each: Joamie Court comprising 24 units, and Tundra Ridge comprising 22 units. At the request of the NHC Directorate technical services, in order to meet the needs of a large range of future tenants, each building is comprised of 1-bedroom, 2-bedroom, 3-bedroom, 1-bedroom aging-in-place, and 1-bedroom barrier-free units.

What is Innovative About it?

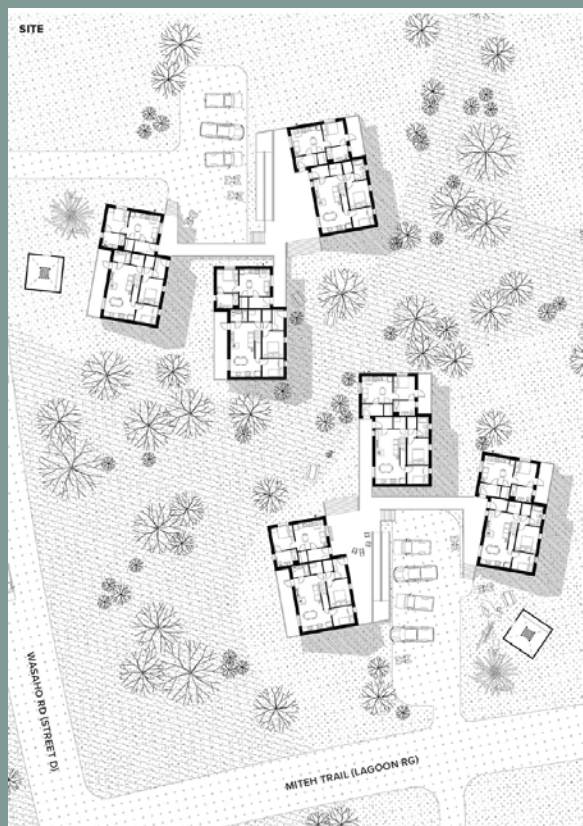
The new buildings were required to consider the following parameters: provide dignified housing to the Iqalumiut, aging-in-place units for Elders and barrier-free units, be designed for ease of maintenance and operation, and be compact, highly energy efficient to exceed the National Energy Code of Canada for Buildings 2017 (NECB), and cost-effective. The use of durable and high-quality materials paired with a wood frame construction in the design provides the NHC with sustainable and cost-effective buildings throughout their entire life cycle. Additionally, with the goal of providing a living environment appropriate to local conditions, the housing units address specific needs of the Nunavummiut with design elements such as a cold exterior storage, a large entrance hall, and hunting rifle cabinets integrated in the plans.

References: EVOQ Architecture, email correspondence.



Clockwise from top: 11-plex and 13-plex siting within Iqaluit, photograph, Andrew Latreille; 11-plex frontage, photograph, Andrew Latreille; 11-plex floor plan, EVOQ Architecture; and sheltered stair access, photograph, Andrew Latreille.

A RESILIENT DUPLEX FOR FORT SEVERN FIRST NATION



Site plan, Two Row Architect and KPMB.

Location: Fort Severn First Nation, ON

Stage of Completion: 2020 (proposed only)

Client: Fort Severn First Nation, National Research Council of Canada's Path to Healthy Homes Program

Project Architects: Two Row Architect and KPMB

Additional Consultants: Blackwell Structural Engineers, JMV Consulting, and RDH Building Science

Criteria:

- First Nations-led
- Indigenous Design/Architect (from Two Row Architect)
- Innovative Construction

Typology: Duplex, Elder housing, family

Role of Nation & Community

Developed with Fort Severn First Nation band leaders and community members, the project team stayed in the community for two 2-day trips, assessing existing conditions and holding community engagement sessions; including meetings, site visits to housing units under construction, and multi-generational community workshops to identify key housing impacts. The duplex housing system allows Elders and young families to live independently as neighbours and support each other. A single-story accessible Elder's apartment is attached to a 2-bedroom unit with a flexible loft space. An entry porch is shared, encouraging interaction between neighbours. The Elder's apartment has a private terrace off the bedroom. The site plan includes 12 units in two clusters rather than typical rows of street-facing lots, with a shared driveway. Each is connected by a network of raised walkways forming an interior shared space inclusive of an accessible ramp for residents with mobility challenges. The design integrates cultural needs and maintains connections with the land and outdoor communal cooking that existing housing in First Nations communities often lacks.

What is Innovative About it?

The project considers extreme climate and remote logistics by combining existing standard stick-frame construction techniques that are familiar to crews working in the community with upgrades to the envelope using Passive House-inspired principles. Prefabricated components with a lightweight space frame foundation eliminate the need for concrete. The foundation can be hand-adjusted, adapting to ground shifts caused by annual muskeg freezing and thawing, and climate change-related permafrost thawing. This results in durable, easily transportable construction that can be adapted into various unit configurations depending on the specific needs of the families and intergenerational living. In addition to sustainable practices, the cladding design uses locally harvested tamarack shingles that are durable and natural. The hope is to generate an opportunity to create local prefabrication facilities whose production occurs during the winter, in preparation for the short summer building season. The project is the winner of the World Architecture Festival (WAF) 2021 WAFX Social Equity award and a 2021 Canadian Architect Award of Excellence.

References: "A Resilient Duplex for Fort Severn First Nation," *Canadian Architect*, November 29, 2021, <https://www.canadianarchitect.com/a-resilient-duplex-for-fort-severn-first-nation/>; "Resilient Housing Proposal for Fort Severn First Nation wins World Architecture Festival (WAF) Award," KPMB, July 5, 2021, <https://www.kpmb.com/news/resilient-housing-proposal-for-fort-severn-first-nation-wins-world-architecture-festival-waf-award/>; and "Two Row Architect and KPMB Architects, "A Resilient Duplex for Fort Severn First Nation - NRCC Path to Healthy Homes Program," report, https://issuu.com/kpmbarchitectsofficial/docs/a_resilient_duplex_for_fort_severn_first_nation_-_.



PLAN



OPEN LOFT



- STORAGE
- PLAYROOM
- HOME OFFICE / ENTERPRISE
- COMMUNITY ACTIVITIES
- SLEEPING LOFT

MASTER BEDROOM SUITE



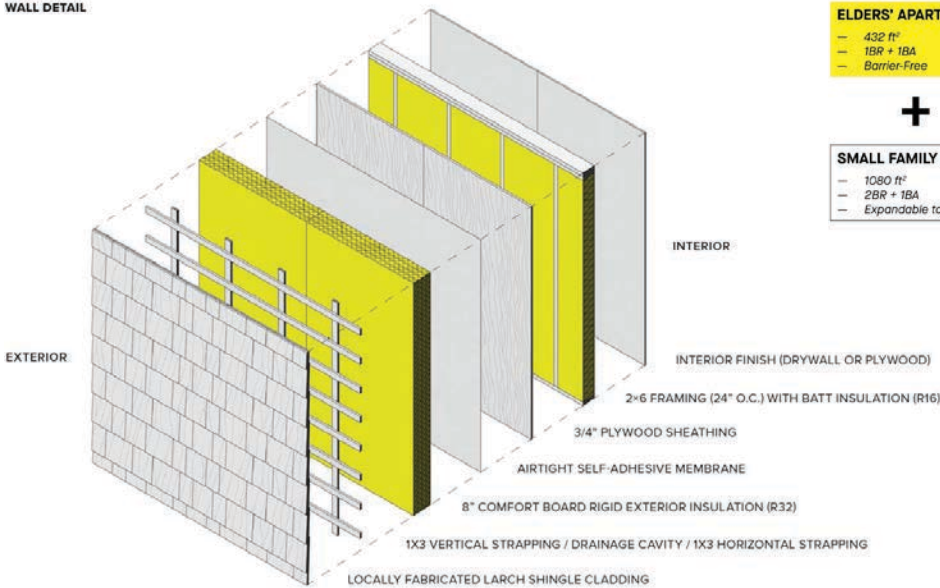
- PRESERVES OPEN AREA FOR PLAYROOM OR WORK SPACE

PRIVATE APARTMENT



- SELF-CONTAINED UNIT FOR MULTI-GENERATIONAL FAMILY OR CAREGIVER

WALL DETAIL



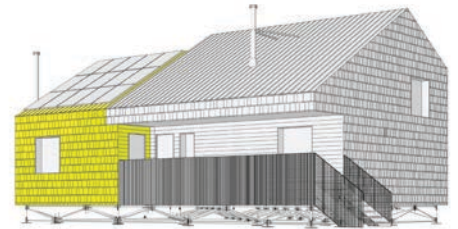
ELDERS' APARTMENT

- 432 ft²
- 1BR + 1BA
- Barrier-Free



SMALL FAMILY UNIT

- 1080 ft²
- 2BR + 1BA
- Expandable to 3BR/2BA



From top to bottom: Duplex exterior, rendering; ground floor and loft plans, drawing; wall assembly, diagram; and Elders' Apartment and Family Unit, diagram, Two Row Architect and KPMB.



PREFABRICATED BUILDING COMPONENTS



Uses large building components, such as whole wall assemblies, that are fabricated off-site and transported and assembled on-site.

WII GYEMSIGA SIWILAAWKSAT STUDENT HOUSING



Building exterior, photograph, Brit Kwasney, www.britkwasneyphoto.com.

Location: Terrace, BC

Completed: 2022

Client: Coast Mountain College

Project Leader: Aiden Callison (Associate Principal at hcma, Hwlitsum Nation)

Project Architect: hcma

Project Contractor: IDL Projects

Additional Consultants: Scouten Engineering, and Morrison Hershfield (now Stantec)

Criteria:

- Indigenous-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Student housing, hotel suite, multi-unit



Unit interior, photograph, Brit Kwasney, www.britkwasneyphoto.com.

Role of Community

Named by the Kitsumkalum community, “where learners are content and comfortable” Wii Gyemsga Siwilaawksat serves seven different First Nations: the Haida, Tsimshian, Haisla, Nisga’a, Gitksan, Wet’suwet’en, and Tahltan peoples. The original project brief was developed by Coast Mountain College using decolonized, indigenized approaches to engage and understand the needs of its communities. The project aims to enable Indigenous students to flourish in a post-secondary education where they see themselves reflected. In attaining this goal, an Indigenous-led process of co-creation allowed the project to be informed by Indigenous peoples’ stories and their right to share histories with future generations. Indigenous design principles were embedded, including furniture, interior, high energy-efficient building, co-created signage and wayfinding, and art created by students and faculty. The facility showcases 70 different First Nations art installations, representing the Northwest Coast region and the First Nations communities the College serves. Signage throughout the building incorporates the local language of Sm’algyax, translated by Elders and language speakers.

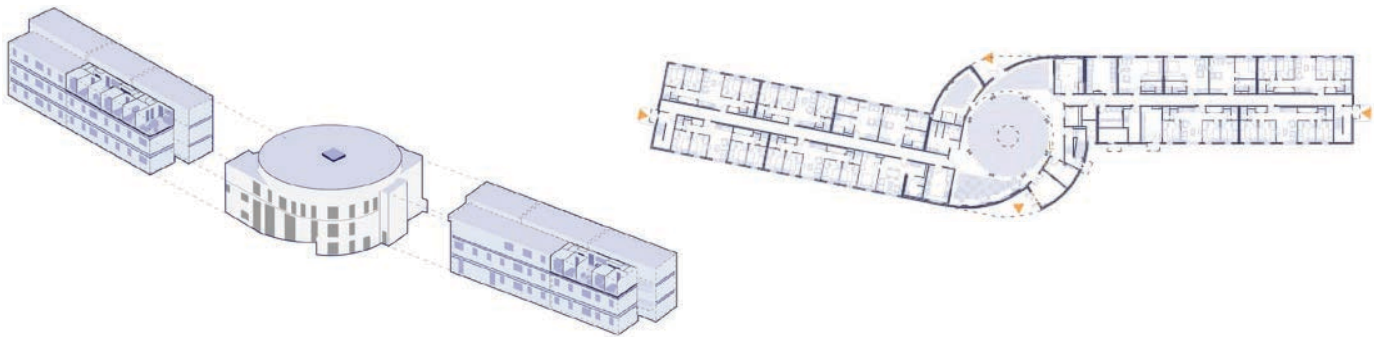
What is Innovative About it?

The 3-story modular building replaces a 40-year-old student housing, providing 108 student beds, 2 hotel suites for visiting families, an Elder’s suite, 6 shared kitchens, 2 collaboration areas, a computer lab, an e-sports room, a maker space, and bike storage. The integrated housing utilizes 36 prefabricated light-frame wood modules built off-site. The central mass timber atrium with its pin-wheel design was site-built and dovetails with the modular wings. The cedar-clad central lobby space, representative of a hollowed-out cedar tree (heartwood), hosts gatherings and ceremonies. Meeting the Douglas-fir glulam posts, it takes cues from traditional typologies where natural ventilation allows heat to escape. Cedar meaningfully informed the building’s expression. Cedar trees hold a respected space for Northwest Coast First Nations peoples, as they are used in everyday life and ceremony and have been integral for millennia. The exterior cladding integrates Tsimshian weaving patterns to unite the building’s two student housing wings, mimicking the cedar bark expression.

Construction + Technical Innovations

- Site-built, integrates modular housing components, meets step Code 4
- BC sourced western red cedar cladding
- Glulam, mass timber, light frame, modular, prefabricated

References: “Wii Gyemsga Siwilaawksat Student Housing,” hcma, <https://hcma.ca/project/wii-gyemsga-siwilaawksat/>.



Clockwise from top: Building exterior, photograph, Brit Kwasney, www.britkwasneyphoto.com; interior seating space, photograph, Brit Kwasney, www.britkwasneyphoto.com; volumetric diagram and residential floor plan, drawing, hcma; and central lobby, photograph, Brit Kwasney, www.britkwasneyphoto.com.

DÉLJNE HOUSING



Single unit exterior, rendering, Formline Architecture + Urbanism Inc.

Role of Nation & Community

Through in-community engagement, the project team met with the Déljné community to understand typical day-to-day needs, lifestyle, existing housing conditions, and successful and unsuccessful approaches to housing within the local environmental and cultural context. Traditional and more recent housing typology discussions revealed that the community connected strongly with the log cabin building type, which was adopted in the iterative design options. The design focused on stand-alone homes with the flexibility to adapt to duplex to quadplex arrangements, and was designed to Passive House standards to reduce fossil fuel usage.

What is Innovative About it?

The typical layout of a 1-bedroom unit included a compact kitchen bathroom core to minimize plumbing runs, a porch transitional space, an oversized mechanical room to accommodate the 350-gallon water tank, furnace, and chest freezer for wild game, seasonal clothing, and a tipi for outdoor cooking. Immediately surrounding the unit, an open translucent shed garage and storage area share a similar language to the cooking tepee. The vision is to build 10 units in the community on a deserted runway. Three different proposed alternative neighbourhood layouts were explored. Of these options, the first is an oval shape that arranges the houses and cooking tipis on the inside of the oval, while a designated path for walking and quadding and snowmobile traffic is located in the centre, separate from the driveways. The second option is a circular configuration centred around a communal space for tipis, gathering, and feasting, while the sheds and parking remain on the outermost edge. The last layout considers the decommissioned runway, orienting 5 houses on either side facing inwards, again maintaining the tipis on the interior end of the homes.

Construction + Technical Innovations

- Insulated floor systems are preferred, with separate false floor of 2x4 or 2x6 to run electrical, plumbing or hydronic services without interfering with the continuous insulated framing
- Considers oil fired forced air furnaces to reduce energy loads, Passive House building envelope, ERV units, high efficiency boiler and hydronic systems; wood burning stove considered as an alternative to supplement the above systems
- Grade beams on pile jack platforms based on community preference and ease of manual adjustment; considers piles anchored to bedrock to be the best solution if budget allows

Location: Déljné, North West Territories

Stage of Completion: 2020 (proposal only)

Client: Déljné Got'ine, National Research Council of Canada's Path to Healthy Homes Program

Project Leader: Alfred Waugh

Project Architect: Formline Architecture + Urbanism Inc.

Additional Consultants: Stitch Consulting & Design Inc.

Criteria:

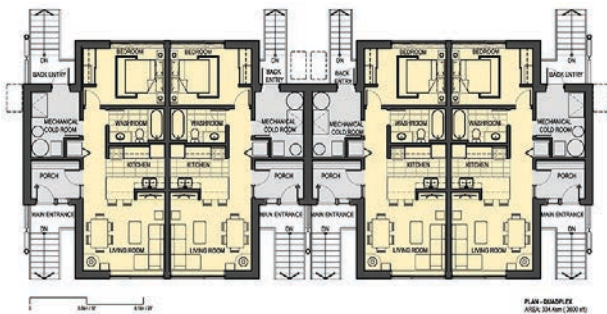
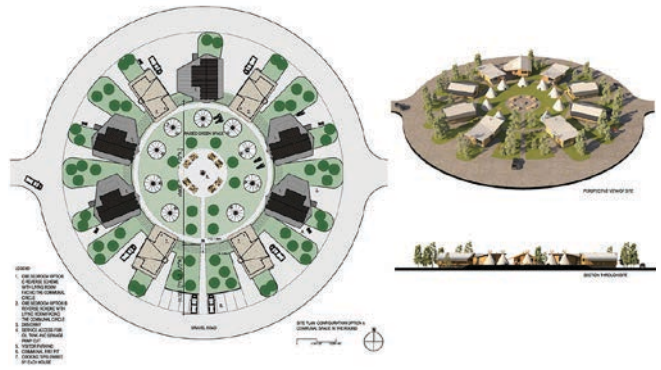
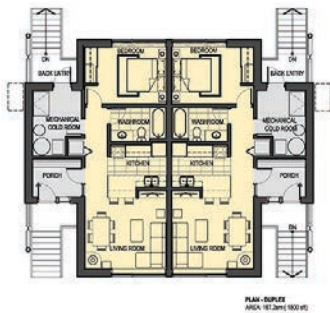
- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Single bedroom, detached



Plan layout options, drawing, Formline Architecture + Urbanism Inc.

References: "Healthy Housing," Formline Architecture + Urbanism, <https://www.formline.ca/portfolio/natural-research-council-canada-path-to-healthy-housing/>.



Clockwise from top: Units in a community setting, rendering, Formline Architecture + Urbanism Inc.; neighbourhood configurations, drawings and renderings, Formline Architecture + Urbanism Inc.; and duplex and quadplex plan options, drawings, Formline Architecture + Urbanism Inc.

SIX NATIONS OF THE GRAND RIVER TINY HOMES



Kitchen in tiny home prototype, photograph, Sarah Martin, SNGRDC.

Location: Six Nations of the Grand River, ON

Stage of Completion: 2023 (pilot phase)

Client: Six Nations of the Grand River

Project Leader: Six Nations of the Grand River Development Corporation (SNGRDC)

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Tiny home, affordable

Role of Nation & Community

Tiny homes that will be built and sold by Six Nations of the Grand River Development Corporation (SNGRDC) aim to provide safe, affordable, secure, and accessible housing for Six Nations band members in response to housing concerns outlined in the 2019 Six Nations Community Plan. According to SNGRDC Public Relations representative Katie Montour, the impact of the housing crisis in Six Nations is shown in the lack of land to build new homes on the territory, lack of housing availability and affordability, and poor-quality housing, among other issues (Renzella, 2023). Two pilot single-story prefabricated tiny homes were unveiled in August 2023 at an open house and received strong interest from the community. Since the completion of the pilot phase, SNGRDC's Tiny Homes team is currently taking orders for builds in 2024. As of 2024, they have signed a Memorandum of Understanding with Six Nations Housing, which will allow band members who are accessing the Six Nations Housing loan programs to coordinate the purchase of these tiny homes through prescribed payment terms.

What is Innovative About it?

The SNGRDC is currently offering two for purchase home options: a 480 sq.ft. 1-bed 1-bath unit called the Sparrow 480, and a 960 sq.ft. 3-bed 1-bath called the Heron 960. These tiny homes are built to code and inspected and will arrive to the buyers with electrical and plumbing installed. The buyers will be responsible, however, for any site preparation, such as building the desired foundation and connecting the home to a water source. In addition to serving multi-occupant households, the future implementation of the SNGRDC tiny homes in Six Nations provides a reasonably sized housing option for young people who would otherwise have to move off-reserve to access affordable housing. As this project shows, the tiny home model can be an emerging solution to affordably increase the housing stock in Indigenous communities across Canada.

References: J.P. Antonacci, "'Overwhelming' interest in Six Nations tiny homes project," *The Hamilton Spectator*, November 10, 2023, https://www.thespec.com/news/hamilton-region/overwhelming-interest-in-six-nations-tiny-homes-project/article_94369b8a-fdc7-5bca-b72e-aabb3b3c519a.html; Mike Renzella, "Six Nations moving forward with tiny homes project," *The Haldimand Press*, November 16, 2023, <https://haldimandpress.com/six-nations-moving-forward-with-tiny-homes-project/>; "Six Nations Tiny Homes," Six Nations of the Grand River Development Corporation, <https://sndevcorp.ca/portfolio/tinyhomes/>; and Six Nations of the Grand River Development Corporation, "Six Nations of the Grand River Development Corporation and Six Nations Housing Sign Tiny Homes MOU," press release, January 22, 2024, <https://sndevcorp.ca/six-nations-of-the-grand-river-development-corporation-and-six-nations-housing-sign-tiny-homes-mou/>.



Tiny home prototype exterior, photograph, Sarah Martin, SNGRDC.



PANEL SYSTEMS



Expedites transportation
and/or construction
processes through ready-
to-assemble planar or slab
building components.

CARDINAL HOUSE



Home frontage, photograph, Mark Hemmings.

Location: Elsipogtog First Nation, NB

Completed: 2019

Client: Elsipogtog First Nation

Project Leader: Adrienne Fainman (Douglas Cardinal Architect)

Project Architect: Douglas Cardinal Architect

Project Contractors: Fab Structures (site assembly), and Element5 Co. (off-site prefabrication)

Additional Consultants: Aspect Structural Engineers

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Single family residential



Home exterior showing the curved roof profile, photograph, Mark Hemmings.

Role of Nation & Community

In a meeting with Elsipogtog First Nation Elders, Douglas Cardinal was asked to design a better house for their people. The goal was to create a healthy, lasting home for future generations that would address the standard stick-build house with drywall, which has frequently resulted in health risk problems. The idea of using wood worked well, not only as a renewable building material, but through the material's expression of comfort. The Cardinal House is an affordable solution that uses modern materials and methods to successfully address many of the key issues contributing to the housing crisis.

What is Innovative About it?

The 1,100 sq.ft. 2-story, 3-bedroom, 2-bathroom single-family Cardinal House is a high-performance, mold-resistant mass timber design. Manufactured off-site, the modular components are shipped on a single truck and assembled by a small crew in just two days. The factory-built house uses innovative wall panels called CLIPs (cross-laminated insulated panels) for the building envelope. The CLIPs are fabricated with the insulation preinstalled in the manufacturing facility, a design strategy that eliminates thermal bridging and the mold-causing condensation that can come along with it. CLIPs are a cost-efficient composite building element fabricated with CLT and other products. The exterior walls have Type II EPS insulation and a thermal performance of R-28. The roof cassettes are insulated with cellulose, composed of 85% recycled newspaper, and have an R-value above R-60. The Passive House, energy-efficient triple-glazed windows were preinstalled in the manufacturing facility, contributing to the superior thermal performance of the building envelope.

Construction + Technical Innovations

- CLIP (cross-laminated insulated panels) exceed Passive House standards
- Prefabricated, energy-efficient, air-tight envelope (thermal bridge free)
- Insulated slab on grade has radiant heating with epoxy coating, responding to site soil conditions and reducing heat loss, excavation, and material costs such as concrete typically needed for a foundation

References: MCH, "The Project," <https://www.mchqc.ca/cardinal-house/>; and Wood Design & Buildings, "Cardinal House," <http://www.wooddesignandbuilding.com/cardinal-house/>.



From top to bottom: Cross-laminated insulated panel installation, photograph; foundation prepared for panels, photograph; and roof panel installation, Mark Hemmings; and home interior, photographs, Fab Structures.



COMMUNITY-LED DESIGN



Projects initiated and administered by First Nations, Inuit, or Métis communities or governments involving reciprocal relationship building and sharing of input through all stages from community leadership, Elders, Knowledge Keepers, youth, community members, and/or Indigenous organizations.

DAVE PRANTEAU ABORIGINAL CHILDREN'S VILLAGE



Totem poles flanking a main entrance, photograph, Patrick R. Stewart Architect.

Location: Vancouver, BC

Completed: 2012, landscape 2023

Clients: Lu'ma Native Housing Society and BC Housing

Project Architect: Patrick R. Stewart Architect

Project Contractor: Golden Globe Construction Ltd. (now Signia Construction Ltd.)

Additional Consultants: Bogdonov Lerer Engineering Inc., Stantec Consulting Ltd., DF & Associates Consulting Ltd., EXP Global Inc, GeoPacific Consultants Ltd., and Terra Social Purpose Real Estate

Criteria:

- Indigenous-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Foster children long-term housing, supportive, market, mixed-use



Opening day ceremony, photograph, Government of British Columbia.

Role of Community

The vision of this project is to create a stable place of belonging for Indigenous children being raised in government care with support and programming. Included is a large gathering space for cultural-related activities and teachings, such as youth mentorship, support for families, activities for children, and counselling. A unique aspect of the project is that housing units are allocated and belong to the foster child. For this reason, in cases where the foster families cannot provide adequate care, they move out, but the child stays permanently in the building. To create a caring environment, the building's programming provides training for foster parents, respite workers, and counselling support for families. A Nisga'a artist's contribution of four totem poles were integrated into the main entries. Ceremony was included during the building process.

What is Innovative About it?

This 3-story supportive housing complex contains 24 units, with market, mixed-use, and long-term housing intended for Indigenous foster families, youth transitioning out of care, and low-income families, as well as offices for the Lu'ma Native Housing Society. The units consist of 3- and 4-bedroom apartments, as well as studio units for transitioning children aging out of the foster-care system with support and independent living guidance. The building serves multiple purposes, all centred around Lu'ma's goal to end the cycle of youth homelessness and poverty by providing a secure living environment. To that end, 10 of the 24 housing units are assigned for children and youth in foster care directly, to create permanence in their lives. The Children's Village also includes a medical centre providing culturally appropriate care, youth mentorship, housing outreach programs, and additional programming space. The complex's sweat lodge and additional outdoor spaces for youth cultural activities were completed in 2023.

Construction + Technical Innovations

- Timber framing integrated with conventional framing and pre-cast concrete

References: Patrick R. Stewart Architect, Aboriginal Children's Village," <https://www.patrickrستewartarchitect.com/aboriginal-children-s-village>.



From top to bottom: Totem poles flanking a main entrance, photograph, Patrick R. Stewart Architect; Lu'ma Medical Centre waiting room, Liana Glass; and building exterior, photograph, Terra Social Purpose Real Estate.

MUSKOWEKWAN FAMILY HEALING & WELLNESS CENTRE



Facility design community input, photograph, 1080 Architecture Planning + Interiors.

Location: Muskowekwan First Nation, SK

Completed: March 2, 2023

Client: Muskowekwan First Nation

Project Leaders: Councillor Cynthia Desjarlais and Chief Reginald Bellerose

Project Coordinator: Rachelle Holterman (HW Strategy)

Project Architects: 1080 Architecture Planning + Interiors, and Ray Gosselin Architect Ltd.

Project Contractor: Aurum Developments

Additional Consultants: KDM Constructors, and Lakeland Log + Timber Products

Criteria:

- First Nations-led
- Indigenous Design/Architect (from Ray Gosselin Architect Ltd.)
- Innovative Construction

Typologies: Emergency shelter, transitional, family



Community engagement drawing, photograph, 1080 Architecture Planning + Interiors.

Role of Nation & Community

Integrating a culturally responsive framework and multi-disciplinary mental and physical health services with traditional wellness programming, the project aims to heal historical traumas and negative intergenerational health and wellness. The Muskowekwan First Nation driven design identified a need for families to heal together, grounded in traditional practices, a culturally responsive approach, and a healing model that specifically addresses the needs of a community overcoming generational trauma and addictions during a 3-month multi-generational healing journey in a culturally supportive environment with community-based services supports. This model of care was developed with guidance from the community as well as several First Nation women practitioners and integrates healing guided by Elders and Knowledge Keepers on-site. The longer stay will benefit families, enriched by traditional languages, medicines, ceremonies, cultural activities, and land-based therapies. It also integrates required services with mainstream multidisciplinary health providers and long-term support without having to leave the community. The goal is to ensure appropriate staffing-resident ratios for successful, sound, viable, and high-quality delivery of services and programs.

What is Innovative About it?

The Family Healing & Wellness Centre allows families to stay together while participating in customized programming to support the entire families' healing journey. The unique program contains four log-style homes: three 4-bedroom family log homes and a fourth home for the healing program delivery as part of Phase 1. The full design concept envisioned additional phases which would add up to five family log dwellings and a larger central programming delivery building to complete the circular site layout. This phased approach supports building out this new model of care with a smaller number of families first to prove the concept. Guiding principles from the community as identified in engagement sessions that have driven the design process include environmental stewardship, daylighting, recognizing and utilizing the four directions, the importance of the circle, natural material use, safety, security, privacy, and universal accessibility. The entrance of each unit faces a central circle that supports outdoor gatherings and large year-round cultural events for the resident community. Additionally, each dwelling unit contains an intimate gathering circle dedicated to family healing ceremonies, discussion, and individual cultural practices such as smudging, sharing circles, and family gatherings.

References: Rachelle Holterman (HW Strategy), email correspondence; and Rachelle Holterman, "Driven by the Community - Muskowekwan Family Healing & Wellness Centre," ICE Network, November 16, 2020, <https://www.icenet.work/c/muskowekwan-first-nation/driven-by-the-community-muskowekwan-family-healing-wellness-centre-4400>.



Clockwise from top left: Completed log home interior, photograph; circular gathering space design, rendering; kitchen and dining space, rendering; log homes arranged around circular site, rendering; and outdoor fire pit, photograph, 1080 Architecture Planning + Interiors and Ray Gosselin Architect Ltd.

8-PLEX UVATTINUT SUPERVISED APARTMENTS



Supervised apartments façade, photograph, Blouin Orzes architectes.

Role of Community

Under the direction of the Crisis Centre of the Inuulitsivik Health Centre in Puvirnitug, this project was designed to respond to a need for housing for low-income Inuit adults living with chronic mental health and/or psychosocial issues and who are considered at risk of homelessness. The building's programming and architectural design were developed in collaboration with the Uvattinut Housing Corporation, an Inuit non-profit organization, and the Inuulitsivik Health Centre. It received financing by the Kativik Municipal Housing Bureau's Home Ownership Program. Consultation and review of progress with the users and funders continued throughout the project. The resulting building houses eight single-bedroom fully equipped units, two of which are located on the ground floor to accommodate occupants with mobility or physical disabilities. These rental apartments primarily serve Puvirnitug residents but are open to applicants across Nunavik ("About us," Uvattinut). An administrative office space for the Health Centre is also situated on the ground floor.

What is Innovative About it?

The project provides independent living for its residents within a supervised and supportive environment. Staff and on-site social workers assist residents with medication, maintenance of their apartment and provide social and recreational activities ("Home," Uvattinut). In addition to stating the space requirements, the client requested the building to be built on a foundation anchored to the rock, rather than on adjustable jacks placed on compacted granular fill – a symbolic as well as practical response to the desire to reconnect with the land. This foundation made it possible to use the heated crawl space beneath the ground floor for mechanical and plumbing systems. It also allowed the ground floor level to be set at less than 600 mm above grade which facilitates universal access to the building. The structure of the building is made up of a light wood frame construction.

Location: Puvirnitug, Nunavik, QC

Completed: September 2014

Client and Operator: Uvattinut Housing Corporation

Project Architect: Marc Blouin architecte (now Blouin Orzes architectes)

Project Contractors: EDC construction

Additional Consultants: Genivar Inc. (now WSP Global)

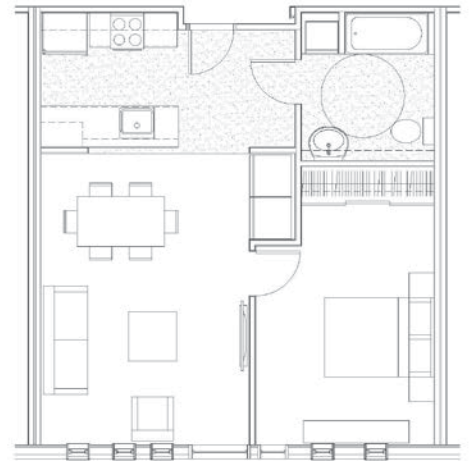
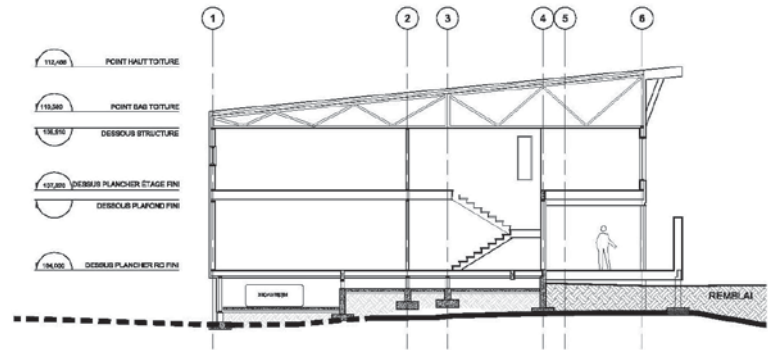
Funding Contributor: KMHB Home Ownership Program for Residents of the Kativik Region

Criteria:

- Inuit-led
- Indigenous Design/Architect
- Innovative Construction

Typology: Supportive housing

References: "About us," Uvattinut, <https://www.uvattinut.com/ressources>; Blouin Orzes architectes, email correspondence; and "Home," Uvattinut, <https://www.uvattinut.com/>.



Clockwise from top right: Cross section, drawing; unit plan, drawing; rear façade, photograph; frontage, photograph; and ground and second floor plans, drawing, Blouin Orzes architectes.

KIVALLIQ SENIOR'S LONG-TERM CARE FACILITY



Facility exterior, rendering, Verne Reimer Architecture Inc. and Blouin Orzes architectes.

Location: Rankin Inlet, NU

Completed: October 2024

Client: Government of Nunavut

Project Architects: Verne Reimer Architecture Inc. with Blouin Orzes architectes

Project Contractor: Mikim Construction Ltd.

Commissioning: WSP

Additional Consultants: MCW Consultants Ltd. (mechanical and electrical), Lavergne Draward & Associates Inc. (structural), KGS Group (civil), HTFC Planning & Design (landscape architecture), Integrated Designs Inc (energy modelling), RWDI (wind and snow study consulting)

Criteria:

- Inuit-led
- Indigenous Design/Architect (from Verne Reimer Architecture Inc.)
- Innovative Construction

Typology: Long-term care facility



Typical resident room, rendering, Verne Reimer Architecture Inc. and Blouin Orzes architectes.

Role of Community

The Kivalliq Region of Nunavut is in urgent need of long-term care (LTC) beds for individuals who require a higher level of care or who may be living with mid- to late-stage dementia. With 24 new LTC beds to address this shortage, the first LTC facility in Nunavut led by the Government of Nunavut offers various levels of assisted living rooted within cultural awareness, dignity and respect. It was required to reflect the culture, values, history, and traditions of the Nunavummiut, be a model for aging in place, and invoke a strong sense of pride. The resulting Y-shaped single-story facility is oriented on a north-south axis and is comprised of two residential wings linked by a spine of communal spaces. Safe, secure and accessible outdoor spaces provide opportunities to maintain contact with the land. The facility's location within Rankin Inlet allows elderly residents to remain in the centre of their community and be close to their families.

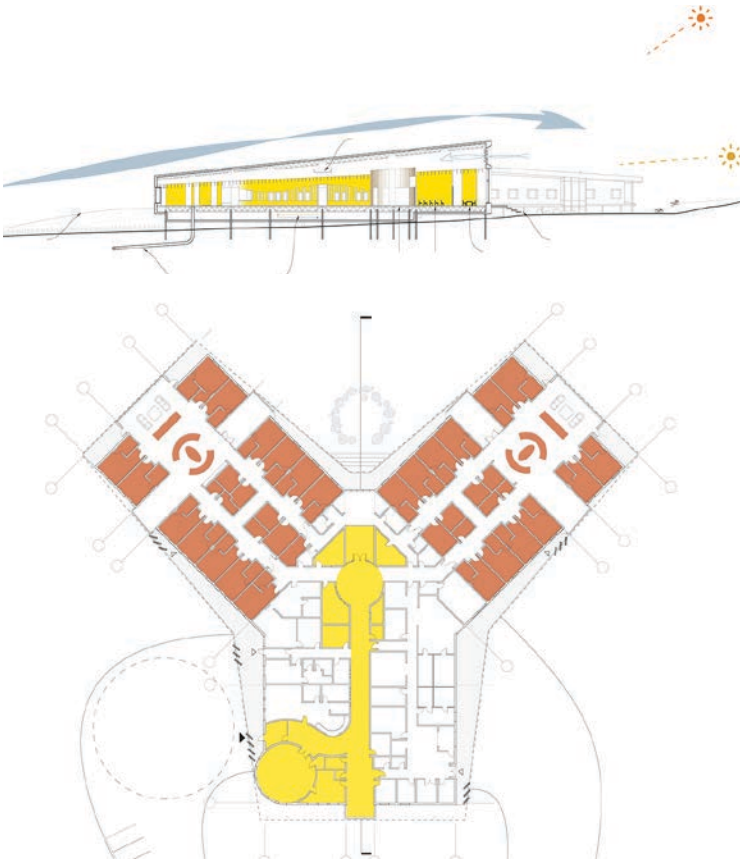
What is Innovative About it?

The facility's programming responds to the mandate for culturally appropriate care. Its central spine houses the administrative area and rooms for multipurpose activities, family, prayer, and exercise and rehabilitation. Connected to the central spine, each of the residential wings provides a country food kitchen and spaces for dining, living areas, laundry, bathing, and isolation. These wings can be self-contained in the event of an outbreak of infection. The heart of the facility is the Rotunda, a circular space that can host gatherings and traditional activities. The organization of these spaces and the building's overall form were developed with considerations for solar orientation, prevailing winds and snow accumulation, tested through scale model simulations. The main entrances are sheltered, and a south-facing outdoor courtyard generates a warmer microclimate protected from the prevailing north winds. The facility is a steel structure elevated on steel piles. Integral to its thermal performance, the enclosure design minimizes thermal bridges and maximizes natural daylighting, while heating is supplied through passive and mechanical strategies.

Construction + Technical Innovations

- Aerodynamic roof slope takes advantage of the south-facing exposure for daylighting
- Wind baffles and roof overhangs protect the entrances from harsh winds and snow
- Thermal bridges managed with fibreglass clip fasteners
- Heated crawl space within the floor assembly conceals plumbing conduits connected to the utilidor and public underground hamlet services

References: Blouin Orzes architectes, presentation, AIA Alaska State Virtual Conference, November 17, 2021.



Clockwise from top: Facility under construction, photograph; multipurpose room, rendering; country food kitchen, rendering; building plan; and building spine section, Verne Reimer Architecture Inc. and Blouin Orzes architectes.

GITXSAN CHILD & FAMILY SERVICES SOCIETY LONGHOUSE



Longhouse frontage, photograph, Lu'ma Development Management.

Location: Sik-e-Dakh (Glen Vowell), BC

Completed: 2023

Client: Gitxsan Child & Family Services Society (owned and operated)

Developer: Lu'ma Development Management

Project Leader: Barb Hudson (project rep.)

Project Architect: Patrick R. Stewart Architect

Project Contractor: Yellowridge Design Build Ltd.

Funding Contributor: BC Housing's *Building BC: Indigenous Housing Fund*

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Single parent + child housing, triplex, studio units



Longhouse opening, photograph, Gitxsan Child & Family Services Society.

Role of Nation & Community

Gitxsan society is matrilineal and organized through a hereditary Wilp (House) system, each with its own territory and hereditary Chiefs. Every Gitxsan child is born into a Wilp, rooted in a specific community. It is important for Gitxsan children to have access to their home communities, ensuring a familial connection to their Wilp and ancestral identity. Currently, there are more than 130 Gitxsan children living under the care of either Indigenous Services Canada or the Ministry of Child and Family Development (MCFC) and they typically do not have access to their home communities. Additionally, young adults who are aging out of the care system are at greater risk of becoming homeless and developing health issues associated with loss of familial identity and sense of belonging. The goal of the "Bringing Our Children Home" initiative is to change this reality. The Gitxsan Child & Family Services Society (GCFSS) strives to provide protective and preventive services that balance the traditions and culture of their people with the modern context that exists. The organization serves five communities and many other Gitxsan people living off reserve throughout BC and beyond.

What is Innovative About it?

This 15-unit, wood-framed longhouse seeks to address the significant number of Gitxsan children living away from their home communities in the care of Indigenous Services Canada or the Ministry of Child and Family Development, as well as youth aging out of the care system. The building includes three housing typologies under one roof with separate entrances and addresses. There are three 3-bedroom townhouses for single parents, and women and children fleeing violence, a 6-bedroom group home for children in care, and six independent living units supporting a youth mentorship model for young adults between 18 and 26. The support programs offered include life skills, cultural support, education, employment, safety and oversight, as well as culturally relevant care and services.

References: "15 New homes for women, children and young adults coming to Hazelton," CMHC, October 10, 2023, <https://www.cmhc-schl.gc.ca/media-newsroom/news-releases/2023/15-new-homes-women-children-young-adults-coming-hazelton>; "Gitxsan Child & Family Services Society Longhouse," Patrick R. Stewart Architect, <https://www.patrickrstewartarchitect.com/gitxsan-child-family-services-society-longhouse>; "Home," Gitxsan Child & Family Services Society, <https://gcfss.com/>; and "Our Projects," Lu'ma Development Management, <https://www.lumadevelopment.ca/projects>.



From top to bottom: Longhouse siting within the Sik-e-Dakh community, photograph; and longhouse frontage, photograph, Patrick R. Stewart Architect.

COLWOOD INDIGENOUS FAMILY HOUSING



Building frontage, photograph, Yellowridge Construction.

Role of Nation & Community

Initiated through a partnership between the province of British Columbia, the Aboriginal Land Trust Society (ALT), Lu'ma Native Housing Society, and the Huu-ay-aht First Nations, the Colwood Indigenous Family Housing development delivers 124 much-needed rental units providing affordability through a rent-geared-to-income model. This means that tenants pay no more than 30% of their gross household income toward rent. As Greater Victoria is home to BC's second largest urban Indigenous population, the project focuses on increasing the affordable housing supply for Indigenous residents. A smaller percentage of units are available for non-Indigenous families. Accounting for occupants at every age and stage of life, the unit mix includes 70 1-bedroom (six of which are accessible), 42 2-bedroom, and 12 3-bedroom apartments. This 6-story development additionally hosts a 2-story parking garage, large landscaped outdoor green space and patio, and an indoor amenity space.

What is Innovative About it?

The exterior design incorporates cultural and place-based elements through its use of heavy timber canopies, stone veneer, and Hardie siding. Through an artist procurement process, the building features artwork by Darlene Gait of the Esquimalt First Nation, as well as a totem pole carved by Edward Johnson, which was donated by the Huu-ay-aht First Nations.

Location: Colwood, Greater Victoria, BC (Esquimalt and Songhees Nation Traditional Territories)

Completed: 2021

Client: Aboriginal Land Trust Society

Partner: Huu-ay-aht First Nations (tenant selection assistance)

Project Architect: dHKarchitects

Project Contractor: Yellowridge Construction

Operator: Lu'ma Native Housing Society

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Affordable, multi-unit housing

References: Lu'ma Development Management, "Affordable Housing for Indigenous Families and Individuals," <https://www.lumadevelopment.ca/projects#:~:text=The%20Colwood%20Indigenous%20Family%20Housing,second%20largest%20urban%20Indigenous%20population>.

KAKATOOSOYIISTS (STAR LODGES)



Concrete 3D printed home with roof framing installed, photograph, Siksika Nation Tribal Administration.

Role of Nation & Community

Kakatoosoyiists (Star Lodges), located in Siksika Nation, delves into the role of Concrete 3D Printing (C3DP), also known as Contour Crafting, in the development of dignified, culturally appropriate Indigenous housing. Breaking ground in August 2023, it is the first C3DP housing initiative in Alberta and the largest in the country. Comprised of four buildings, the project delivered 16 1-bed 1-bath transitional homes aimed at providing temporary housing options to community members during emergency situations. These homes were designed under the guidance of Blackfoot Elders and Knowledge Keepers Eldon Weasel Child and Bren Little Light. The resulting design incorporates Blackfoot ideas and themes. For instance, its roof pays tribute to tipi poles and will be painted by community members. Kakatoosoyiists is being built in partnership with robotic construction company specializing in C3DP, nidus3D and a team from the University of Calgary School of Architecture.

What is Innovative About it?

The potential of Concrete 3D Printing is to streamline the construction process, enhance durability, reduce maintenance costs, and improve the energy performance of housing. The project aims to offer design flexibility, democratize the design and construction process, and address the longstanding housing crisis that has persistently affected Indigenous communities for generations. The large 3D printer used includes a 4-foot-tall robotic arm to build a group of fourplexes, where each unit is about 600 sq.ft. The print time to complete the exterior walls lasts about one week per building. The concrete structures help address the issue of mold present in many homes and will last longer. The exterior walls are printed on a concrete slab-on-grade foundation. This fairly conventional method of construction allows the Elders' cultural design inputs to be included in the homes, which many feel cannot be done with prefabricated homes. The printing technology provides a more sustainable approach to minimizing waste, reducing carbon emissions, and utilizing locally sourced materials.

References: Brendan Coulter, "Siksika Nation building 3D printed housing for members at risk of homelessness," <https://www.cbc.ca/news/canada/calgary/siksika-nation-building-3d-printed-housing-for-members-at-risk-of-homelessness-1.7015995>; "Largest 3DCP Housing Project in Canada," nidus3D, <https://nidus3d.com/largest-3dcp-housing-project-in-canada/>; "Kakatoosoyiists," Siksika Housing, <https://siksikanation.com/3d-concrete-printed-housing/>; and Ximena González, "A Transitional Housing Development is 3D Printed on an Alberta Reserve," Azure, July 8, 2024, <https://www.azuremagazine.com/article/siksika-nation-3d-printed-transitional-housing/>.

Location: Siksika Nation, AB

Completed: 2024

Client: Siksika Housing (Siksika Nation)

Siksika Elders: Eldon Weasel Child and Bren Little Light

Siksika Housing: Ryan Hall, Trevor Running Rabbit, Cody Wright, Gaylene Own Chief, Happy Grove, and Raven Black

Project Design Team: University of Calgary School of Architecture collaborators Prof. Mauricio Soto Rubio, Fauzan Mirza, and Mustafa Kagdi

3D Printing Construction: nidus3D

Additional Consultants: Remuda, MCW Hemisphere Ltd., Rocky Mountain Engineering, Rommens Construction, and Centra Windows

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Transitional, multi-unit

RIVERBEND AFFORDABLE HOUSING



Building frontage, photograph, Andrew Latreille.

Role of Nation & Community

The River Bend Affordable Housing project was initiated by the Ta'an Kwach'an Council, one of the First Nations upon whose Traditional Territory Whitehorse is situated. The business arm of the Ta'an Kwach'an Council, Da Daghay Development Corporation secured the property in a land swap with the Yukon government involving a parcel of titled, non-settlement land in Copper Ridge owned by the development corporation. Access to affordable housing for Ta'an Kwach'an citizens is a concern throughout the Traditional Territory. Meeting these needs in the safe and community-oriented Whistle Bend development, the five-building complex provides rent-geared-to-income units, meaning residents will only be expected to pay 25% of their total gross monthly household income towards rent. The remainder is met through subsidies from the Ta'an Kwach'an Council or Yukon Housing Corporation. Prioritizing capacity-building and invigorating the local economy, Ta'an Kwach'an citizens who expressed interest in joining the project were employed, regardless of their existing skillset.

What is Innovative About it?

The design was focused on creating an affordable and safe residential community with accessibility to transportation and recreational amenities while contributing to the diversity of the Whistle Bend Neighbourhood. Three 2-story buildings with a total of 42 units were constructed in Phase 1. 12 of these units are dedicated to the Ta'an Kwach'an Council, while the other 30 units are rented by residents previously on the social housing wait list. Phase 2 followed up with two additional buildings with a total of 28 units. Each building provides a variety of housing options ranging from 1-, 2-, and 3-bedroom apartments, each with their own in-suite laundry and storage as well as either an outdoor terrace or balcony area. The low scale buildings are oriented around a central park serving as a recreational area for residents with connections to multi-use trails and municipal recreational areas.

Construction + Technical Innovations

- Built to "supergreen" and high efficiency principle
- Use of roof PV panels

References: Jack Kobayashi (Kobayashi + Zedda Architects), email correspondence.

Location: Whitehorse, YT

Completed: 2017

Client: Da Daghay Development Corp. (Ta'an Kwach'an Council)

Project Architect: Kobayashi + Zedda Architects

Project Contractor: Evergreen Homes and Construction

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Multi-unit, affordable



From top to bottom: Buildings in the Whistle Bend development setting, photograph; and view of buildings from central park space, photograph, Andrew Latreille.

JËJE ZHO – MEN’S HOUSE



Building frontage, photograph, Taylor Architecture Group.

Role of Nation & Community

This project was pursued by the Tr’ondëk Hwëch’in to better provide emergency support and transitional housing for some of the community’s most vulnerable members. Expressing Tr’ondëk Hwëch’in culture and creating a healing environment were the two main priorities for the design of the Jëje Zho – Men’s House. Taylor Architecture Group’s (TAG) architectural and interior design teams worked closely with the client to refine the layout and finishes of the facility to meet the First Nation’s vision. The building is comprised of first stage transitional units and emergency shelter beds. It provides a total of 8 residential units with the capacity to host up to 11 beds. The building’s services are not exclusive to Tr’ondëk Hwëch’in citizens, but are open to adult male residents in Dawson City who are at risk of or experiencing homelessness (McIntyre, 2023). It provides a much-needed safe place to stay in instances such as returning from treatment or incarceration that supports the reintegration of residents back into the community.

What is Innovative About it?

The building’s design draws from Tr’ondëk Hwëch’in culture to create a welcoming and familiar environment for its residents. Its patchwork wood cladding references traditional shelters that were layered with fur pelts, while embodying the materiality of the surrounding landscape. A privacy screen, which wraps around the exterior gathering area and fire pit, is built out of stripped birch poles like those used traditionally in fishing traps and drying racks. Along the facades, metal artworks designed and fabricated by Tr’ondëk Hwëch’in are integrated and display culturally relevant imagery. Contributing to its supportive and healing oriented programming, the building includes a wellness room, intended for cultural purposes such as smudging. The project has had a lasting outcome on how Tr’ondëk Hwëch’in might develop buildings going forward. Early in its development, TAG designed the building to conform to Dawson City’s regulations to preserve its heritage values and the dominant Gold Rush-era vernacular. However, the firm later worked with the municipality to get a variance for Tr’ondëk Hwëch’in, allowing the First Nation to instead design projects to their own cultural vernacular. This has set a precedent, which will make it easier for the First Nation to develop buildings that celebrate Tr’ondëk Hwëch’in culture in the future.

Location: Dawson City, YK

Owner: Tr’ondëk Hwëch’in

Project Manager: Artemis Consulting

Project Architect: Taylor Architecture Group (TAG)

Project Contractor: Wildstone Construction Group

Additional Consultants: Bradley Engineering (structural), and TAG Engineering (mechanical and electrical)

Funding Contributor: CMHC

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Mens' shelter, transitional housing, healing



Tr’ondëk Hwëch’in metal artworks on façade, photograph, Taylor Architecture Group.

References: Chris MacIntyre, “Dawson City, Yukon, hosts grand opening of new men’s shelter,” CBC News, July 14, 2023, <https://www.cbc.ca/news/canada/north/tr-ond%C3%ABk-hw%C3%ABch-in-first-nation-new-mens-shelter-completed-1.6907264>; and Kristel Derkowski and Chloe Williams (Taylor Architecture Group), email correspondence.



Clockwise from top: Building under construction, photograph; building frontage, photograph; stripped birch privacy screen around gathering space, photograph; and interior common space, photograph, Taylor Architecture Group.

VICTORIA BLAKE MEMORIAL ELDERS HOME (VUNTUT GWITCHIN FIRST NATION ELDERS' COMPLEX)



Outdoor gathering space, photograph, Taylor Architecture Group.

Location: Old Crow, YK

Owner: Vuntut Gwitchin First Nation (VGFN)

Project Manager: Artemis Consulting

Project Architect: Taylor Architecture Group

Project Contractor: Wildstone Construction Group

Additional Consultants: McElhanney Consultants (structural), and TAG Engineering (mechanical and electrical)

Funding Contributors: Infrastructure Canada's Rural and Northern Infrastructure Stream (RNIS), Indigenous Services Canada, and the Government of the Vuntut Gwitchin First Nation

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typology: Seniors' independent housing



Perforated screen depicting the Porcupine River, photograph, Taylor Architecture Group.

Role of Nation & Community

Spearheaded by Vuntut Gwitchin community leaders, the Victoria Blake Memorial Elders Home is the first assisted-living facility for VGFN Elders in Old Crow, built in response to the lack of such homes in the community. In the development of the project, community groups met with Taylor Architecture Group (TAG) to discuss their hopes for the new facility. Community leaders worked with TAG to communicate their profoundly personal and emotional concerns about Elders aging in place. Feedback from the community was received throughout the design and construction process. The building was designed to provide comfortable independent living units where VGFN Elders can feel at home and age safely within their own community, while having access to local healthcare and amenities. It contains eight 1-bedroom assisted-living units for Elders and a 1-bedroom unit for a live-in caregiver. Communal spaces include a kitchen, laundry room, and a large indoor common area to be used as a Gwich'in language hub and for family gatherings, activities and crafts.

What is Innovative About it?

The space within each residential unit is defined by movable millwork cabinets, allowing them to be reconfigured depending upon the preference of the resident. From the corridor, each unit's personal display box and colour-coded door helps with their identification. The corridor itself fluctuates in width to accommodate seating and social interaction. Although each unit has its own kitchen, the circular communal area is equipped with a wood stove and space for food preparation and dining so that residents can gather to share meals. The regionally appropriate material selection includes natural wood interiors drawing from the antlers and hide of caribou, accented with bright colour like those used in traditional embroidery and other local crafts. Bright colours were requested by the Elders to de-institutionalize the feeling of the space. Perforated metal screens on the exterior walls, sunshades, and guardrails feature decorative patterns inspired by the ecology of the Porcupine River and Old Crow flats.

Construction + Technical Innovations

- In-floor heating used throughout the building
- Ventilation provided by a high efficiency dual core heat exchanger, rated at 89% heat recovery efficiency
- Mechanical systems and domestic hot water tanks were designed to be able to connect to future district energy systems in the community, eliminating their GHG emissions

References: Kristel Derkowski and Chloe Williams (Taylor Architecture Group), email correspondence.



Clockwise from top left: Unit entrance, photograph; facility siting within Old Crow, photograph; and seating area, photograph, Taylor Architecture Group; and perforated screen depicting caribou, photograph, Vuntut Gwitchin First Nation.

NUXALK ELDERS' VILLAGE



View towards gathering space, rendering, Mackin Architects Ltd.

Location: Bella Coola, BC

Client: Nuxalk Nation

Project Leader: Joseph Nash

Project Architect: Mackin Architects Ltd., Nancy Mackin (Mackin Architects Ltd., AIBC)

Design Team: Yang Yu (Intern Architect at Mackin Architects Ltd., AIBC)

Funding Contributors: Indigenous Services Canada, BC Housing, and CMHC

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Elders housing, affordable, multi-unit



Site plan, drawing, Mackin Architects Ltd.

Role of Nation & Community

The Nuxalk Nation has received support to implement their Elders' Village, which will serve as a family-centred multi-unit housing community that aims to honour and support Nuxalkmc Elders. The project gained traction through funding from Indigenous Services Canada, BC Housing and CMHC. The community's Elders participated in visioning as part of the design process. The project has also engaged with Nuxalk Nation's Administration and Health & Wellness Services. This new housing community will support residents with new and improved wrap-around health & wellness services. In harmony with these much-needed services, the design aims to deliver affordable homes that will allow Nuxalk Elders to be surrounded by extended family whilst complementing traditional Nuxalk design.

What is Innovative About it?

The project integrates Nuxalkmc culture and traditions into all its approaches to services, programming, housing typologies, and building expression. Working with Mackin Architects, the Nuxalk Nation has developed a modern interpretation of traditional Nuxalk building styles. Deviating from conventional Western conceptions of housing based on the nuclear family, the project offers intergenerational living centred around Nuxalkmc practices. This project will see the construction of 10 Elder units as well as 10 caregiver units within five separate complexes, united by a shared common gathering space. Flexible community spaces, Nuxalk art, culture, and natural landscape elements play essential roles in supporting this housing community vision.

References: Caitlin Thompson, "Nuxalk Nation receives funding for elders housing project," *Coast Mountain News*, February 20, 2020, <https://www.coastmountainnews.com/news/nation-receives-housing-funding-5652928>; and Ian Scholten, "Nuxalk Nation," *Ice Network*, <https://www.icenet.work/c/nuxalk-nation/>.



From top to bottom: Facade design, rendering; and outdoor shared landscape design, rendering, Mackin Architects Ltd.

THUNDER WOMAN LODGE



Building frontage, rendering, Smoke Architecture.

Location: Scarborough, ON

Client: Thunder Woman Healing Lodge Society

Project Leaders: Patti Pettigrew, and Eladia Smoke (previous)

Project Architects: mcCallumSather, and Smoke Architecture (previous)

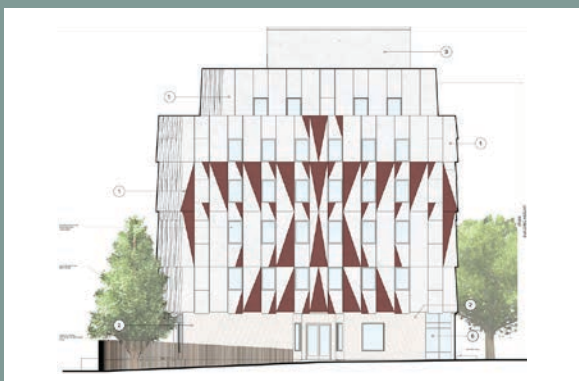
Project Contractor: Chandos Construction

Additional Consultants: Trophic Design, Element 5, ASPECT Structural Engineers, Hammerschlag & Joffe Inc, CivilGo Engineering Inc, Birnie Electric Limited, SvN

Criteria:

- Indigenous-led
- Indigenous Design/Architect (through Design Development stage only)
- Innovative Construction

Typologies: Transitional, multi-unit



Elevation, drawing, Smoke Architecture.

Role of Community

The 6-story, mixed-use Passive House complex located in Toronto will offer safe housing, counselling, and wrap-around support for First Nations (Status and Non-Status), Inuit, and Métis 2SLGBTQIA+ women transitioning from a corrections facility to the community. Indigenous women moving away from incarceration are on a distinct journey to develop their mental, emotional, physical, and spiritual connection. By providing community-based housing and culturally appropriate support services, it will address the root causes of Indigenous women's conflict with the law to support them on their journey out of the Canadian legal system and toward independence. The lodge will also be led by Indigenous women and is one of the first of its kind to be developed in Ontario. The program aims to provide 24/7 support and counselling for those exiting corrections or before the courts on bail. The program plans on supporting 12 women with a structured, daily program that includes trauma counselling, cultural teaching, and healing circles. Once the program is completed, they can transition into 12 additional temporary apartments in the building as they work towards gaining independence.

What is Innovative About it?

The 24-bed lodge will offer short-term housing and support services. Women residing in the lodge will experience a "Restoration of Identity" that will uplift and support them to reconnect with their spirit and provide a safe place to heal from the systemic atrocities of colonization. This will be accomplished by using Traditional Knowledge and teachings. The design includes mass timber and Net Zero elements that will be built in collaboration with Indigenous trades. The integrated fencing will feature art created by local Indigenous artists and integrate Indigenous procurement through the construction phase. In conversation with community Elders and members, the exterior form of the Thunderbird holds great meaning in healing and relations and was integrated with the interior circular and dome-like spaces reminiscent of traditional Anishinaabe architecture found in wigwams and roundhouses.

Construction + Technical Innovations

- Passive House construction for a Net Zero Ready build and sustainability targets
- Geothermal ground source heat pump
- 33% of the units are accessible and all common areas are barrier-free

References: Ian Scholten, "Thunder Woman Healing Lodge," ICE Network, <https://www.icenet.work/c/thunder-woman-healing-lodge-society/>; Urban Toronto, "Thunder Woman Healing Lodge," <https://urbantoronto.ca/database/projects/thunder-woman-healing-lodge.44240>.



Approach to the building from the street, rendering, Smoke Architecture.

BUNIBONIBEE CREE NATION HOUSING



Building exterior, rendering, Smoke Architecture.

Location: Bunibonibee Cree Nation, MB

Stage of Completion: 2020 (feasibility)

Client: Bunibonibee Cree Nation, National Research Council of Canada's Path to Health Homes Program

Project Leader: Eladia Smoke

Project Architect: Smoke Architecture

Additional Consultants: HTFC Planning & Design, and Triodetic Multipoint Foundations

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Multi-generational



Elevation, drawing, Smoke Architecture.

Role of Nation & Community

Through discussion with the Bunibonibee Cree Nation, key elements of the community's vision for their housing emerged, including the importance of maintenance, protecting building materials before assembly, land use planning, and neighbourhood planning principles. Typical housing delivery comes in the form of house packages procured from local wholesale building suppliers. The suppliers decide what is most feasible and often provide informal, incomplete designs and specifications to suit their material packages. Professionally produced drawings would support high-quality materials and achieve technically sound building envelopes. Two separate site visits were held with community members, youth, builders, and band councillors. While visiting in community and holding engagement sessions, certain typologies surfaced as the most needed through community-based feedback, leading to a multi-generational typology being designed.

What is Innovative About it?

A prototypical design for a 2.5-story, 9-bedroom multi-family home in Bunibonibee Cree Nation responds to the nature of families and the ever-growing need for housing specific to the community. This extended family household model utilizes a similar footprint, scale, material palette, and construction approaches that the local construction teams are currently accustomed to. A single housing prototype cannot address community growth patterns or accommodate a variety of household types. However, this design addresses the critical needs of an emergency-level housing deficit in Bunibonibee Cree Nation. It is important to note that the design is not an ideal solution, which would require a wider scope of inquiry and account for the larger context of community building and available resources. Form, size, and materials were determined with local labour and shipping limitations in mind. The design is an example of a housing system for a remote First Nation community in Canada that is inspired by cultural tectonics, history, and materiality, takes into consideration how the community will benefit in a multitude of ways, and that directly responds to a series of community engagement visits.

Construction + Technical Innovations

- Recommend a multipoint/ space frame foundation due to soil conditions and muskeg, minimal maintenance, limited access in community to tools for foundation maintenance
- Use of the Mooney wall system as materials are familiar to local crews, and contributes to an airtight cavity wall system
- Cold roof system to prevent ice dammed eaves

References: Eladia Smoke, "Bunibonibee Cree Nation Housing," Smoke Architecture, <https://www.smokearchitecture.com/#/bunibonibee-cree-nation-housing/>; and Smoke Architecture, "Healthy Housing Culture and Context Report," for Bunibonibee Cree Nation.



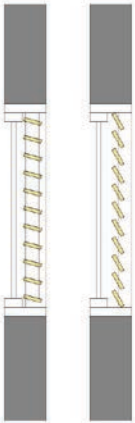
UPPER FLOOR



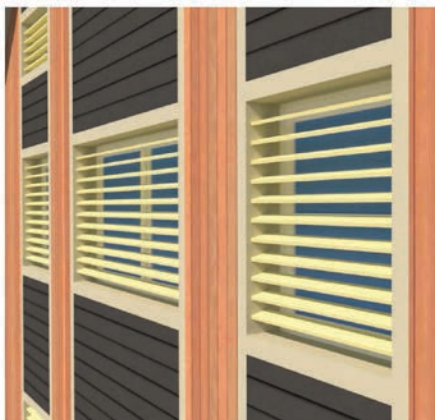
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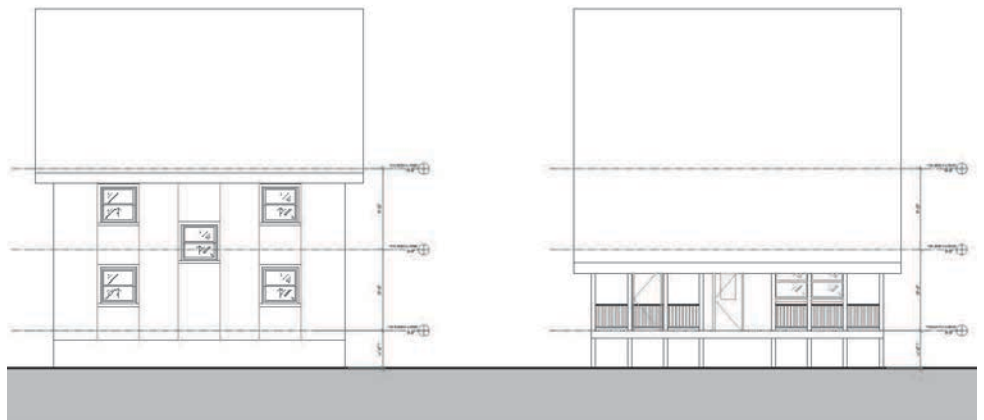
MAIN FLOOR



WOOD SLAT SCREENS OPEN + CLOSED POSITIONS



WINDOW PROTECTION OPTION - WOOD SLAT SCREENS



Clockwise from top: Floor plans, drawing; sections and elevations, drawing; wood slat screen on windows, rendering; and wood slat screen detail, drawing, Smoke Architecture.



2-story home option, rendering, Reimagine Architects.

Location: Lubicon Lake Band, AB

Client: Lubicon Lake Band #453

Project Architect: Reimagine Architects

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typology: Family homes

Role of Nation & Community

Defined through a series of workshops, the vision led by the Lubicon Lake Band seeks to create new housing to encourage the health and well-being of members, cultivating pride and engagement in the community. The plan includes 95 dwellings of varying shapes, layouts, and combinations. These multi-bedroom 1- and 2-story homes consider accessibility and aging-in-place with integrated ramps. The design sits lightly on the land, connecting deeply to the natural environment and the cultural context while acknowledging past conditions, and looking towards the future to energize the growth of the community. It offers safe, healthy, vibrant homes that are resilient and maintainable for future generations.

What is Innovative About it?

In considering the sun's orientation, the homes are oriented south for maximum solar gain and energy harvesting with solar panels situated on the roof. The east-west orientation will encourage passive heating during the long cold winters. The homes have been designed for people's comfort, by providing highly durable and easy-to-maintain materials and systems. Sourcing readily available materials, including local materials was important not only from a sustainability perspective, but to also express the local environment, forms, and colours that the community members relate to, making it feel more like home. In considering durability, metal roofing was originally selected for its low maintenance and longevity and to support the solar panels. The residents will have a decision-making ability in the design and construction that not often observed in the community. They are invited to work directly with the contractor to personalize their dwelling, through finish selection and the type of home that is most suitable to them and their families. The local economy will be supported by the project and community members are being hired to not only expand overall building knowledge but create a sense of pride and uplift self-resilience in building for their community.

Construction + Technical Innovations

- Use of solar harvesting, energy efficient
- Homes oriented based on the environmental conditions instead of typical urban layouts
- Customization option per resident preferences

References: Reimagine, "Lubicon Housing," <https://reimagine.ca/work/project/lubicon-lake-band-housing>.



From top to bottom: Single-story home option, rendering; and 2-story home option, rendering, Reimagine Architects.

LUBICON ELDER'S RESIDENCE



Healing garden, rendering, Reimagine Architects.

Role of Nation & Community

Guided by Lubicon Lake Band Elders, the Elder's Residence is a home that nourishes both the self and the collective. It engages all the senses and responds to the Elders' sensitivities to sound, light, colour, texture, movement, and depth perception. It considers the needs of the individual, including independence, dignity, privacy, aging-in-place, and facilitates connections to the larger community, and fosters oneness. The design integrates both the indoors and outdoors, allowing Elders to connect to the land from their very homes. Nestled in the boreal forest, the project celebrates the healing power of nature and looks out into the surrounding forest. When Elders gaze out the window, they will see flora of traditional significance, such as edible shrubs like the Saskatoon berry, and traditional medicinal plants.

What is Innovative About it?

The building design opens up to the south, allowing daylight to penetrate deep into the gathering space which is an optimal orientation based on the location of the Lubicon Lake Band. Daylight, which will spill into both gathering spaces and individual units, will bolster the well-being of Elders and allows them to orient themselves in relation to the sun. The building obstructs dominant winds from the north and protects the southern healing garden by having the building embrace it, further blocking winds from the west. The 8 units border the central common space with a public entrance leading to the healing garden. Within the common spaces, a dedicated shared kitchen, community kitchen, and dining spaces, washrooms, and multipurpose room intended for relaxing and crafting activities welcome residents to gather together. The dedicated ceremony space in the north allows for more private and personal ceremonies. Dedicated support spaces for staff and offices are included at the front by the main entrance, to greet visitors and assist Elders when needed.

Location: Lubicon Lake Band, AB

Stage of Completion: Feasibility study

Client: Lubicon Lake Band #453

Project Leaders: Carey van der Zalm, Garth Crump, and Vivian Manasc

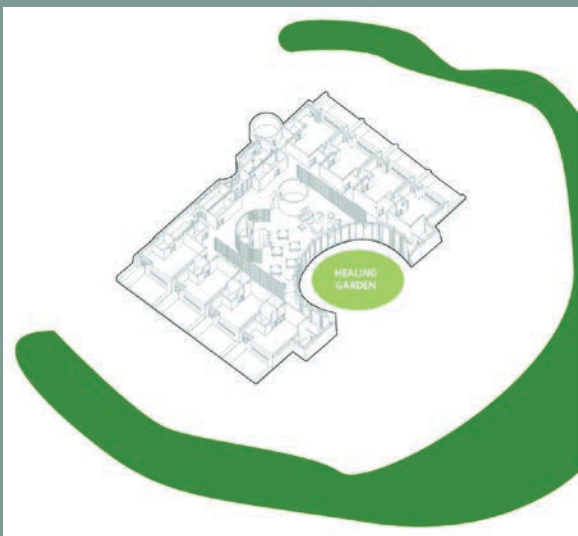
Project Architect: Reimagine Architects

Additional Consultants: Bosgoed Project Consultants, and Associated Engineering

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Elder housing, multi-unit



Conceptual diagram, Reimagine Architects.

References: Reimagine, "Lubicon Lake Band Elder's Residence," <https://reimagine.ca/work/project/lubicon-lake-band-elders%E2%80%99-residence>.

TSĚ LHTS'ĔNC'IL NEC'IGEKH BE YIKH (SPLIT ROCK HEALING HOUSE)



Healing House entry approach, rendering,
Taylor Architecture Group.

Location: Witset, BC

Client: Witset First Nation

Project Architect: Taylor Architecture Group

**Indigenous Design Process Facilitator and
Client Representative:** Regenerative Design

Construction Manager: Erik Olofsson
Construction

Landscape Architect: Matthew Thompson
Design

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Supportive, youth residence



Campfire gathering outside Healing House,
sketch, Matthew Thompson Design.

Role of Nation & Community

Tsë lhts'ënc'il nec'igekh be yikh offers six beds and five family cabins to support First Nations youth, ages 12-29 seeking support with mental health, addictions, trauma, PTSD, FASD, and other challenges that often stem from trauma and disconnection. It aims to help youth heal by reconnecting them with their families, community, culture and the land – bringing youth back home, where healing truly begins. A place for youth to grow, become independent, and feel connected and whole while learning important life skills, this healing house brings youth back to the home fire – a reconnection with their heritage to find healing within our community. Tsë lhts'ënc'il nec'igekh be yikh also serves as a means of community capacity development through training and hiring of local community members, Elders and knowledge keepers. The program's approach was co-developed with Indigenous youth from across Northern BC and the Witset Steering Committee, and continues to be led by Witset youth and community to ensure cultural humility and develop ownership of the process and project outcome. As the project is situated on the territory stewarded by the House on a Flat Rock (Tsee K'al K'e Yex) of the Laksilyu (Small Frog) Clan, Elders and members of this House are continually engaged to ensure that the Healing House respects protocol and operates in a good way.

What is Innovative About it?

Tsë lhts'ënc'il nec'igekh be yikh provides a culturally safe space that aims to improve youth's overall well-being and understands that youth are interconnected with all of their relations. This includes family, community, nature, culture, and spirituality. Through age-tailored programming centred on Indigenous teachings, youth will have access to professional trauma-informed counsellors, youth workers, Elders and knowledge keepers. Youth reside in the Healing House for three months at a time, however programming will continue as youth return to their home environments for one month following. Further transition support is offered both before entering and after the program. Healing through connection to the land is also embodied in the design of the Healing House and landscape. Reminiscent of Wet'suwet'en traditional pit houses, the Healing House will be nestled into the hillside, allowing access from the hill onto the green roof. In keeping with the community's commitment to environmental stewardship, the building is designed to meet the Passive House standard of energy efficiency and will utilize low embodied carbon materials wherever possible. The building is also designed to be fully accessible, which allows it to cater to as many individuals as possible, from those with physical disabilities and sensory challenges to visiting Elders.

References: Alanna Quock (Regenerative Design), email correspondence.



Clockwise from top: Building exterior, rendering, Taylor Architecture Group; north and south landscape concept, sketch, Matthew Thompson Design; classroom, rendering; and kitchen space, rendering, Taylor Architecture Group.

MÎNAWÂCIHIWEWI- NE-WÎKIWNAN (HEALING OUR HOME) MOOSE CREE HOUSING PROTOTYPE



Exterior rendering, Bohdana Innes, JLR.

Location: Moose Cree First Nation, Moose Factory, ON

Client: Moose Cree First Nation (MCFN)

Project Leader: Bohdana Innes (Intern Architect at J.L. Richards & Associates Limited, Moose Cree)

Community Leader: Ethan Turner (Director of Housing for MCFN, Moose Cree)

Project Architect: Maxine Blais (J.L. Richards & Associates Limited)

Project Contractor: TBD – Indigenous

Partners/Consultants: Moose Cree First Nation and J.L. Richards & Associates Limited (JLR)

Additional Consultants: Cambium Indigenous Professional Services

Funding Contributors: CMHC

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Multi-generational, affordable

Role of Nation & Community

Bohdana Innes and Ethan Turner have been working together for over four years on developing a new housing prototype for Moose Cree First Nation (MCFN). The project applies traditional methodology and cultural teachings to revitalize MCFN's housing solutions for future generations. The "Moose Cree Housing Design Prototype" received support and funding from Canada Mortgage and Housing Corporation and the Housing Supply Challenge Building for the Future Round, which supports innovative solutions that remove barriers to increasing housing supply in Canada. The project had three stages under the CMHC funding: Stage 1 – Initial application, Stage 2 – Feasibility study, and Stage 3 – Implementation. Bohdana completed two community engagement sessions during her thesis and post-thesis. Throughout Stage 2 an advisory board was established with community members and Indigenous technical consultants that have building and housing experience in the Mushkeogwuk area. Based on community engagement and the advisory board, the design of the home is centred around MCFN's traditional lifestyle and environment. The design creates a comfortable, affordable, climate-compatible, and culturally appropriate home, that will accommodate multi-generational living.

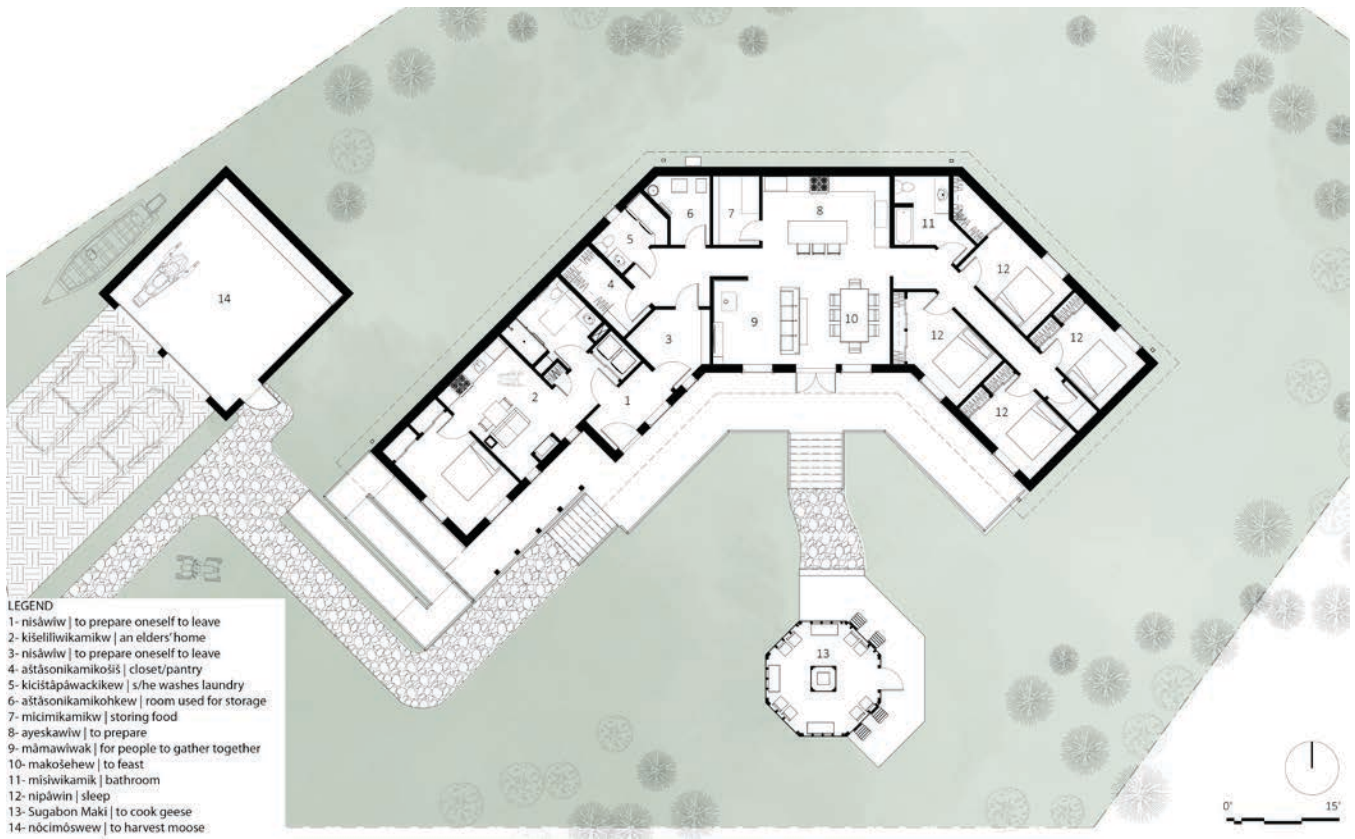
What is Innovative About it?

The Moose Cree Housing Prototype is designed with First Nations-led solutions reflecting cultural values and traditional way of life. Issues in the existing homes in MCFN include water infiltration, integrity of foundations and mold resulting from ventilation and maintenance problems, building envelope issues, and overcrowding. To be built as a prototype in MCFN, the house will define a new standard for the community and test better building solutions in anticipation of a future large housing development.

Construction + Technical Innovations

- The house will be raised on a screw pile system, eliminating basements and crawl spaces
- The building envelope will consist of high-performance stick-framed wood assemblies
- The house will be designed to Net Zero Energy standards, including PV and passive design solutions to reduce heating and cooling costs and environmental impact

References: Bohdana Innes (JLR), email correspondence.



From top to bottom: Building plan; interior renderings; and exterior rendering, Bohdana Innes, JLR.

INDIGENOUS HOUSING AND HEALING CENTRE



Building frontage, rendering, Urban Arts Architecture.

Role of Nations & Community

The Indigenous Housing and Healing Centre is the outcome of an Indigenous-led design process guided by Elders and Knowledge Keepers from the Musqueam, Squamish, and Tsleil-Waututh host Nations, which is set to merge housing and healing in a way that honours Indigenous culture. It will house vulnerable populations in Vancouver's Downtown Eastside and establish a welcoming, safe, and inclusive environment for healing. Addressing a unique mix of urban Indigenous housing needs, it will offer of both permanent homes for Indigenous families inclusive of affordability and supported housing in self-contained units for adults. The multi-unit building is comprised of 85 shelter bed support services, 25 units of transitional housing, 80 non-market rental apartments accounting for larger families, and 65 market rental homes. Health and traditional healing practices will be supported by a 32,000 sq.ft Healing Centre that includes a sweat lodge. Adding to the rich sense of community, the design incorporates culturally appropriate gathering spaces for ceremony, celebration, education, meetings, and a Food Centre with a commercial kitchen and dining hall.

What is Innovative About it?

The design aims to share a compelling narrative and establish a First Nations presence in the downtown through its programming, materiality, and expression. Its innovative healing focused programming will operate under a holistic understanding of wellness covering its spiritual, emotional, physical, and mental aspects, and the two-eyed seeing approach that embraces both Indigenous and Western medicine. Rooftops are harnessed to create lively outdoor spaces that support healing, as well as gathering and play. Its façade will present a culturally relevant visual of a Coast Salish Blanket, called Esemkwu, wrapping around a longhouse. Being in an urban site, the design has had to negotiate the preexisting building on site and its structural connections with an adjacent property. With consideration for sustainability, it strives to meet the targets of Net Zero Carbon and Step Code 4.

Location: Vancouver, BC

Stage of Completion: Ongoing – completion expected in 2025

Client: Aboriginal Land Trust Society

Project Leader: Kent Patenaude

Project Architect: Urban Arts Architecture (Ouri Scott, Architect at Urban Arts Architecture, Tlicho Dene)

Project Contractor: ITC Group

Operators: Lu'ma Native Housing Society, Vancouver Aboriginal Health Society, and RainCity Housing and Support Society

Engagement: Ideaspace Consulting Inc.

Funding Contributors: BC Housing, CMHC, Indigenous Services Canada, and the City of Vancouver

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Supportive, transitional, affordable, mixed-use

References: "Our Projects," Lu'ma Development Management, <https://www.lumadevelopment.ca/projects>; and "Aboriginal Land Trust Housing + Healing Centre Development," Urban Arts Architecture, <https://www.urban-arts.ca/aboriginal-land-trust-housing-healing-centre-development-1>.



Clockwise from top: Building frontage and entrance, rendering; roof activation, diagram; and Coast Salish Esemkwu, photograph, Urban Arts Architecture.



ENERGY EFFICIENCY AND SYSTEMS



Considers sustainability in building construction and performance.

ABEGWEIT FIRST NATION – SCOTCHFORT RESERVE



Grand opening of the homes, photograph, Abegweit First Nation.

Location: Abegweit First Nation – Scotchfort Reserve, PEI

Completed: May 23, 2024

Client: Abegweit First Nation

Project Leaders: Chris Jadis and Olive Crane

Project Architect: SableARC Studios

Project Contractor: Community construction crew (part of accreditation in the construction trade)

Additional Consultants: coSolved Consulting, and Bay Winds Engineering Consultants

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Single and family homes



Ground breaking ceremony, photograph, Abegweit First Nation.

Role of Nation & Community

Abegweit First Nation led the development of three new Passive Solar Homes designed to house young, inspiring women who have made significant contributions to the community. The units are designed to accommodate young single adults and three or four families. The new infrastructure marks a significant milestone in the commitment to implement innovative housing solutions and create greater capacity within the community. The project is driven by the community for the community. It has provided employment opportunities to the community, such as employing a community construction crew to support their pursuit of professional accreditation in the trade. In addition, the process for tendering involved an evaluation guide allotting points to consultants who had experience or connections with Indigenous communities. Abegweit First Nation also plans to develop a housing policy for the selection process to determine the residents of the new passive solar homes.

What is Innovative About it?

The design and construction methodology is innovative in its achievement of energy independence and efficiency. All three buildings will minimize energy costs and integrate energy-efficient systems. The building complex uses passive solar strategies to meet the intent of Canadian Passive House standards. Like many other Indigenous communities, there is a lack of meaningful full-time jobs for Abegweit First Nation members, as housing maintenance is typically contracted outside of the community. In this case with the call for proposals, the project team strongly applied for in-community housing solutions and building. Specific project management skills in construction for housing, and the ability to meet new people with different knowledge contribute to the ongoing expansion of working networks and future application of methods learned and experienced.

References: Courtney MacLeod (SableARC Studios), email correspondence; Olive Crane, "Passive Solar Grand Opening," ICE Network, May 27, 2024, <https://www.icenet.work/c/abegweit-first-nations/passive-solar-grand-opening>; and SableARC Studios, "Abegweit First Nation Project Renderings," ICE Network, October 24, 2022, <https://www.icenet.work/c/abegweit-first-nations/project-pictures>.



Clockwise from top: Abegweit First Nation homes, rendering; kitchen interior, rendering; home exterior, rendering; and bedroom interior, rendering, SableARC Studios.

COOK'S FERRY DUPLEXES



Exterior of one of the duplex units, photograph, Urban Arts Architecture.

Location: Cook's Ferry Indian Band, Merritt, BC (Nlaka'pamux Nation)

Completed: July 2018

Client: Cook's Ferry Indian Band

Project Architect: Urban Arts Architecture (Uri Scott, Architect at Urban Arts Architecture, Tlichó Dene)

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typology: Duplex



Groundbreaking with the Cook's Ferry Indian Band, photograph, Urban Arts Architecture.

Role of Nation & Community

The development of three duplexes by Cook's Ferry Indian Band introduced the first new housing in the community in the past 20 years. The vision and goals were developed with and involved the community from design through to construction, where they were directly involved in the building phase. Through community engagement and inclusion, the final decision was to create housing that supports families and helps to keep Elders in the community to maintain a close connection with their extended families by providing some wheelchair-accessible units. One key aspect included having space for gatherings, both for large gatherings and daily life, celebrations, feasts, and in honouring those who have passed.

What is Innovative About it?

The duplexes contain six units that offer a reflection of the community's cultural and societal values. The layout and accessibility of these dwellings integrate the values of family ties and aging in place with family support. Considering traditional cooking and preparation, they were designed with an open kitchen, ample counter and prep space, and large pantries for frozen, dried, and canned foods that are prepared seasonally. Exterior spaces include garden patios, recessed entry porches, and carports conducive to preparing game, carving, and repairs. The clustered arrangement of dwellings on a neighbourhood scale provides connections with neighbours and maintains views of the street. With respect for the land and the building lifespan in mind, environmental and sustainable strategies are incorporated, including energy efficiency through well-insulated building forms, maximum solar orientation with the agrarian site in mind, solar harvesting, and considering site-appropriate materials such as cementitious cladding and roofing to provide fire resistant exteriors, given the location's vulnerability to wildfire.

Construction + Technical Innovations

- Built using energy-efficient technologies and well-insulated building forms
- Utilizes passive design strategies
- Material selection accounting for fire resistance in responds to local wildfires

References: Urban Arts Architecture Inc, "Cooks Ferry Duplexes," <https://www.urban-arts.ca/housing#/cooks-ferry/>; and Urban Arts Architecture Inc, <https://www.urban-arts.ca/news/2017/6/8/cooks-ferry-duplexes>.



Three finished duplexes within the Cook's Ferry Indian Band community, photograph, Urban Arts Architecture.

SUSWIN VILLAGE



Aerial view, photograph, Designed Roofing.

Location: North Bay, ON

Completed: July 7, 2023

Client: North Bay Indigenous Friendship Centre

Project Leader: Kathy Fortin

Project Architect: LEA (Larocque Elder Architects)

Project Contractor: Praztek Construction General Contractors (Indigenous-owned GC)

Additional Consultants: SHS Consulting, A2S Consulting Engineers, DeLoyde Development Solutions, and Jain

Criteria:

- Indigenous-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Multi-unit, transitional



Living area, photograph, David Briggs, Bay Today.

Role of Community

Suswin (or 'Nest' in Ojibway) Village provides safe, accessible, and dignified housing for Indigenous community members in North Bay as they transition from emergency shelter living. It focuses on support for vulnerable populations and addressing the issues that brought them to homelessness. The project provides housing and contains individualized wrap-around support services grounded in culture, mental health, and addiction support offered on-site. These services focus on life and social skill building, as well as education and employment training necessary to finding permanent housing, employment, and overall long-term success in the community. The project's construction employed Indigenous sub-trades and workers. Ceremonies were held during key milestones, including during the groundbreaking, when the thermal well was drilled, and the building opening.

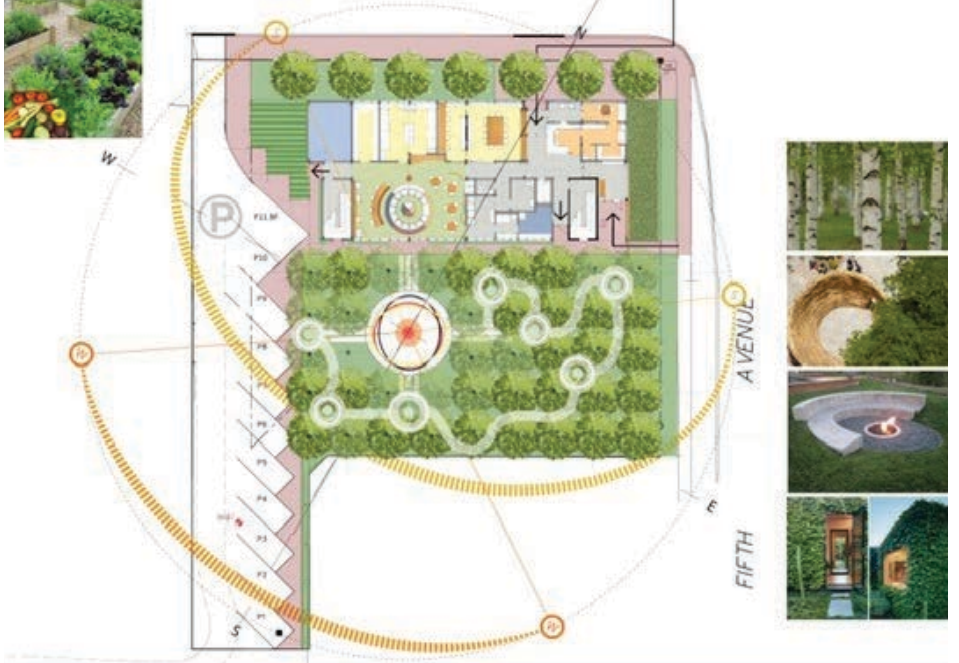
What is Innovative About it?

The 3-story, 30-single-unit transitional housing facility is located directly across from the North Bay Indigenous Friendship Centre, uniquely positioned to provide services and support close to residents. The main level combines administration, intake, programming, counselling, life skills teaching, and a gathering area with adequate ventilation for smudging. The living units contain a bed, washroom, and working station. The communal areas include a kitchen, support spaces, and indoor and outdoor gathering spaces. The outdoor gathering space houses a central fire with circular seating respecting the four directions. A standout feature of the building is its exceptional energy efficiency, through the seamless integration of sustainable elements in the design and construction process to minimize energy consumption and reduce environmental impact. The installation of a geothermal system utilizes 16 deep wells and ground heat controllers, efficiently heating and cooling the building, leading to substantial energy cost savings. In considering sustainability, all interior appliances and equipment are energy-efficient, reducing operational costs and contributing to energy-efficient operations.

Construction + Technical Innovations

- Geothermal heating and cooling
- Large south-facing windows for daylighting and passive solar heating into the units and ground floor common room
- Roof designed to accommodate future solar panels

References: David Briggs, "Suswin Village provides safe nest for North Bay's vulnerable," Baytoday, <https://www.baytoday.ca/local-news/suswin-village-provides-safe-nest-for-north-bays-vulnerable-7249189>; and "Environmental Obligations," Suswin Village, <https://www.suswinvillage.org/environmental-obligations/>.



Counterclockwise from top right: Outdoor schematic, diagram, LEA; fire pit area, photograph, David Briggs, *Bay Today*; and outdoor space, photograph, David Briggs, *Bay Today*.

HAISLA NATION MULTI-FAMILY HOUSING



Building exterior from outdoor space, photograph, Low Hammond Rowe Architect.

Location: Kitamaat Village, BC

Completed: 2022

Client: Haisla Nation Council

Project Leaders: M'akola Development Services (MDS), Sherry Smith (Haisla Nation Council), and Colin Light (Haisla Nation Council)

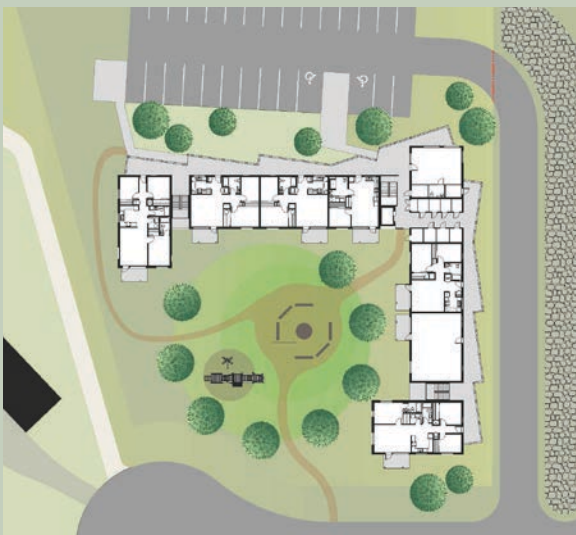
Project Architect: Low Hammond Rowe Architect

Project Contractor: Yellowridge Construction

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typology: Multi-family complex



Ground floor plan, drawing, Low Hammond Rowe Architect.

Role of Nation & Community

Driven by a desire to explore housing options for Haisla Nation members living on and off the Traditional Territory of Haisla Nation, a partnership was formed between M'akola Development Services (MDS) and Haisla Nation. This initiative involved collaboration with Haisla staff on community outreach and design. Through this process, MDS staff employed a multi-pronged community engagement and consultation approach, working closely with the Haisla Nation Council to reach members across the province of British Columbia through focus groups, surveys, and community forums. The result of this research and engagement is a new 23-unit, 3-story apartment building completed in 2022 on-reserve in Kitamaat Village and managed by M'akola Housing Society. This building introduces affordable housing to the residents of Kitamaat Village. It consists of 5 1-bedroom, 12 2-bedroom, and 6 3-bedroom apartments, as well as ground floor community space, and ample shared deck/outdoor spaces.

What is Innovative About it?

Although not officially certified, the apartment building is designed using a Passive House approach and has high-performance energy use. Considerations for phasing and expansion were incorporated in the design, which accommodates plans for a future development of a five-unit townhouse on site.

References: "Haisla Nation Multi-Family Housing," M'akola Development Services, <https://makoladevelopment.com/haisla-nation/>; and "Haisla Housing," Yellowridge Construction, <https://www.yellowridge.ca/copy-of-featured-project>.



Clockwise from top: Aerial view of building, photograph; screened shared decks, photograph; unit kitchen, photograph; and angled building façade, photograph, Low Hammond Rowe Architect.

FISHING LAKE MÉTIS NET ZERO READY TRIPLEX BRINGING IT HOME



Playroom, rendering, David T Fortin Architect.

Location: Fishing Lake Métis Settlement, AB

Client: Fishing Lake Métis Settlement,
Indigenous Clean Energy Social Enterprise

Project Leaders: Ian Scholten, Kyla
Morriseau, and Melissa McDonald

Project Architect: David T Fortin Architect

Additional Consultants: BTY Group
Inc., Solid Earth Geotechnical Inc., BAR
Engineering, and Airtight Engineering Inc.

Criteria:

- Métis-led
- Indigenous Design/Architect
- Innovative Construction

Typologies: Triplex, affordable housing



4-bedroom unit interior, rendering,
David T Fortin Architect.

Role of Community

The Bringing It Home initiative involved three communities across two provinces working towards transforming housing in the Fishing Lake Métis Settlement, Red Rock Indian Band, and Animbiigoo Zaagi'igan Anishinaabek. The collective goals include health, energy efficiency, Métis culturally appropriate and durable housing. Key outcomes include high-efficiency building standards, and training for construction, trades, and home occupants. Specific to the Fishing Lake Métis Settlement, the community design focuses on Net Zero Ready building. A large part of the success of the ongoing project has been community feedback even throughout the pandemic that included surveys, online engagement, and established loops of participation through all stages of design. Community members were involved in an intensive engagement strategy from the start to ensure all their needs were heard before the design commenced.

What is Innovative About it?

The triplex is designed to incorporate two family units and an Elder's suite all under one shared roof. The two family units bookend the Elder's unit, allowing the building occupants to take care of one another. The Elder occupants can care for the children and the families can assist the Elders. The unit was designed as a single level to better accommodate Elders on site and facilitate access between units. A driving factor in its innovation is the use of the Larsen truss system in the enclosure of the Triplex. To set new high-efficiency standards within the community and provide local support to the workforce and homeowners, the objective is to create sustainable energy-efficient homes that can be replicated.

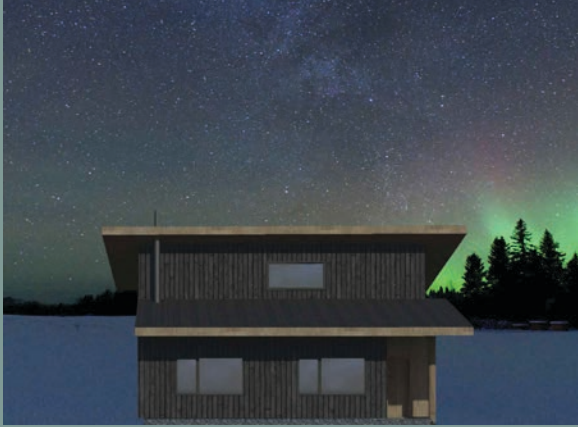
Construction + Technical Innovations

- Designed to meet Net Zero Ready requirements and consider solar harvesting practices
- Heat pumps and energy recovery ventilators (ERV) integrated

References: "Bringing It Home," ICE Network, <https://www.icenet.work/c/bringing-it-home/>; and "Fishing Lake Métis Net Zero Ready Triplex," David T Fortin Architect, <https://www.davidtfortinarchitect.com/fishing-lake-mtis-triplex>.



From top to bottom: Triplex exterior, rendering, David T Fortin Architect; and Elder's unit interior, renderings, David T Fortin Architect.



Home exterior, rendering, Kelly Edzerza-Bapty, Obsidian Architecture Ltd.

Location: Tat'ah IR 13 Reserve, Dease Lake, BC

Client: Tāhĥtān Band, National Research Council of Canada's Path to Health Homes Program

Project Leader: Kelly Edzerza-Bapty

Project Architect: Obsidian Architecture Ltd.

Additional Consultants: David T Fortin Architect (coordinator)

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Construction

Typology: Family home



Wildfire aftermath, photograph, Kelly Edzerza-Bapty, Obsidian Architecture Ltd.

Role of Nation & Community

Until recently and due to the forest fires, it had been nearly two decades since additional housing has been built as band assets on any of the Tāhĥtān Reserves. Current housing options on reserve are typical of the 1970s & 80s package and modular housing provided by Indian Affairs, which are far below the energy efficiency of even conventional housing standards, contributing to the high costs of heating. As identified in the community, there is also limited housing to address the needs of seniors and accessibility. As a Tāhĥtān member, Kelly visited and helped with community workshops and discussions while also taking note of existing housing conditions. Multiple workshops were held with different community populations – one including youth in both Telegraph Creek and Dease Lake schools. Based on what was learned, the Tat'ah Kime house has been designed based on the traditional double lean-to house and uses local timber in a similar fashion to establish a cultural language and design aesthetic. The project makes use of local knowledge for selective harvesting of trees to build out local housing stock.

What is Innovative About it?

Using a standardized timber framing system, the home is designed as a 24' wide frame set on a 12' grid, which offers a wide range of customization, freedom of window placement, and varied foundation options in a region where concrete is a limited resource. The S.M.L.XL designs are then built out at 12' x 24', 24' x 24', 36' x 24', and 48' x 24' floor plans, and can be easily expanded as families grow, or to accommodate generational living requirements. The project's ambition is to utilize local logs that have been milled to build high-value, energy and thermally efficient housing. Through this, funds can stay in the community and contribute to local capacity building, keeping knowledge in the community, and offering training in multiple construction fields. This work envisions utilizing forest fire salvaged timber and focusing community capacity into construction, building cultural model housing in a Tāhĥtān dialect of building that is specific to climate and use.

Construction + Technical Innovations

- Local log building and energy efficient housing to reduce carbon footprint and cost (currently 50%+ of the budget is spent on transportation of materials and specialized trades out of community)
- Considers geothermal as there are no utilities on reserve, but an existing source of ground water could integrate with a ground-sourced heating pump for primary heating
- Uses forest fire timber, which is salvageable for up to three years after a fire

References: Kelly Edzerza-Bapty (Obsidian Architecture Ltd.), email correspondence.

S | SMALL 16x24 UNIT
TWO STOREY
CENTRAL LIVING SPACE
PILE FOUNDATION

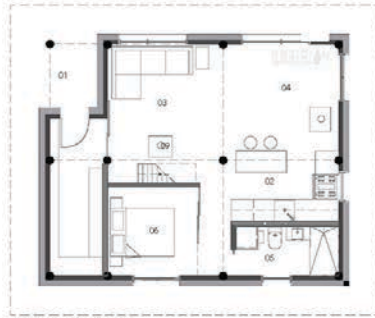


MAIN FLOOR PLAN | SMALL

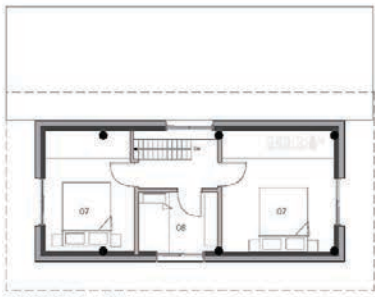


SECOND FLOOR PLAN | SMALL

M | MEDIUM 24x24 UNIT
TWO STOREY
TWO BEDROOM + DEN
ACCESSIBLE MAIN FLOOR
CRAWL SPACE



MAIN FLOOR PLAN | MEDIUM



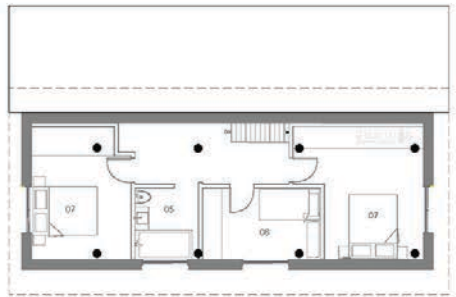
SECOND FLOOR PLAN | MEDIUM

L | LARGE 36x24 UNIT
TWO STOREY
BASEMENT OPTIONAL
FOUR BEDROOM + DEN
ACCESSIBLE MAIN FLOOR

01 ARTIC ENTRANCE
02 KITCHEN
03 LIVING AREA
04 DINING
05 BATHROOM
06 FLEX ROOM
07 BEDROOM
08 SMALL BEDROOM
09 WOOD STOVES



MAIN FLOOR PLAN | LARGE



SECOND FLOOR PLAN | LARGE



Clockwise from top: Floor plan options, drawing; home interior, rendering; home exterior, rendering; rear and side elevations, drawing; and section through the entry, rendering, Kelly Edzerza-Bapty, Obsidian Architecture Ltd.



INDIGENOUS URBAN DEVELOPMENT



Urban-scale development arising from a community's partial or full ownership of lands or Land Back approaches to regaining sovereignty over Traditional lands.



Location: Vancouver, BC

Client: Nch'kay West

Project Architect: Revery Architecture (Design Architect) and Kasian Architecture (Architect of Record)

Funding Contributor: CMHC

Criteria:

- First Nations-led
- Indigenous Design/Architect
- Innovative Development

Typologies: Mixed-use, affordable, multi-unit housing

Role of Nation & Community

The largest First Nations economic development project in Canadian history to date, the Skwxwú7mesh Úxwumixw (Squamish Nation) has entered a long-term 50-50 partnership with Westbank Corp to build 6,000 rental units in a mixed-use community development on the False Creek waterfront in Vancouver. The 10.5-acre site was formerly the site of Señákw (“the place inside the head of False Creek”), a significant village which served as a place for Indigenous trade, social connection, and cultural practices. Years of colonization dispossessed the Squamish Nation of the land; the bounds of the site today are the result of a landmark 2003 victory that reaffirmed the Nation’s ownership of the land. The development of this Indigenous-owned land by Skwxwú7mesh Úxwumixw received support through the largest loan from the Canada Mortgage and Housing Corporation in Canadian history. The development is independent of municipal zoning, allowing for more freedom to pursue greater density and innovative sustainable design. Approximately 1,200 of the 6,000 units will be offered at below-market rates. 250 affordable units will be set aside for Squamish Nation members, with the remainder serving residents of the City of Vancouver. The 250 designated Nation member units will be managed by Hiyam Housing, the not-for-profit housing arm of the Squamish Nation.

What is Innovative About it?

To be constructed over four phases, Señákw will be Canada’s first large-scale Net Zero operational carbon housing development. Aiming to be 100% GHG-free, its heating and cooling will be produced by a new 10MW district energy system fed by waste heat from Metro Vancouver’s adjacent sewer infrastructure. The project will feature mass timber construction, generating up to 50% less embodied carbon than typical concrete construction. Buildings will meet the Step 3 of the BC Energy code and will feature highly efficient envelopes to minimize both thermal and noise transmission. The units will include energy efficient appliances and fixtures to minimize water use, and the entire development is designed to reduce the residents’ dependence on the single occupant automobile. An extensive underground, centralized bike hub and dynamic pedestrian and cycling network will encourage alternative forms of transportation.

References: “Vision,” Senakw, <https://senakw.com/vision>; “Senakw,” Revery Architecture, <https://reveryarchitecture.com/projects/sen%CC%93a%E1%B8%B5w/>; and Squamish Nation, “Historic Partnership Between Skwxwú7mesh Úxwumixw and Canada to Create Nearly 3,000 Homes in Vancouver,” September 6, 2022, news release, <https://www.squamish.net/senakw-funding/>.



View of the Senakw development, rendering, Tandem Studios.



PHASE 1

RESIDENTIAL GFA: 959,334 +/-
 COMMERCIAL (RETAIL): 34,305 +/-
 COMMERCIAL (DE): 24,681 +/-
 TOTAL UNITS: 1,408 +/-

PHASE 4

RESIDENTIAL GFA: 829,895 +/-
 COMMERCIAL GFA: 10,792 +/-
 TOTAL UNITS: 1,502 +/-

PHASE 2

RESIDENTIAL GFA: 983,862 +/-
 COMMERCIAL (OFFICE): 44,496 +/-
 COMMERCIAL (RETAIL): 13,417 +/-
 TOTAL UNITS: 1,538 +/-

PHASE 3

RESIDENTIAL GFA: 1,072,909 +/-
 COMMERCIAL GFA: 45,889 +/-
 TOTAL UNITS: 1,597 +/-

ALL PHASES

6,045 RES. UNITS (+/-)
 (UNIT COUNTS)

3,846,000 SQ. FT. (+/-)
 (RESIDENTIAL AREA)

4,019,579 SQ. FT. (+/-)
 (RESIDENTIAL + COMMERCIAL AREA)

revery

From top to bottom: View of the development from the False Creek waterfront, rendering, Tandem Studios; and construction phasing, diagram, Revery Architecture.

SUMMARY AND DISCUSSION

This report has attempted to highlight many Indigenous-led housing projects that are trying to break down systemic barriers to safe, affordable, dignified and culturally appropriate housing for all Indigenous peoples across the lands now known as Canada. As noted earlier, however, this list is not comprehensive and there is much to learn about housing design and production from each First Nation, Inuit, and Métis community.

There has been significant progress towards self-determination in Indigenous housing over the previous decades as evidenced by the work included here. A return to considering the idea of catalogue housing for Indigenous communities is thus one that brings trepidation about returning to previous strategies that have ultimately failed communities from coast to coast to coast. It is critical to be mindful that the idea of 'catalogue' is most often associated with consumerism where commodities are bought by the masses in a way that reduces capital costs due to replication of production methods and limited 'choices', while maximizing profits for the producers (Sears Robuck houses as an early example).

Catalogue homes have played, and continue to play, a meaningful role in capitalist societies, often as an entry point into a housing continuum whereby families accumulate wealth and stability over many generations. Indigenous peoples have not historically been on that continuum as they were systematically excluded from it.

Certainly for housing on reserves, the greatest potential thus lies in community-led and community-produced solutions that will be inevitably more costly than cookie cutter homes in standard urban centres. But more importantly, this can and will have lasting benefits to the future of each community. Alienated homes designed for fictionalized narratives of what is needed, will further contribute to the disconnect many communities sense with their built environment.

It is therefore absolutely critical that the production of housing supports First Nation, Inuit, and Métis communities, not only in terms of economics and building capacity, but also culturally and spiritually. It simply cannot be treated as a supply-demand problem as this kind of thinking is applicable strictly for capitalist systems. Alternatively, and particularly for Northern and remote communities, serious consideration should be given towards strategies that use local materials, skills, and labour to build capacity and create homes appropriate for those landscapes, and that can meet the specific needs of their cultures. Where more urbanized locations seem more feasible for catalogue homes, it is essential that the design, manufacturing and production of housing is done by Indigenous peoples to their long-term benefit.

Strategic Questions

Future engagement process initiated by the CMHC involving Indigenous experts, housing providers and organizations in developing and disseminating Indigenous-led, standardized housing solutions should consider the following questions:

- a. What are ongoing setbacks of the current standardized design process?
- b. What do you see as potential drawbacks to disseminating Indigenous-led standardized designs? How do you think this process could be improved?
- c. How do you account for future repair needs and ongoing maintenance?
- d. What is your community's capacity for education and developing manufacturing facilities?
- e. How would your community approach financing new start-ups to design and/or build and/or supply?
- f. What locally available resources does your community have access to?
- g. What concerns would you have about housing being standardized or approached?

A Resilient Duplex for Fort Severn First Nation exterior, rendering, Two Row Architect and KPMB.



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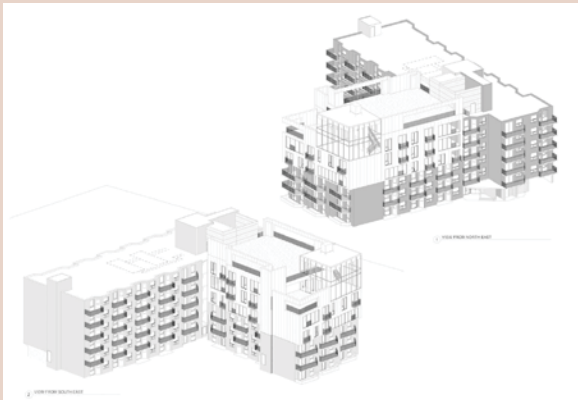
APPENDIX

INDIGENOUS-OWNED HOUSING PROVIDERS AND COMPANIES

Location: Toronto, ON

Services: Housing owner, developer, manager

Typologies: Affordable, family, single, seniors and Elders housing



From top to bottom: Wigwamen Terrace exterior, photograph, LGA Architectural Partners and Amanda Chong; Wigwamen Terrace addition, drawing, LGA Architectural Partners and Amanda Chong, Urban Toronto; and Great Spirit Manitou tapestry in the original Wigwamen Terrace building, photograph, Wigwamen.

Wigwamen Incorporated

Wigwamen is a non-profit and charitable organization which owns, develops, and manages housing units predominantly in the City of Toronto, and is considered the oldest and largest urban Indigenous housing provider in Ontario. The majority of members serving on the company's Board of Directors today identify as First Nation and Métis. Wigwamen strives to provide decent, safe, and affordable housing for Indigenous and non-Indigenous families, individuals, and seniors. Nearly all of its housing portfolio are rent-geared-to-income units, which receive funding from the CMHC and federal and provincial programs, resulting in tenants paying between 25-30% of their income for rent.

Sewells Road

Completed in 2005, Wigwamen's 4-story affordable and transitional housing project also known as "Wigwamen Waabnong" dedicates half of its units for Indigenous tenants; the remainder are rented by applicants from Toronto's social housing waiting list. The building's 92 units include a mix of single and family apartments. Ground floor units have their own patios. Fostering community for its tenants, the building additionally provides space for an office for the Aboriginal Housing Support Centre, a computer lab, a communal outdoor area, a weekly food bank, Healing Circle gatherings and other events.

Wigwamen Terrace

The 6-story Wigwamen Terrace was originally built by the organization in 1979 to provide 103 one-bedroom apartments for Indigenous seniors and Elders in Toronto. The building's common areas include a movie room, craft room, laundry room, and event space. Landscaped outdoor spaces provide residents with a private roof terrace and public courtyard. A 3-story expansion designed by LGA Architectural Partners was built in 2020, adding 24 rental units to the existing complex. This expansion includes a double-height community amenity room and an additional rooftop terrace.

References: "Board of Directors," Wigwamen, <https://www.wigwamen.com/about-us/board-of-directors/>; "Toronto Family & Seniors Housing," Wigwamen, <https://www.wigwamen.com/housing/toronto-family-seniors/>; "Wigwam to Wigwam, Volume 13.03," Wigwamen, newsletter, https://www.wigwamen.com/wp-content/uploads/2012/11/2012-06_Newsletter.pdf; "Wigwam to Wigwam, Volume 13.02," Wigwamen, newsletter, https://www.wigwamen.com/wp-content/uploads/2012/11/2012-04_Newsletter.pdf; and "Wigwam to Wigwam, Volume 20.01," Wigwamen, newsletter, <https://www.wigwamen.com/wp-content/uploads/2020/01/Wigwamen-Newsletter-2020-01.pdf>.

Location: Vancouver, BC

Company Leader: Rory Richards (Coast Salish (Shíshálh) heritage)

Service: Modular construction

Typologies: Supportive, multi-unit, mixed-use



From top to bottom: Prefabricated modular unit installation, photograph; Estítkw Place exterior, photograph; Eskekexwi7ch tkl'a Sp'akw'us Place interior, photograph; and Eskekexwi7ch tkl'a Sp'akw'us Place exterior, photograph, NUQO Modular.

NUQO Modular

NUQO Modular is a female-led and proudly Indigenous company specializing in modular construction with applications in Indigenous housing and mixed-use residential projects. Their services include project planning, building design assist including collaboration and support with Indigenous communities, permit navigation, and module manufacturing, shipping and installation. Though modularity has become a common way of building homes in Indigenous communities, the company focuses on quality, efficiency, and supporting community agency. With even the interior elements of the units arriving to site prefabricated, they emphasize its advantages of being fast, sustainable, reliable, capable of minimizing community disruption, and versatile in remote or challenging environments. Units are designed, built, and certified to meet Canadian CSA A277 standards. NUQO Modular has been named the Built Environment category winner in the 2024 BC Land Awards from the Real Estate Foundation of BC. The company's Capilano project has additionally won Excellence in Building Products and Technology at the HAVAN (Homebuilders Association of Vancouver) Awards for Housing Excellence.

Estítkw Place

Completed in 2023, Estítkw Place is intended to be a pillar of support in North Vancouver, offering safe and secure housing to members of the Sk̓wx̓wú7mesh (Squamish) Nation. This 4-story, 55-unit development comprised of one-bedroom and studio apartments is a supportive community managed by Sk̓wx̓wú7mesh non-profit organization Hiyám Housing. Residents receive meals and 24/7 staff assistance within an environment that honours cultural safety and decolonized care.

Eskékxwi7ch tkl'a Sp'akw'us Place

Eskékxwi7ch tkl'a Sp'akw'us Place, meaning "to the gathering place of eagles," is a secure and nurturing environment for Sk̓wx̓wú7mesh Nation women and their children. The 5-story building, designed by DIALOG Design and built in 2024, provides 27 affordable homes. Another project managed by Hiyám Housing, the development's focus on long-term safety and comfort means 29% of the apartments are affordable and 71% are fully adaptable. It has provided employment, training opportunities, and support for Sk̓wx̓wú7mesh Nation employees, suppliers, and businesses.

References: Arwen Brenneman (Nuqo Modular), email correspondence; "About NUQO," NUQO, <https://www.nuqo.ca/aboutnuqo>; Jennifer Thuncher, "ICYMI: A glimpse inside Squamish's latest affordable housing residence," *Squamish Chief*, April 10, 2024, <https://www.squamishchief.com/local-news/a-glimpse-inside-squamishs-latest-affordable-housing-residence-8576799>; "Modular Housing / Mixed-use," NUQO, <https://www.nuqo.ca/housingmixeduse>; and "Services," NUQO, <https://www.nuqo.ca/services>.

Location: Skeetchestn Indian Band Reserve, Savona, BC

Company Leaders: Mike Anderson and Jada Britton (Skeetchestn Band member, contractor)

Additional Consultants: Mark Fleischhaker (Metaphystations)

Services: Modular kit home design and manufacturing

Typologies: Single or optional multi-family configurations

Skeetchestn Dodeca-Homes

Skeetchestn Dodeca-Homes, a subsidiary company of Skeetchestn Natural Resources LLP. and a 100% Skeetchestn Indian Band owned business, will be offering kit homes for Indigenous people, by Indigenous people that are quick to assemble, replicable, and affordable. The kits are modular and based on a post and beam structure with options for units sized at 550, 1,020, and 1,450-sq. ft., which can be built alone or combined. Floorplan customization will be provided at an additional cost. Several kits have already been assembled at Skeetchestn Indian Band to serve as offices, but the company is working to introduce them into the housing market. This application would respond to housing shortages, multigenerational living preferences, and the need to keep Elders in the community and provide capacity-building and employment for community members. The product is currently being tested in several foundation and wall systems, which are expected to be complete in March 2025. The process of developing the kits has involved knowledge sharing with Indigenous owned construction and Band housing crews, training local youth, surveying, and engaging with other Band leaders.

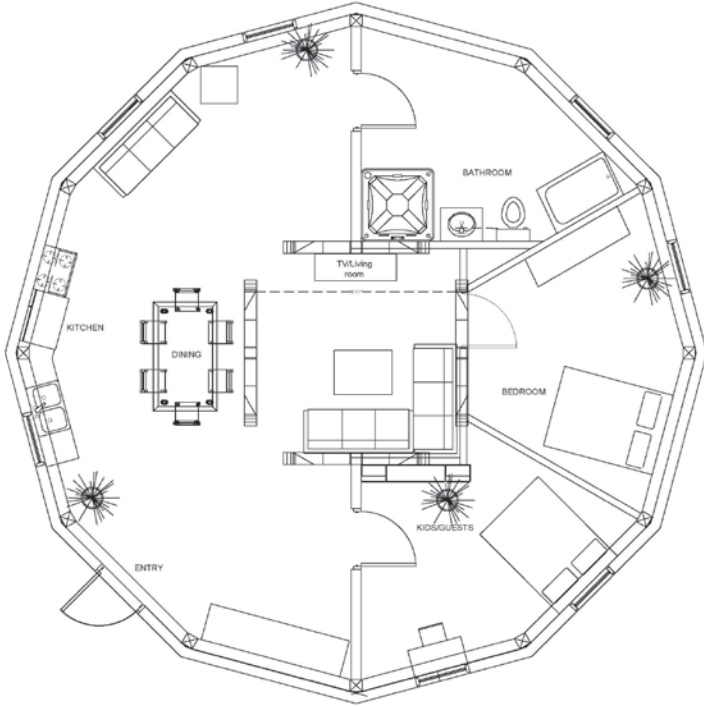
Kit Homes

The design is a nod to the round 12-sided traditional pit house dwelling of the Secwépemc First Nations. Supporting the local economy, the kits are manufactured within the Skeetchestn Indian Band. They include a pre-cut and pre-drilled timber frame, Structurally Insulated Panel (SIP) walls with true R25 insulation value, roof SIPs with true R40 insulation value, a door, up to 6 windows, metal roofing and a skylight. With distribution in mind, the kits are suitable for packaging and shipment to other communities anywhere in Canada with a B-train semi hauler. The housing units can be erected on a basement foundation and assembled to lockup within 15 to 20 days with a trained crew. Providing adaptability to housing needs, they can additionally be joined by breezeway to increase the floorspace. Skeetchestn Dodeca-Homes emphasize the product's energy efficiency and durability and are working towards certifying it for net-zero emissions.

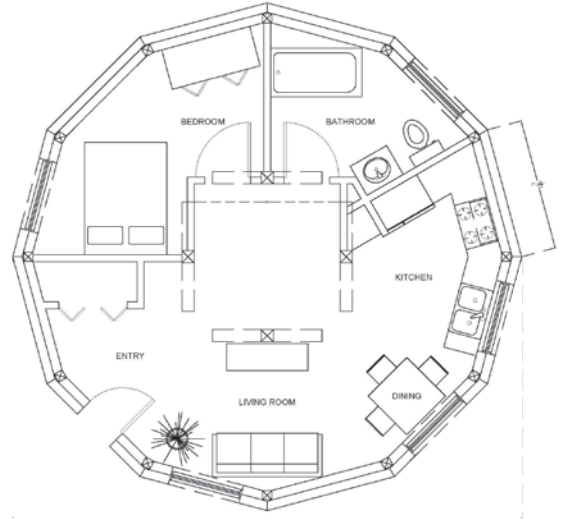


From top to bottom: 1020-sq.ft. show home built in Skeetchestn Indian Band, photograph; 1020-sq.ft. show home interior, photograph, Skeetchestn Dodeca-Homes.

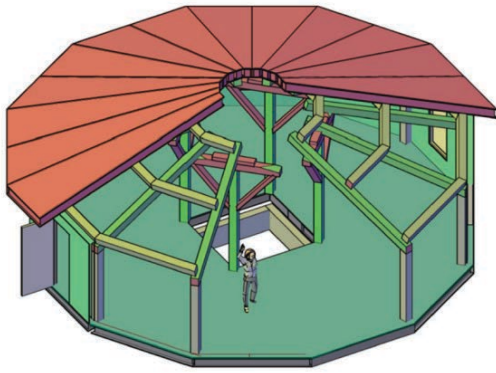
References: Jada Britton and Mike Anderson (Skeetchestn Dodeca-Homes), email correspondence.



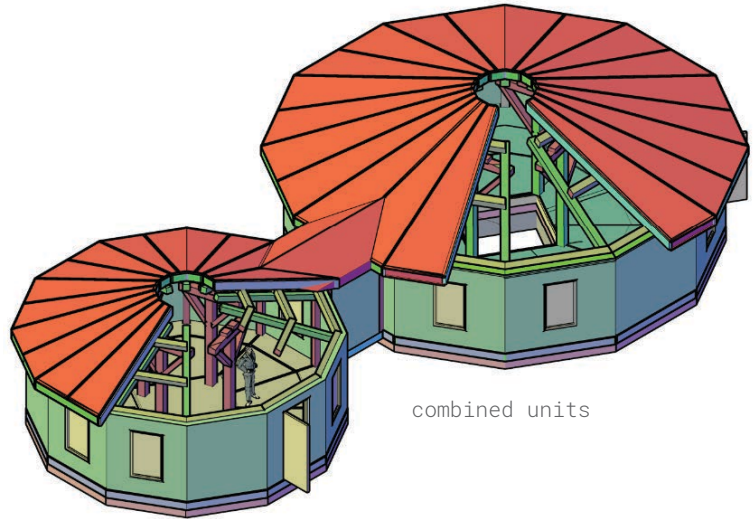
1020-sq.ft. unit



550-sq.ft. unit



stand alone unit



combined units

From top to bottom: Unit option plans, drawing; unit combination option, rendering, Sketchestn Dodeca-Homes.

Location: Kitchener, ON

Company Leaders: Kayla Meredith (Mohawks of Bay of Quinte member) and Gene Meredith

Services: Modular ADU construction and delivery, home renovation

Typologies: ADU



Minisi ADU exterior, rendering, Grand River Modular.

Grand River Modular

An Indigenous-owned home construction company, Grand River Modular is dedicated to transforming the way that homes are built through modular construction. Their mission is to rapidly produce high-quality modular housing solutions that can meet a wide range of needs and initiatives. The company strives to make sustainable and affordable housing accessible to all, shipping their homes across Canada and the USA. While the main focus of their work is modular construction with Accessory Dwelling Unit (ADU) applications, they also offer complete residential renovation services, commercial, and council projects.

Minisi

Grand River Modular offers a line of fully detached backyard dwellings that comply with ADU bylaw in Kitchener-Waterloo and Toronto. One of their main products is a 350 sq.ft tiny home ADU called the Minisi, which takes advantage of backyard space to provide a secondary dwelling with a bedroom, bathroom, living area, and kitchen. The Minisi can be a solution for expanding space, providing a guesthouse, office, or rental property, while supporting the resident's privacy and independence. These homes are designed to be stylish and functional and are able to be easily moved and transported.



From top to bottom: Section through Minisi ADU, rendering; Minisi kitchen and living space, rendering; Minisi bedroom, rendering; bathroom renovation, photograph, Grand River Modular.

References: "Grand River Modular," Grand River Modular, <https://grandrivermodular.com/>; "Minisi," Grand River Modular, <https://grandrivermodular.com/minisi/>; and "Renovations," Grand River Modular, <https://grandrivermodular.com/renovations/>.

Location: Chapleau, ON

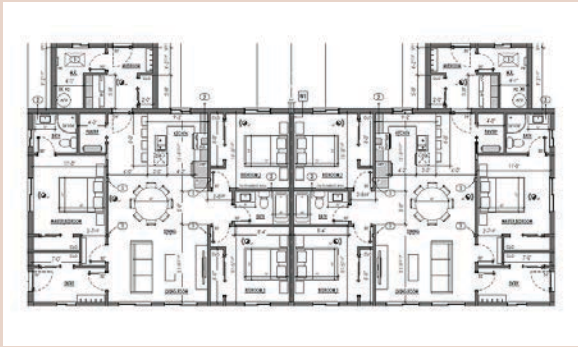
Services: Design and construction support, Boréal Homes distributor

One Bowl

One Bowl is a First Nations non-profit organization was formed by Chapleau Cree FN, Brunswick House FN, and Missanabie FN. Community members serve as active board members. Rather than imposing generic housing models, the company works with communities to prioritize designs that accommodate their needs independently and at scale. They are a distributor of Boréal Homes, a company specializing in modular housing using Thermolog construction techniques. Brinding together First Nations communities, Indigenous and non-indigenous entrepreneurs, and Strategic Partners, One Bowl endeavours to provide a housing supply chain that will stimulate economic participation, education & employment to create health and self-sufficiency within Northern Ontario First Nations communities.

Mushkegowuk Project

A design and delivery of 5 custom 3-bedroom duplexes to the First Nations communities of Fort Albany, Kashechewan, and Attawapiskat was completed in collaboration with Boréal (providing Thermolog technology and home design/layout), Mushkegowuk Council/Mushkegowuk Development Corp/Mushkegowuk Technical Services, and Great North Builders Supply. The project aims to provide culturally appropriate and safe housing that can withstand the harsh Northern climate through a super insulated enclosure. With shipping finalized at the end of March 2024, construction is set to begin on August 1st, 2024 and complete by December 2024. Each build will focus on utilizing local community capacity and businesses and also include a detailed 'train the trainer' program to increase local Indigenous engagement. The key benefit for the communities in this project is their ability to self supply outfitting and many other materials through their co-owned building center, thereby limiting economic leakage and ensure self sufficiency in their housing supply chain.



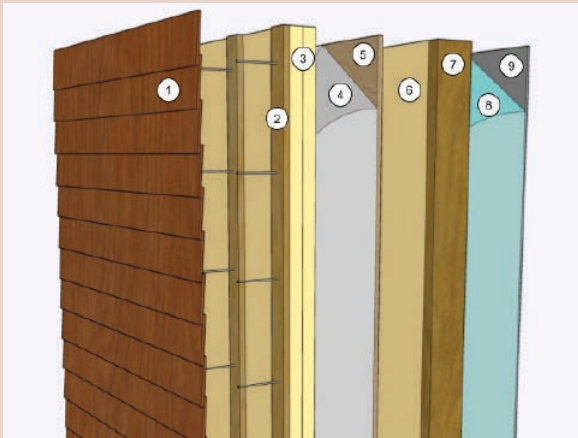
From top to bottom: Mushkegowuk Project duplex plan, drawing; Mushkegowuk Project delivery process, photograph, One Bowl.

References: Candace Larsen (One Bowl), email correspondence; "Mushkegowuk Project: One Bowl at Work with First Nations Housing," One Bowl, <https://www.onebowl.org/post/mushkegowuk-first-nations-housing>; and "One Bowl," One Bowl, <https://www.onebowl.org/>.

Location: Kettle Point Indian Reserve #44, ON

Company Leader: Trevor Trainor (Thessalon First Nation member)

Services: Building enclosure consulting, energy and sustainability services, building science research and education, forensic investigations



From top to bottom: Sanirajak community housing, photograph; split-insulated wall assembly, diagram; enclosure monitoring system installation at Sanirajak, photograph, Bawating Building Science.

Bawating Building Science (BBS)

Bawating Building Science (BBS) is an Indigenous-owned and Indigenous-focused building science consulting firm who provide consulting, research, and educational services to Indigenous communities, Indigenous non-profit and for-profit organizations, and government organizations to help them develop safe, healthy, durable and efficient housing. Trevor Trainor began the firm in 2021 with a decade's worth of experience as a building science consultant and passion for helping to address building science issues in Northern Indigenous communities. Moving forward, BBS is looking to developing an Indigenous building standard and an Indigenous green building training center. They aim to bring more Indigenous youth into the building science field, providing them with training, mentorship and experience.

Example Project #1 - Nunavut Housing Roof Remediation Study

BBS was hired by Dillon Consulting to assist in determining the most effective way to remediate deteriorating roofs in homes owned by the Nunavut Housing Corporation (NHC). The NHC is responsible for all publicly owned housing in Nunavut, yet a large percentage of its housing stock built over the past 20 years have issues related to moisture accumulation in their unvented roof systems leading to mould, rot, and the premature deterioration of this structure. BBS designed and performed a hygrothermal modeling study to evaluate the potential effectiveness of 6 different approaches. Based on its results, the team is pursuing two of these approaches through pilot testing. BBS has been responsible for designing, constructing and installing building enclosure real-time monitoring systems to assess the moisture performance of the two pilot units under Arctic conditions – the first beginning in 2022, followed by the second in 2024. This will inform the design of future roof remediation strategies and new designs.

Example Project #2 - Nishnawbe Aski Nation Building Enclosure Consulting

BBS is providing building enclosure consulting services for a multi-unit housing and community project with Nishnawbe Aski Nation (NAN), which is being designed by LGA Architects and L'Oeuf Architects. This work is supporting the teams' goal to design an enclosure that produces healthy, durable, and efficient buildings capable of performing in a number of different climate zones across the expanse of NAN territory in Ontario. Each of the architectural teams is taking a different approach to building enclosure design. As such, BBS has performed multiple rounds of hygrothermal models to evaluate the performance of these systems in different climate zones.

References: Trevor Trainor (Bawating Building Science), email correspondence.

Location: Peguis First Nation and Winnipeg, MB

Services: Civil engineering, architectural services, project management, community planning

Ayshkum Engineering Inc.

'Derived from the Michif word meaning "moving forward," Ayshkum Engineering Inc. (AEI) is a 100% Indigenous owned joint engineering and architecture company based out of Peguis First Nation, with a branch office located in Winnipeg. Their services, which include civil engineering, architectural design, project management, and community planning, are driven by an aim to improve the quality of life and standard of living for Indigenous people and their communities. They additionally offer consulting services to Indigenous communities, government agencies, Crown corporations, rural municipalities and the private sector. They have worked with Indigenous communities to realize single-family, multi-family, and Elder housing projects across planning, design, and construction stages.

Plishka Housing Project

AEI provided civil engineering design and architectural design services to Peguis First Nation in the development of their Plishka housing project. As part of this work, they conducted a Phase 1 Environmental Site Assessment, developed a class "C" estimate, and designed 11 stick-built homes and their foundations as well as site design including the roadway, drainage, landscaping, septic system, well location, and geothermal energy system.

References: "About Us," Ayshkum Engineering Inc., <http://ayshkum.ca/about-us/>; "Our Services," Ayshkum Engineering Inc., <http://ayshkum.ca/our-services/>; and "Plishka Housing Project," Ayshkum Engineering Inc., <http://ayshkum.ca/project/plishka-housing-project/>.

