



An Exploration of Approaches to Advance Culturally-Appropriate Housing in Canada

for Canada Mortgage & Housing Corporation
April 2019

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About This Report

This report was written by students in the Master of Community and Regional Planning course in partnership with Canada & Mortgage & Housing Corporation, for the Affordable Housing Policy & Planning course at the University of British Columbia. Canada Mortgage & Housing Corporation has provided support and guidance throughout the research process, but they do not necessarily endorse all aspects, conclusions, or recommendations contained in the report.

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Executive Summary

This project explores the notions of Culturally Appropriate Housing (CAH) in Canada and what can be done to guide its advancement with an emphasis on identifying obstacles for implementation. The report starts with a review of relevant conceptual and contextual background focusing on the historical development of CAH and common definitions.

The main body of the report consists of a matrix of measures and barriers for implementation identified through the analyses of local and international case studies. These measures, categorized in five different approaches, include:

Dwelling & Amenity Design, Construction Methods & Green Strategies, Delivery Process, and Supportive Services.

Covering every major aspect and phase of a typical housing project, the measures are assessed based on their jurisdiction and ease of implementation. Final recommendations will be generated based on these findings with the intention of informing CMHC and other housing agencies key considerations of implementing CAH at various scales.

Rather than focusing on the personal experiences of each identified demographic, we will examine the implications of the status quo and discuss potential changes that would emerge from considering cultural appropriateness of housing across Canada.

Introduction

Residential housing design can allow cultural identities to be created, maintained, and passed on across communities and generations. In addition to aesthetic values, cultural preferences inform housing. Both the housing exterior and interior play a role in shaping the extent to which families use the home. Other impacts of housing design and suitability include health and wellbeing outcomes, comfort, cost of living, activities and the extent to which they can be performed, including festivities, cooking, food storage, elderly care, childcare, community support, crafts, and language. Through this project, we aim to provide an understanding of the concept of Culturally Appropriate Housing as well as recommendations for the Canadian housing stock. This project will highlight institutional barriers and current assumptions about norms that shape housing developments, which ought to be challenged and reconsidered through regulations, policy tools and guidelines from different levels of government. The scope of this project includes guidance on levers different levels of governments can use to promote Culturally Appropriate Housing.

This report could yield the following benefits:

Benefits for Housing Occupants:

This report advocates for CAH, which can have positive outcomes in terms of equity, economic security, wellbeing and health, continuation of cultural traditions, and disaster resilience for ethnocultural minorities and Indigenous communities in Canada.

Benefits for Housing Providers:

This report creates terms of reference and guidelines for developing culturally-appropriate housing projects.

Benefits for Government Agencies:

This report includes recommendations for policy and regulation strategies to promote Culturally Appropriate Housing projects.

Research Questions

- 1 What are current accepted norms or assumptions around housing standards in Canada?
- 2 What are different ways the development of Culturally Appropriate Housing can be interpreted and what are the benefits for respective target communities?
- 3 Which policy tools can different levels of government apply to implement projects that lead to Culturally Appropriate outcomes?

Project Methodology

Method		Further Detail
	<p>Step 1 Develop a glossary of relevant terms</p>	<ul style="list-style-type: none"> ▪ Analysis of the cultural assumptions regarding housing in Canada through official definitions
	<p>Step 2 Scan local and international policy and design case studies</p>	<ul style="list-style-type: none"> ▪ Broad literature review on Culturally Appropriate Housing, including examples from countries including U.S., Canada, New Zealand, Peru, and the EU ▪ Local and international policy and design case studies, where cultural values over the built environment were a significant factor, were analyzed.
	<p>Step 3 Create broad approaches to understand culturally-appropriate housing actions</p>	<ul style="list-style-type: none"> ▪ Categorization of findings into four major approaches, including interior and amenity design, construction strategies and green features, delivery process, and supportive services.
	<p>Step 4 Refine case examples to highlight main approaches</p>	<ul style="list-style-type: none"> ▪ Selection of case examples from the international and Canadian context to showcase the four approaches to Culturally Appropriate Design in action. ▪ Systematic assessment of possible barriers to implementation and strategies to mitigate them.
	<p>Step 5 Outline recommendations for improving culturally-appropriate housing in Canada</p>	<ul style="list-style-type: none"> ▪ Recommendations included policy and design measures for government agencies and housing providers.

Shifting Values: Why we need Culturally-Appropriate Housing

The Canadian housing stock emerged out of a set of cultural assumptions, based on predetermined concepts of family life, relationships with the surrounding environment, and routines. One could describe the 'typical' Euro-Canadian housing as highly compartmentalized, prioritizing the private over public space. Floor plans reflect a preference for the 'scattering' of people, and different activities are granted specific locations within the home (Dawson 2006). In this way, Euro-Canadian housing exemplifies non-communal social norms and living patterns (Dawson 2006).

Today, various principles, practices, and regulations shape the Canadian housing stock, including unit and room occupancy and crowding standards, building materials and practices, unit layout, housing services, and engagement approaches that shape the housing design, construction, and delivery process.

The demographic landscape in both Canada and the U.S. has been rapidly changing (Masnick 2001). Housing trends for the 21st century should continue to respond to shifting demographics, restructuring of household needs, family composition, and racial and age composition. In light of the fact that new construction often does not reflect the housing needs of these changing households (Masnick 2001), housing providers and planners have shifted their attention to Culturally-Appropriate Housing.

Relevant Statistics about Demographic Changes in Canada

Housing may increasingly have to respond to the changes in values and preferences based on some of the following demographic changes.

16.1%

of Canada's total foreign-born population are recent immigrants

1.2 M

new immigrants in Canada between 2006 and 2016 came from Asia

44.2%

of on-reserve status Indians claimed their homes needed major repairs

26.6 K

refugees from Syria settled in Canada between 2006 and 2016

42.5%

increase in First Nation, Inuit, and Metis population from 2006-2016

32.1

was average age for Canada's Indigenous demographic in 2016

Demographic Changes: A Deeper Dive

I. Newcomers and Refugees

Census data from 2016 demonstrates that 16.1% of the total foreign-born population in Canada consists of recent immigrants who have arrived between 2011 and 2016 (Galloway, Bascaramurty, & Maki 2017). By 2036, immigrant children, defined as those born outside of Canada or having at least one foreign-born parent, could comprise nearly 50% of the resident population under 15 (Galloway, Bascaramurty, & Maki 2017). Around 1.2 million new immigrants between 2011 and 2016 came from Asia, with the majority arriving from the Philippines, while the other top countries of birth for new immigrants in 2016 were India, China, Iran, Pakistan, Syria, and South Korea (Galloway, Bascaramurty, & Maki 2017). Between 2011 and 2016, 26,550 refugees from Syria settled in Canada, followed by 15,505 from Iraq, 6,105 from Afghanistan, 5,125 from Eritrea, and 5,020 from the Democratic Republic of Congo (Galloway, Bascaramurty, & Maki 2017).

II. Multigenerational Households

Census data from 2016 shows that multigenerational households were the most common living arrangement for second generation immigrant children under 15, defined as being born in Canada with both parents foreign-born. Multigenerational living arrangements were seen to be more common among children with two foreign-born parents (18.2%) as opposed to just one (9.5%).

III. Indigenous Communities

There was considerable population growth among First Nations, Inuit, and Métis, with a 42.5% increase seen from 2006-2016 (Galloway, Bascaramurty, & Maki 2017). This population is also characterized by a younger age demographic. In 2016, the average age for this demographic was 32.1, almost ten years younger than the non-Indigenous demographic (Galloway, Bascaramurty, & Maki 2017). At the same time, the proportion of those over 65 among this population has also increased, contributing to around 4.8% of the population in 2006 and 7.3% in 2016. Indigenous children are also more likely than non-Indigenous children to live in two-parent households and more likely to live with grandparents due to cultural and financial reasons, such as insufficient housing and the benefits of sharing accommodation (Galloway, Bascaramurty, & Maki 2017).

The urban Aboriginal population in major metropolitan areas such as Metro Vancouver has also seen significant population increases (MVAEC 2015-2020). Housing concerns are a growing issue for the Indigenous demographic (Patrick 2014). 44.2% of on-reserve, status Indians claimed that their homes required significant repairs (Cite- Galloway, Bascaramurty, & Maki 2017). The same was seen for 31.5% of Inuit in Northern Canada. This issue was less common for off-reserve First Nations (14.2%) (Cite- Galloway, Bascaramurty, & Maki 2017). However, in the off-reserve context, and particularly in urban areas, other housing issues are faced, including housing discrimination and housing that is ill-suited culturally (Patrick 2014).

Implications of Culturally Appropriate Housing

Implications: Why is Culturally- Appropriate Housing important?

Research has shown that having a housing supply that insufficiently meets the needs of the diversifying population could lead to loss in cultural traditions and reduced community ties (Hadjiyanni, n.d.). This could result in detrimental physical, mental and emotional impacts of visible minorities (Hadjiyanni n.d.; Housing Counts, n.d.). By considering cultural sensitivity in the residential context, housing providers “can support or suppress the practices that define our cultural identities” (Hadjiyanni, n.d., p 2). Housing providers and municipalities also stand to benefit from flexible housing design that supports diverse activities by “[having] a greater appeal to a larger market share, [being] occupied for longer periods of time, and [minimizing] environmentally and financially costly innovations” (Hadjiyanni, n.d., p 2). Discussions around culturally-appropriate housing have also examined aspects of the ‘typical’ North American house and how it might suppress cultural groups’ identities.

Instead of focusing on particular needs of demographic groups at a given time, it is recommended to focus on the cultural aspects of distinct cultural groups that might be maintained beyond the modern era that could change, disappear, or be passed down (Hadjiyanni n.d.). In addition, design changes should be oriented towards the interior rather than just the exterior of a home to support cultural practices like religious ceremonies, social gatherings, and culinary activities (Hadjiyanni, n.d.). One recommendation has involved designing housing to be affordable and maintain resale value while meeting the demands of the ‘typical’ American customer. Discussions on culturally-appropriate housing revolve not just around housing design but also project delivery, regulations and policies such as occupancy standards, and other incentives (e.g., FSR).

What is Culturally- Appropriate Design?

In “Redefining architecture to accommodate cultural difference: designing for cultural sustainability”, Memmott and Keys (2015) refer to culturally-appropriate housing as ‘culturally sustainable architecture’. They define it as:

“a selected, arranged and constructed configuration of environmental properties, both natural and artificial, in and around one or more activity space or behavioural setting, combined with patterns of behavioural rules and meanings, as well as incorporating cultural constructs of space and time to result in human comfort and quality of lifestyle – all within a wider, large-scale system of cultural landscape and settlement.” (Memmott & Keys, 2015, p 286).

Culturally-appropriate design goes beyond cosmetic features such as murals or decoration, and encompasses particular ways of inhabiting private and common spaces informed by cultural factors. Such factors include family sizes or notions of private versus public space. Culturally-appropriate spaces improve the well-being of people. A dominant culture bias in assuming their ways to inhabit space is an obstacle for achieving culturally-appropriate housing. (Memmott & Keys, 2015).

Benefits of Culturally-Appropriate Housing



Encouraging continuation of cultural practices, such as cooking, communal meals, social or religious gatherings or festivities, etc.



Allowing comfortable occupation of housing by alternative (e.g., large, intergenerational) family structures.



Lower cost by reducing energy burdens, shortening supply chains and increasing economic security.



Increase sustainability and lower environmental impact of the home, including local sourcing of building materials, energy efficient layout, and technology.



Build resilience and increase adaptive design against context-specific climactic, meteorological, or biological factors and patterns.



Increase wellbeing, health, and sense of belonging.

Glossary of Terms

Architectural Programme:

Desired functional and spatial requirements to guide the design of a building. It is guided by the needs of the owners and target users, and is generally comprised of a list with the number, purpose and size of rooms, as well as the finishes, equipment, and any other characteristics that contribute to its functional purpose.

Supportive Services:

On-site supports for tenants with mental and physical health conditions, substance use and/or other challenges. The supports range from life-skills counselling towards independence, to primary health care, mental health or substance use recovery services.

Unit Mix:

On-site supports for tenants with mental and physical health conditions, substance use and/or other challenges. The supports range from life-skills counselling towards independence, to primary health care, mental health or substance use recovery services.

Household:

Canada defines household as “a person or group of persons who occupy the same dwelling and do not have a usual place of residence elsewhere in Canada or abroad. The household universe is divided into two sub-universes on the basis of whether the household is occupying a collective dwelling or a private dwelling. The latter is a private household” (Stats Canada, 2016).

Housing Suitability and Overcrowding:

The Canadian National Occupancy Standard (CNOS), developed by CMHC, defines housing suitability based on whether a dwelling has enough bedrooms for the size and composition of the household according to the following criteria:

- No more than 2 persons per bedroom
- Children less than 5 years of age of different sexes may share a bedroom
- Children less than 18 years of age and of the same sex may reasonably share a bedroom

Following this criteria, households that do without enough bedrooms are considered to experience overcrowding.

This metrics do not recognize the idiosyncrasy of certain cultural backgrounds. Different cultures have varying standards regarding how many people can live in one unit; taking into consideration multigenerational families. The current number considered “standard” adheres to the Euro-Canadian nuclear family structure (Brend, 2017).

Approaches

1. Dwelling & Amenity Design
2. Construction Methods & Green Strategies
3. Supportive Services
4. Delivery Process

1. Dwelling & Amenity Design

Designing with flexibility in mind means that housing accommodates the evolving preferences and needs of multiple cultural groups. Housing providers, city officials, and architects can work together to ensure that flexible housing design is implemented to increase the suitability of housing for all and ensure the health and wellbeing of our increasingly diverse society.

Cultural Preferences for Dwelling & Amenity Design: Hmong Americans' Experiences with Housing in Minnesota

Based on a research initiative conducted through the University of Minnesota, the interior design of the housing stock in the U.S. was found to limit the ability for Hmong-American households, an ethnocultural immigrant group with roots in China and Southeast Asia, to practice their religious and cultural traditions.

The compartmentalized layout of homes created wellbeing challenges for households as a result of not being able to host large events in their homes, particularly during the winter season. Closed off kitchens, small cooking spaces, small sized appliances, small kitchen sinks, and insufficient storage facilities prevented culinary activities from taking place for large gatherings. Some Hmong-American households experienced distress due to their inability to carry out particular religious rituals, such as setting up an altar close to the front door so that spirits of the deceased could find their way to the altar.

Hmong-Americans developed creative ways of coping with the limitations in the spatial configuration of these American homes. However, culturally-sensitive design changes have proven effective and can be applied to other ethnocultural households, particularly those that have intergenerational living arrangements and value communal living.

Examples of interior design changes include reconfiguring living rooms to be across from the front entry, having large, open-format kitchen, dining, and living space, providing larger sinks and storage units such as freezers and sheds, covered patios that can work as both outdoor cooking areas in summer months but useable in winter months as well, and a porch with space to leave shoes and coats. While some of these design interventions might be specific to addressing the concerns of the Hmong, overlaps can be seen with various Indigenous communities in Canada and extended immigrant families in various countries, including the U.S. and Canada.



2. Construction Methods and Strategies

Pairing efforts to design CAH with construction methods, materials and green strategies to increase environmental sustainability of buildings can have lasting effects such as comfort and wellbeing of dwellers, reduced environmental impact, and support for the local economy. Green strategies include considerations for ventilation, adaptation to climate and geotechnical conditions.

Green Technology and Sustainability Features: Clayoquot Forest Communities Program

The Clayoquot Forest Communities Program is a jointly managed program with Ecotrust Canada, and five Central Region Nuu-chah-nulth First Nations. This project seeks to support local values, economies, and skills through conservation and natural resource development. At the beginning of this project, five Nations identified the need for improved housing, and CFCP partnered with the UBC Sauder School of Business, and UBC School of Architecture and Landscape Architecture (SALA) to create the 'Green and Culturally Appropriate Building'.

Culturally appropriate design features supported the following criteria: first, encouragement of local labour and expertise as well as local material use, such as cedar planks, cedar logs, and stones. For example, design features suggested by Nuu-chah-nulth community members included the use of long continuous cedar planks as roofing material to consider the local climate. Second, water and energy conservation and reuse was promoted through the use of passive techniques for green design. Such techniques can increase energy efficiency and thermal comfort while requiring little reliance on technology, which can lower costs. Lastly, multi-use cultural spaces for evolving family needs was expressed through flexible models of the final housing prototype.

The purpose of the Green and Culturally Appropriate Building Design Project was to "re-examine how home building and design can be improved to incorporate local climate, cultures and resources" (Ecotrust, 2012). The resulting project yielded a model home design that could be personalized to suit tenant choices as a duplex or fourplex; which echoed the design of a longhouse. The next steps for the Green and Culturally Appropriate Building include monitoring of model home construction, post-occupancy monitoring programs, increased awareness of the project and its benefits to the region, promotion of multi-unit development and local design standards through policy, and the promotion of comprehensive community planning (Ecotrust, 2012).



3. Supportive Services

Supportive housing provides a range of on-site, non-clinical supports to tenants and can be incorporated through CAH developments. Service programs can be targeted toward low-income individuals and those who need assistance in order to live independently. There is also an opportunity to incorporate culturally-specific supports which require specific spatial and operational conditions.

“Soft Services” and Culturally Sensitive Design: Housing Programs and the Toronto Hong Fook Mental Health Association

Beyond physical design, housing service delivery and supports on site can be another avenue for tenants to engage in cultural practices and share them with current and future generations. The Hong Fook Mental Health Association, a multi-service mental health organization serving East and Southeast Asian communities throughout Toronto, targets people over the age of 16 who are at risk of homelessness and have experienced mental health concerns. Often these individuals face linguistic and cultural barriers, which affect their access to other mental health services.

Hong Fook partners with private landlords to run sixty units. As the lease holder, they pay rent to the landlord while tenants pay their portion of rent to Hong Fook. This housing model aims to build relationships with landlords, prioritizing tenant choice and autonomy. Hong Fook emphasizes familiarity with the tenants’ cultures and neighbourhoods while connecting tenants to family members to re-establish relationships. The housing provider also encourages clients to connect with one another through informal introductions as well as events. The tenants are connected with a case manager throughout their tenancy. Hong Fook prioritizes the importance of partnerships through their model. Having landlords, primary care and other service providers present

who understand the importance of family values in Asian cultures is essential.

A key goal of Hong Fook as a coordinator of “soft services” is to foster education about mental health, while acting as an intermediary for informal dispute resolution and family reunification.



4. Delivery Process

This approach can help achieve a more comprehensive and culturally-appropriate housing process through the involvement of target communities in the design process. This creates opportunities to obtain valuable local insight and create a sense of ownership and stewardship. Often overlooked aspects such as project terminology, cultural preferences, or past experiences with government entities can be identified with potentially great benefits.

Embedding Cultural Sensitivity into the Housing Delivery Process: Co-Design with the Nunavimmiut (Inuit) in Nunavik, Quebec

Co-design reflects a shift in traditional housing development and service delivery. It can help ensure that a housing project reflects the cultural values of future occupants. Rather than service providers designing for communities in a top-down manner, the co-design approach enables residents to become the 'experts' of their own experiences. The residents are central to the design of their living environments.

An example of how this participatory engagement is applied in practice, is the design of two-bedroom duplexes in Nunavik. The goal was to create housing responsive to climate change and preservation of the tundra. This project was in partnership with the Nunavimmiut community and Quebec's housing agency, along with the commissioning of architect Alain Fournier, whom all parties had a trusted relationship with due to his experience in northern architecture in Nunavik. The process included a two day design charrette, which included Nunavik officials, an architect, and engineer, and seven residents from four villages in Nunavik. The outcome illustrated that appropriate co-design of housing embraces cultural responsiveness and empowerment.

The resulting design included culturally appropriate features such as a reverse entryway so that living spaces always face the sun, even if they are on the wrong side of the road. The houses are on piles

driven into the ground to preserve the permafrost, and the entryway to each house includes a cold porch for storing gear, butchered game, and warm porch for coats and boots, with a lockup for hunting rifles and ammunition. A year later after tenants moved into the duplexes, socio-cultural evaluations were undertaken to gauge levels of satisfaction within the new homes. The pilot housing project is on track to demonstrate best practices in participatory policy and engagement in terms of its process, collaboration, architectural design and innovation, monitoring, and cultural empowerment.



Matrix of Measures

Ease of Implementations

In this section, the ease of implementation is classified on a easy, moderate, hard scale depending on the magnitude of changes that are required:

Easy	Moderate	Hard
<ul style="list-style-type: none">▪ Design Guidelines	<ul style="list-style-type: none">▪ Local and provincial regulations▪ Financing requirements	<ul style="list-style-type: none">▪ Federal Regulations▪ Life and Safety regulations

Capacities to Address CAH by Jurisdiction

Municipalities:

Municipalities can impact development of specific housing projects through community amenity contributions, reduced fees (e.g., development cost charge waivers), official plans and zoning bylaws. They can also exercise their powers have powers to repurpose out-of-date industrial lands. Regulations and zoning could be adapted to allow for culturally-appropriate design.

Provinces:

Provincial governments can address CAH concerns through strategic planning, regulation of real estate development, relations between landlords and tenants, land use planning, development finance, funding of social housing programs, and development of technical standards to simplify code compliance . The province can encourage CAH principles through the provincial building code and by outlining funding conditions for housing programs.

Federal:

The federal government has the capacity for designing nation-wide plans around housing. The federal government can partner with provincial government and invest in affordable and social housing. They can conduct research on the housing market and related topics through the Canada Mortgage and Housing Corporation. Housing ministries can align their policy direction with other relevant ministries

Matrix of Measures

Summary of Measures of CAH (see appendix D for complete Matrix of Measures)

Category	Measure	Barrier to Implementations
1. Dwelling and Amenity Design	<ol style="list-style-type: none"> 1. Provide accommodation for larger households with 3+ bedroom Homes 2. Reevaluate the definition of overcrowdedness 3. Provide additional interior spaces to allow CA programming needs 4. Acknowledge different notions of private-public spaces 5. Incorporate culturally-sensitive communal spaces 	<ul style="list-style-type: none"> ▪ Design guidelines/requirements ▪ Mainstream housing market trends discourage non-standard home layouts
2. Construction Methods & Green Strategies	<ol style="list-style-type: none"> 1. Incorporate local expertise and traditions regarding construction techniques and materials 2. Climate adaptation in agreement with culturally-appropriate techniques 	<ul style="list-style-type: none"> ▪ Standard or governmental green regulations (e.g. Step Code, LEED) can be restrictive regarding alternative approaches ▪ Green incentives may require specific approaches
3. Supportive Services	<ol style="list-style-type: none"> 1. Incorporate culturally-sensitive supportive “soft services” 	<ul style="list-style-type: none"> ▪ Design guidelines and requirements ▪ Mainstream housing market trends discourage non-market trends discourage non-standard home layouts
4. Delivery Process	<ol style="list-style-type: none"> 1. Apply participatory planning framework (OCAP principles) 2. Provide resources to strengthen the Indigenous housing provider network 3. Incorporate local labour and expertise 4. Include an assessment regarding previous experiences with governmental entities and potential cultural sensitivities around the housing delivery process 	<ul style="list-style-type: none"> ▪ Requires closing the knowledge gap ▪ Longer timelines ▪ Requires capacity building & partnership development for implementation

Final Recommendations and Next Steps

For Different Levels of Government:

1. Provide relaxations of regulations and funding programs related to enabling flexible design approaches. (e.g. the national occupancy standard)
2. Increase collaboration between different levels of government to make policies and design guidelines more compatible and foster knowledge sharing
3. Integrate funding conditions for housing to prioritize comprehensive approaches to housing development or retrofitting that address goals such as cultural appropriateness and environmental sustainability
4. Tailor the housing delivery process to acknowledge previous experiences with governmental entities, the use of potentially problematic terminologies and to foster the inclusion of local expertise.

For Housing Providers:

1. Incorporate approaches of culturally-appropriate housing in their projects.
2. Seek funding opportunities that help to reach culturally-appropriate projects which target energy efficiency, thermal comfort and sensitive design
3. Adopt OCAP principles in housing delivery whenever feasible
4. Do further research or a follow up project based on this work, including an assessment of flexibility of policies related to health, safety, and occupancy regulations to determine how difficult it is to change them and what barriers stand in the way. (e.g., technical policies, administrative costs to regulators, fire safety standards, etc.)

Appendix A.

Case Study	Approach	Summary
North American Case Examples		
Metro Vancouver	Interior Design & Amenities	<p>City of Vancouver: Housing Vancouver Strategy (2017) Fostering health and wellness through service provision integrated within the project design and built form. Emphasis on indigenous housing and wellness projects.</p>
	Support Services	<p>City of Vancouver: Healthy City Strategy 2014-2025 (2017) Includes 12 long term goals to improve livability and wellbeing, and desire to make housing inclusive, appropriate, and affordable</p>
	Interior Design & Amenities	<p>City of Vancouver: Housing Design & Technical Guidelines (2018) “Inclusive housing design” which involves aspects such as common amenity spaces, both indoor and outdoor, and other conditions decided upon between city and partnering housing providers.</p> <p>Lu’ma Aboriginal Children’s Village (Housing Vancouver Strategy, 2017) A 24 unit family housing project housing 30 foster children, 3 youth-in transition, and 7 families that aims to end indigenous youth homelessness. The project incorporates Indigenous cultural and design elements and houses Lu’ma, the housing provider’s, office, amenity, and programming space. Lu’ma’s supports also include a mentorship program to support occupants’ transition into independent adulthood and mental, spiritual, and emotional well-being.</p> <p>City of Richmond FlexHouse Project (3860 Regent St.) A partnership between CMHC, City of Richmond, and Pacific Western Developments Ltd., this two-story demonstration FlexHouse can be converted from a four-bedroom, a duplex or rental suites through its flexible floor-plan.</p>
British Columbia	Green Strategies & Features	<p>BC Housing: Interim Guide to Indigenous Housing Development and Design (2018) Cultural Housing includes: Local materials, internal courtyards, community gathering spaces, outdoor spaces, outside access to potable water, out-buildings, community kitchen, natural light & views of the outdoors at home, Indigenous artwork</p>
	Delivery Process	<p>Making a House a Home: Indigenous Engagement and Housing Size in BC, (Butler, 2017)</p> <ul style="list-style-type: none"> ▪ Need for a culturally-sensitive engagement policy for housing ▪ Consider alternative family structures and intergenerational housing ▪ Housing layout and room configuration
	Interior Design & Amenities, Delivery Process	<p>Green and Culturally Appropriate Building Design: For the Clayquot Sound First Nations (Ecotrust Canada, n.d.)</p> <ul style="list-style-type: none"> ▪ Consider cultural design elements ▪ Traditional long house design: Building materials harvested locally, considering local geography and climate, and demographics.

Appendix B.

Case Study	Approach	Summary
North American Case Examples		
Quebec	Interior Design & Amenities	<p>Seeing Like and Inuit Family: The Relationship Between House Form and Culture in Northern Canada (Dawson, 2006)</p> <ul style="list-style-type: none"> ▪ Inuit households “lump” activities into one or two highly integrated spaces within the house. ▪ Some families also express a preference for sleeping together in integrated areas (living rooms), leaving more segregated rooms (Bedrooms) unoccupied, or used as storage or work areas. ▪ In contrast, Euro-Canadian houses are compartmentalized, and reflect a preference for “scattering” of activities and people to specific areas of the house.
City of Calgary	Support Services	<p>Housing Issues of Immigrants & Refugees in Calgary (Pruegger, V.j. & Tanasescu, A, 2007)</p> <p>Increasing the range of culturally appropriate housing stock:</p> <ul style="list-style-type: none"> ▪ Build new housing stock to accommodate for large family unit newcomers ▪ Proximity to bus lines ▪ Opportunity to choose neighbourhoods close to family, social networks, and religious and cultural centres ▪ Services delivered in first language
City of Toronto	Interior Design & Amenities	<p>Immigrant Housing Experiences in Toronto (Murdie & Texteira, 2003)</p> <ul style="list-style-type: none"> ▪ Large households have a tendency to concentrate to create a sense of security, and lead to “overcrowding” in apartments which has contributed to cultural clashes and harassment by building managers and property owners. ▪ Reported challenge with finding ‘appropriate housing’ tied to household size and income.
	Support Services	<p>Hong Fook Mental Health Association & Housing in Toronto (Addictions and Mental Health Ontario, 2018)</p> <ul style="list-style-type: none"> ▪ Adapted culturally appropriate soft services into housing for Asian and Southeast Asian tenants experiencing mental health challenges.
United States	Interior Design & Amenities	<p>Listen to the Elders: Design Guidelines for Affordable Multifamily Housing for the Elderly Based on Their Experiences (Shin, J.H., 2018)</p> <ul style="list-style-type: none"> ▪ Issues pointed out by Korean-American elders include noise control between units, thermal comfort, and the absence of a balcony or patio. ▪ Issues pertinent to senior housing included absence of bathtubs, and windows not fully operational by frailer individuals. ▪ Elders did not like the overly protective management Policy
	Interior Design & Amenities	<p>U.S. Policy on Occupancy Standards (From Office of Refugee Resettlement)</p> <ul style="list-style-type: none"> ▪ US Fair Housing Act prohibits exclusion of persons from participation in federal housing programs on the basis of race, colour, or national origin.
	Interior Design & Amenities	<p>Fair Housing: Familial Status and Occupancy (Sjokec, 2016)</p> <ul style="list-style-type: none"> ▪ Occupancy standards cannot use familial status as a basis of discrimination

Appendix C.

Case Study	Approach	Summary
International Case Examples		
Germany	Support Services, Interior Design & Amenities, Delivery Process	<p>Muenster, Germany & Migrant Housing: Better Housing for Refugees Means Better Housing for All (Cities of Migration, 2016)</p> <ul style="list-style-type: none"> No minimum standard for the living quarters provided by the state for displaced person Refugee housing policy based on good living principles Need for private spaces for families instead of communal kitchens and bathrooms No segregation of migrants or ghettoization Access to green spaces, community input, childcare, community & neighbourhood groups
Netherlands	Interior Design & Amenities	<p>Community and Health: Immigrant senior Co-housing in the Netherlands (Fromm & de Jong, 2009)</p> <ul style="list-style-type: none"> The majority of modern Dutch housing consists of apartments for the nuclear family structure; housing is not sized for extended families. Issue of aging immigrants requiring support & supervision and living alone, but also being in an environment where language, beliefs, and religions are foreign Proposed non-profit built co-housing designed for aging immigrants
New Zealand	Green Strategies & Features, Interior Design & Amenities	<p>Voices from Tokelau: culturally appropriate, healthy and sustainable extended-family housing in New Zealand (Gray & McIntosh, 2011)</p> <ul style="list-style-type: none"> Living in crowded conditions in old, small units Different categories of analysis: Insulation, Heating, ventilation, materials, orientation & layout, amenity, space & size, safety & security, households & owners Design and construct culturally and socially-appropriate social housing for a three generation Polynesian extended family that would stay warm and dry and be moderately priced
Singapore	Interior Design & Amenities	<p>Building a Cohesive Society: The Case of Singapore's Housing Policies (Di Mauro, 2018)</p> <ul style="list-style-type: none"> Singapore's modernization also yielded universal public housing combined with an ethnic residential quota system. Public housing has an ethnic quota, and it promotes social integration by mixing types of flats and income levels, providing quality shared public spaces and services.
Peru	Green Strategies & Features	<p>Post-disaster Housing Reconstruction and Social Inequality: a Challenge to Policy and Practice (Oliver-Smith, 1990)</p> <ul style="list-style-type: none"> Highlights importance of pre-disaster socio-economic patterns for reconstruction and the criteria used for assessing the success of post-disaster reconstruction and development projects Design to consider seismic risk & be locally adapted- based on pre-Columbian society's seismic adaptive housing construction techniques and building form (e.g., storage houses for emergency food supply post-disaster, light roofs to prevent injury in an earthquake)

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DWELLING & AMENITY DESIGN

Measure	Rationale	Ease of Implementation	Barriers to Implementation		Strategies to Address Barriers
			Regulation	Financial Viability	
<p>1.1</p> <p>Provide accommodation for larger households</p> <p><i>E.g., 3+ bedroom homes, designed for intergenerational households, extended family, etc.</i></p>	<p>Immigrants and First Nations households tend to have larger Canadian population.</p> <p>Most market and social housing provides a limited supply of homes with more than three bedrooms.</p>	Moderate	<p>Design guidelines/requirements by governments and grant providers.</p>	<p>Higher demand of one-to-two-bedroom homes reduce the incentives to build larger homes.</p> <p>Governmental and private housing grants and access to financing may be tied to specific design characteristics</p>	<p>Flexible homes that have provisions to combine with adjacent units to provide additional bedrooms if needed</p>
<p>1.2</p> <p>Reevaluate the definition of overcrowdedness</p>	<p>Age and gender thresholds outlined in the National Occupancy Standards limits the access to housing to large households that require more bedrooms or do not fit within the NOS definitions.</p>	Easy	<p>The Canadian National Occupancy Standard (CNOS) defines crowdedness of homes by the number of bedrooms, and people per bedroom.</p>		<p>Provide clarification that the NOS provides a referential ratio of bedroom occupants and support alternative ways to do it</p>
<p>1.3</p> <p>Provide additional interior spaces to allow CA programming needs</p> <p><i>E.g., Secondary living rooms for guests, prayer rooms, open format or large kitchens, etc.</i></p>	<p>Immigrants and First Nations households have different functional needs.</p>	Moderate	<p>Design guidelines Requirements by governments and grant providers</p>	<p>Governmental grants and private housing grants can be tied to specific design characteristics</p> <p>Viability of projects which favour more cost-effective buildings with maximized use of space and minimally functional architectural program</p>	<p>Provide square-footage relaxations to allow CA programming needs</p>

DWELLING & AMENITY DESIGN

Measure	Rationale	Ease of Implementation	Barriers to Implementation		Strategies to Address Barriers
			Regulation	Financial Viability	
<p>1.4</p> <p>Create Versatile Spaces (FlexHousing model)</p> <p><i>E.g., Open-format rooms and kitchens, communal areas, barrier-free design for vision or mobility constraints</i></p>	<p>When housing is adaptable from the time of construction, flexible designs can accommodate for the evolving needs of residents, without expensive renovation or structural changes. E.g. Barrier-free access, space for maneuverability, wide doorways, grab bars, etc.</p> <p>CMHC's FlexHousing™: "an approach to housing design that may be of interest to some First Nation communities... which allows the floorplan, amenities and services of a home to be easily and cost-effectively adapted to match the changing needs of the household occupants (BC Housing Interim Guide, 2018, p 18)</p>	Moderate	<p>Regulation</p> <p><i>Design Guidelines: Universal Design Requirements by governments and grant providers</i></p>	<p>Financial Viability</p> <p>FlexHouses are affordable, especially over time, since there will be no need for costly moving or renovation expenses.</p>	<p>Provisions made during construction can simplify the later introduction of additional features that may be required. (retrofitting)</p> <p>Designed to permit easy change of use</p>
<p>1.5</p> <p>Acknowledge different notions of private-public spaces</p> <p><i>E.g., shared laundry, kitchen, courtyard, exterior spaces</i></p>	<p>Shared spaces, such as courtyards or woonerfs, blend private and public space</p> <p>Relationship between some indoor and outdoor spaces (laundry, kitchen, etc.)</p>	Moderate	<p>Design guidelines/requirements by governments and grant providers.</p>	<p>Governmental and private housing grants and access to financing may be tied to specific design characteristics</p>	

CONSTRUCTION METHODS AND GREEN STRATEGIES

Measure	Rationale	Ease of Implementation	Barriers to Implementation		Strategies to Address Barriers
			Regulation	Financial Viability	
<p>2.1</p> <p>Incorporation of local expertise and traditions regarding construction techniques and materials</p>	<p>Supports culturally-appropriate techniques regarding building methods and traditional materials.</p> <p>The potential benefits include an increased sense of ownership and belonging. Materials and other design features may ease the transitions to different types of housing.</p>	Medium	Not all materials and construction methods directly comply with existing building codes and/or safety regulations.	Some materials may increase construction costs and time.	Sourcing local materials or employing particular techniques may actually provide time and cost savings
<p>2.2</p> <p>Climate and geotechnical adaptation in agreement with culturally-appropriate techniques</p> <p><i>E.g., building materials and structure, and layout to influence energy efficient design, considerations for radon, ventilation, geotechnical site and climate aspects</i></p>	<p>Supports culturally-appropriate techniques to increase energy efficiency and inhabitant comfort.</p> <p>Increases energy and water efficiency and inhabitant comfort and lowering operational costs to households through culturally-appropriate techniques in terms of layout, configuration, and building materials.</p> <p><i>E.g. Using locally-sourced cedar as a building material for specific Indigenous communities</i></p>	<p>Easy- Moderate, depending on energy and water efficiency improvement technique</p> <p>Layout and housing configuration might be more difficult to implement than adding energy efficient technology or using local building materials</p>	<p>Must follow local planning goals & priorities</p> <p>Design guidelines/requirements by governments and grant providers.</p>	<p>Coordination issues around funding & implementation - who is responsible for what?</p> <p>May require capacity building & partnership development for implementation</p> <p>Requires innovative financing approaches</p> <p>Materials that require translocation from long distances (eg. suppliers and manufacturers from outside the region) are to be discouraged.</p> <p>"Fourplex, echoing the longhouse"</p>	<p>Can be paired with other efforts to enhance building energy performance, perform housing repairs, and capitalize on local labour force and resources</p>

SUPPORT SERVICES

Measure	Rationale	Ease of Implementation	Barriers to Implementation		Strategies to Address Barriers
			Regulation	Financial Viability	
<p>3.1</p> <p>Incorporate culturally-sensitive support services</p>	<p>In current social housing programs, on-site support services provide vulnerable tenants with services to improve their wellbeing and assist them towards their independence. This services include health services, employment connections, counselling services, etc.</p> <p>Some populations are more vulnerable to certain health and social issues and/or require specific services that might not be included in standard projects. Some populations may have different ways to deal with certain issues thus requiring different spatial and functional design.</p> <p><i>E.g, healing programs for intergenerational trauma, on-site childcare, social and counselling services for tenants, connections to meaningful employment</i></p>	<p>Easy</p>	<p>Design guidelines/requirements by governments and grant providers.</p>	<p>Potentially high operational costs</p> <p>Restrictions of subsidies</p>	<p>Work with non-profit operators</p> <p>Requires secure government funding</p> <p>“Soft services” must be incorporated from the outset of project design for building form to support activities in common and communal spaces.</p>

DELIVERY PROCESS

Measure	Rationale	Ease of Implementation	Barriers to Implementation		Strategies to Address Barriers
			Regulation	Financial Viability	
<p>4.1</p> <p>Apply Participatory Planning Framework using OCAP principles</p> <p>1) ownership of cultural knowledge, data and information</p> <p>2) control over all aspects of the research and information processes that impact them</p> <p>3) Access to information and data about themselves</p> <p>4) Possession and physical control of data</p>	<p>Effective engagement with communities in housing design can promote housing adequacy and acknowledges and addresses historical uninvolved, lack of capacity, and housing-related skills</p> <p>Incorporating key principles of engagement including respect, early engagement, openness, consensus and collaboration, and trust, could help improve housing suitability for particular cultural groups</p> <p>1) Community Planning and Inventory</p> <p>2) Green Strategies and Features</p> <p>3) Culturally-appropriate Design.</p>	Easy	<p>Requires closing the knowledge gap</p> <p>Requires longer timelines</p> <p>May require capacity building & partnership development for implementation</p>	<p>Recognize benefits of an inclusive process to developing housing that outweighs the costs of a longer planning and delivery process</p> <p>Consult stakeholders and develop mutual agreements early on to avoid delays</p> <p>Prioritizing community partners in the commissioning process</p> <p>Co-design workshops, charrettes</p>	
<p>4.2</p> <p>Strengthen the Indigenous as well as other culturally-specific housing provider network</p>	<p>Supporting the establishment of a broader cultural affiliation structure of housing providers may increase representation on the delivery of housing projects, ensuring more direct feedback and identification of culturally-specific requirements.</p>	Medium	<p>Prioritizing community partners</p>	<p>Requires initial economic backing to increase educational resources for higher levels of participation</p> <p>Provide economic and educational resources through governmental grants</p> <p>Including and hiring community members within housing provider networks, and developing new ones</p>	

DELIVERY PROCESS

Measure	Rationale	Ease of Implementation	Barriers to Implementation		Strategies to Address Barriers
			Regulation	Financial Viability	
<p>4.3</p> <p>Incorporating Local Labour and Expertise</p>	<p>Contractors may be more willing to use local labour if they know the profit will generate enough guaranteed work to off-set additional effort of training costs.</p> <p>Speaking directly with potential contractors, manufacturers or suppliers is the best way to explore these opportunities.</p>	Medium		<p>Can slow development of new housing. It is important to weight urgency for new housing against potential economic benefits of increasing local capacity.</p> <p>Ensuring project is cost effective</p>	<p>Having sufficient employment for members in the community after the housing project is complete</p> <p>Members who are committed to training</p>
<p>4.4</p> <p>Acknowledge sensitivities and previous experiences of the community with the government</p>	<p>Some communities have assumptions or attitudes towards governmental institutions, policies and programs. These are informed by previous experiences, positives or not, and can deal with aspects such as trust, uses of problematic terminologies, schedules or expectations.</p>	Easy/Medium		<p>Longer time prior to the start of the project but the potential benefits may overcome this</p>	<p>Education and incorporation of active consultation procedures during the early stages of housing project delivery</p>