

**Winter House for an Inuvialuit Family:
Dwelling, Collective Memory, and the Qallunaat Designer in the
Western Arctic**

by

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Abstract

Contemporary housing in the western Arctic is frequently based on Euro-Canadian (qallunaat) concepts of the home, which are ill-suited to Inuvialuit (Inuit) ways of life. Additionally, the forced settlement of Inuit peoples and detachment from Inuit cultural practices has resulted in what has been called a “spiritual homelessness.”

Through the design of a winter house for an Inuvialuit family, this thesis considers Inuit perspectives of domestic life and the role of the dwelling in the transmission of culture between generations. The house is understood as one building in a continuum of places and small structures that make up an extended Inuvialuit home. Evidence from Inuit art, anthropology, and the author’s own travels in the North inform the articulation of house-form to support cultural practices, communal family gathering, and the needs of daily life out on the land and embedded in the wage economy.

Acknowledgements

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Thanks to Roger Lewis from the Nova Scotia Museum, who offered insight into an indigenous people's perspective of research, and to my shipmates in the Coast Guard, who have taught me so much about the workings of the Mackenzie River over the years.

To my partner, Kim: you have supported me and my work in every way imaginable. Thank you. I could not have done this without you.

Finally, I'd like to offer a warm thank you to the Inuvialuit communities along the Mackenzie River who have always been open and kind and friendly to an outsider from the South. This work has been undertaken with great respect.

Chapter 1: Introduction

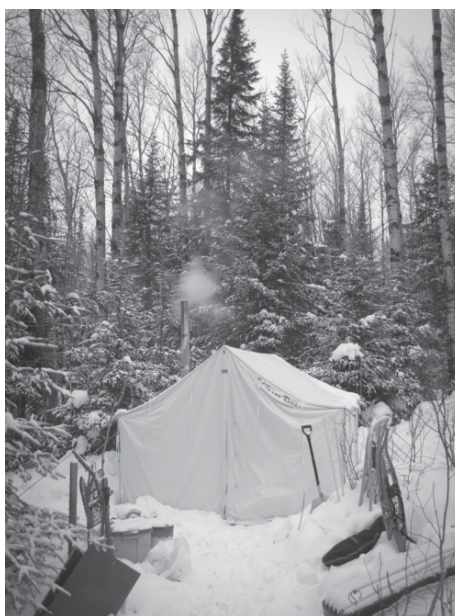
1.1 Before We Begin

Although I have spent a significant amount of time in the Mackenzie Delta region of the Western Arctic over the last decade, I am an outsider; of neither Inuvialuit or Inuit descent. As a southerner (or Qallunaat) I am –and must be– aware of the painful legacy of supposed solutions thrust upon Inuit communities by people from the south. Rather, this work has been undertaken with the goal of understanding more about dwelling in Inuit (and specifically Inuvialuit) communities. The design of a lamp and a house have been opportunities to consider a different way of life and the relationship between built form and the transmission of culture between generations. If the ideas presented here are helpful to Inuit communities I would be honored. More likely they are informative to those of us in the South who often have trouble remembering there are other ways to live.

1.2 A Traveller and a Line

In *Lines*, anthropologist Tim Ingold compares western notions of travel to those of the Inuit. Citing ethnographic work by Claudio Aporta, Ingold notes that for Inuit peoples travelling was not merely transitional, the necessary burden undertaken between two points, rather, movement was a way of being.¹ Travel was a defining part of the traveller. He continues to describe the land as a surface inscribed with the memory-traces of human and non-human travellers interacting with their surroundings, finding food, responding to weather, establishing routes. This engaged, interactive form of movement through space is described by Ingold as wayfaring. It's an important concept for the study that follows, but I have realized

¹ Tim Ingold, *Lines: A Brief History* (New York: Routledge, 2007), 78.



My tent-home outside Thunder Bay, Ontario, 2010.

that this is also an apt metaphor for my own movement toward and through this thesis.

Almost a decade ago, while studying at Lakehead University in Thunder Bay I decided to spend the winter term living in a canvas tent on an empty piece of land owned by a friend. My romantic visions of reading by the wood stove quickly dampened as the floor of snow sublimated and condensed on the ceiling of the tent, in turn raining on my reading material and bed. For the next few months I lived a dual life: showering at the gym and going to classes during the day before driving out of the city and snowshoeing down into a valley where my tent awaited. Rather than a tranquil life, it was a daily struggle to improve my chosen home and develop routines that would save time and increase comfort. Temperatures in the



Onboard a Coast Guard NavAids tender near Norman Wells, NT. 2012.

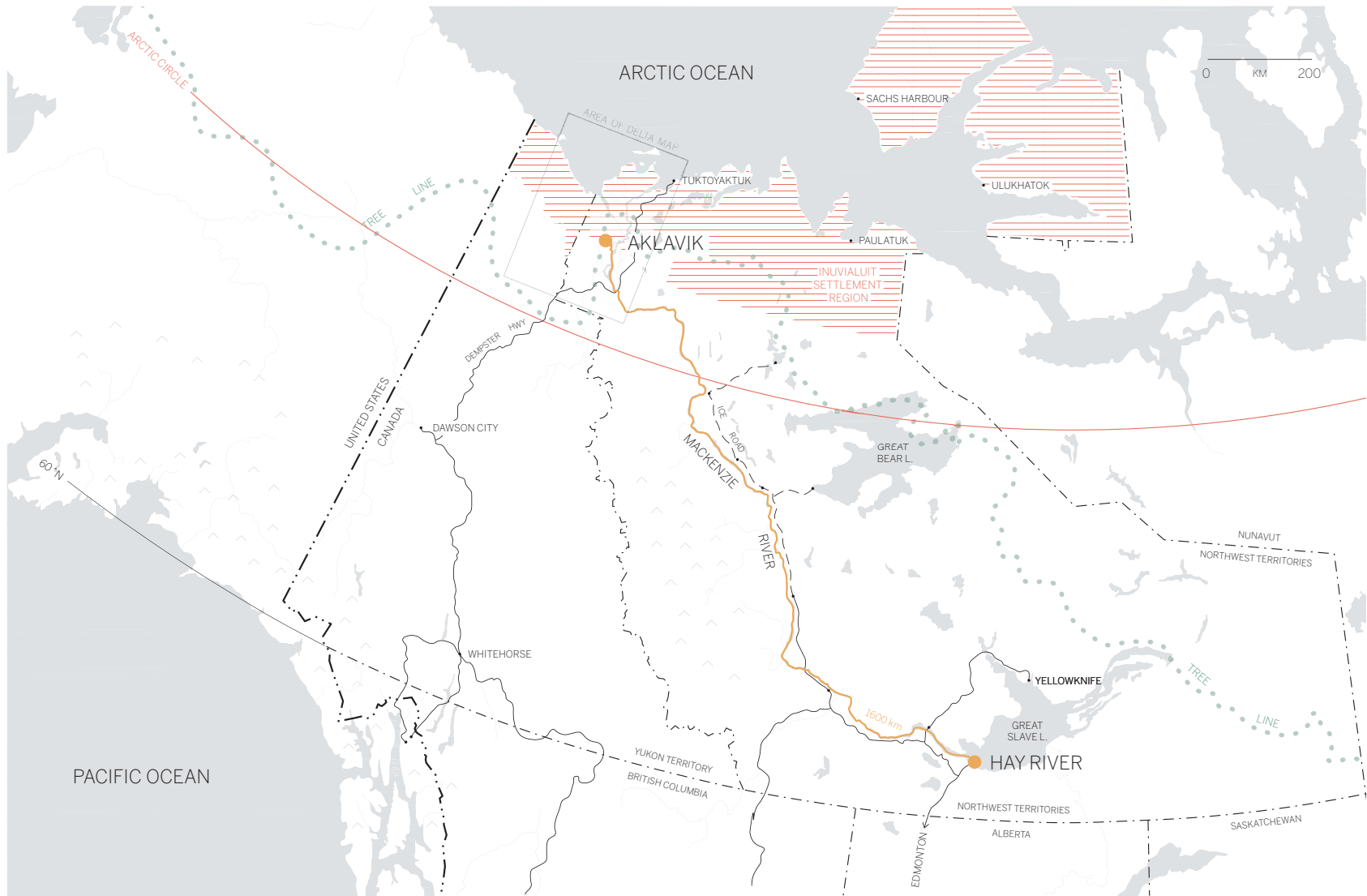
tent often dropped 40 or 50 degrees celsius over the course of the night, as the inefficient stove burned through its fuel while I slept; and in the morning I'd dress as quickly as humanly possible before strapping on my snowshoes and heading into town. The difficulty of this life, I discovered, was not necessarily the life out in the woods, nor was it life at the university; the difficulty was in living both of these lives at the same time. The concerns of life in the woods and life at the university exist on different schedules. One bound to the orderly administration of classes and the other to weather and the unrelenting hunger of the wood stove.

Around the same time a summer job as a deckhand with the Coast Guard became full-time and I was transferred to the shallow draft vessels that work the Mackenzie River, from Great Slave Lake to



Typical house in Tuktoyaktuk, NT, an Inuvialuit hamlet on the Beaufort Sea, at the end of the Mackenzie Delta, summer 2018.

Tuktoyaktuk, NT. Over the next decade I'd return to the Mackenzie for up to half the year, placing and retrieving buoys and maintaining shore towers that mark the shallow channel up and down the thousand-mile river. I had never thought about the western Arctic and suddenly I was spending a significant portion of my life there, learning the river mile by mile. I was initially quite shocked at the rough condition of northern towns like Aklavik, Inuvik, and Tuktoyaktuk and equally surprised by the warmth of people I'd meet in those towns, especially with "Government of Canada" written on the shoulders of my uniform. A moving ship is a perpetual visitor, and I have never spent more than a few busy days at a time in any of the towns in the Mackenzie delta, but it is easy to see that life functions differently in the Western Arctic than it does in Ontario. I began to notice that



Mackenzie River and Inuvialuit Settlement Region. Map data, Google Earth, 2015; Geomatic Services, Canada, 2010.

houses were adapted to function differently than they may have been designed. These modifications were often accommodations for the hunting and fishing equipment, sleds, snowmobiles, boats and ATVs used for life on the land, but the rare occasions when I'd enter someone's home indicated there were also different ideas than I was accustomed to about the use of space inside the home.

As I entered architecture school, the lessons of the canvas tent and my time on the Mackenzie stayed with me and I developed an interest in the informal modification of dwelling space. During a studio in Havana, Cuba, I catalogued informal modifications to remaining walls after the collapse of buildings in the old town. I noticed that the once-shared party walls became opportunities the residents of adjacent buildings to cut windows, hang air conditioners and water tanks, or extend rooms out into the newly empty lot. I took these tactical modifications as indicators of unmet needs in the subdivided and over-crowded apartments. This led to a studio project that sought to address problems of natural ventilation and over-crowding while grafting infill apartments onto the existing urban fabric.

Next I travelled to the desert of California through a Rossetti scholarship to study self-built housing in the informal settlement and art colony known as Slab City. I found inventive sun shades, a subterranean shower, and airy, porous sleeping towers aiming to take advantage of any scrap of cooling breeze. Again I found that the ingenuity and resourcefulness of informal building gave clues to essential climatic and cultural responses. In other words, these desert shelters told a story about their environment and the culture of the people they housed.

This work aims to interweave these threads of Northern dwelling and informal building culture into a single exploration. Situated in the hamlet of Aklavik, Northwest Territories, this thesis considers

the role of the family house in contemporary Inuvialuit (Inuit) life as a vessel for the transmission of culture, and a shelter that supports real life in the Mackenzie delta environment. Evidence from anthropology, Inuit art, and my personal experience in the North inform the design of the house. The *winter house*, in particular, is considered the point in a series of places that make up the greater home where architectural form is most critical in encouraging (or frustrating) an Inuit perspective of the use of domestic space.

Finally, as much as a personal journey has brought me to this project, I cannot expect to remove my own perspective from the work. In Chapter 3 I confront the role of the well-meaning designer from the south, and consider my own place in the project as a Qallunaat.

1.3 The Inuvialuit and the Mackenzie Delta

This thesis is situated in the Mackenzie River delta, which marks the terminus of the longest river system in Canada, and the second longest in North America. Its major tributary, the Mackenzie River (also recognized as Kuukpak in Inuvialuktun as well as Dehcho, Deho, Fleuve Mackenzie, Grande Rivière, Kuukpak, and Nagwichoonjik)² flows some 1700 kilometres from Great Slave Lake northwest to the Beaufort Sea in the Arctic Ocean.

This region is home to caribou, muskox, arctic char, whitefish, and beluga whales; among a variety of animals that have shaped life and culture here for a thousand years.³ It is also one of the few arctic environments with natural access to wood (from two sources: driftwood logs collecting in the Delta from spring floods elsewhere

2 “Traditional Names of the Big River,” Prince of Wales Northern Heritage Centre, August 26, 2015, <https://www.pwnhc.ca/traditional-names-of-the-big-river/>.

3 Ismael Alunik, Eddie D. Kolausok, and David Morrison, *Across Time and Tundra: The Inuvialuit of the Western Arctic* (Gatineau: Canadian Museum of Civilization, 2003), 5.



Mackenzie River Delta. Topographic data: Northwest Territories Centre for Geomatics.



AKLAVIK
SUMMER 2018

Entering Aklavik, NT from the riverbank. From a brief visit, summer 2018.

in the Northwest Territories and northern British Columbia, and stunted boreal conifers where the treeline follows the river north of the Arctic Circle to the edge of the Arctic Ocean).

The Delta and neighboring Beaufort shorelines form the traditional home of the Inuvialuit, an Inuit group descending from the Thule who came from northern Alaska and settled in the relative abundance of the Mackenzie delta between seven-hundred and a thousand years ago.^{4,5} Today, Inuvialuit in the western Arctic primarily live in six communities within the Inuvialuit Settlement Region:

4 Ibid., 10.

5 Natasha Lyons, "Inuvialuit Rising: The Evolution of Inuvialuit Identity in the Modern Era," *Alaska Journal of Anthropology* 7, no. 2 (2009):66.

Inuvik, Aklavik, Tuktoyaktuk, Paulatuk, Ulukhatok, and Sachs Harbour.

Inuvialuit cultural identity is tied to traditional ways of hunting and fishing and sharing country food, but few still live off the land entirely.⁶ Most Inuvialuit are participants in the global economy, working for wages and purchasing modern appliances, trucks, video games and cellphones.⁷ In the last ten years I have also noticed the introduction of high-bandwidth cellular data connection in and around remote communities like Tuktoyaktuk, and have heard hunters talk about using drones to seek out moose or caribou. Life in the north is changing rapidly, bringing new challenges and opportunities. In Chapter 2 I discuss government housing and the feelings of grief, depression and trauma associated with the cultural disconnection due to church and state assimilation projects of the twentieth century. Inuvialuit, like indigenous communities across Canada, have suffered greatly since the arrival of Euro-Canadians but have shown themselves to be resilient and adaptable.⁸ As Lyons notes, Inuvialuit "...have perpetually asserted their ability to survive, renew, and redefine themselves."⁹

1.4 Aklavik

Aklavik was established on the Peel channel in the Mackenzie delta as a Hudson's Bay Company fur trading post in 1912 due to its proximity to profitable trapping areas and the mobility afforded by the Delta channels and became a regional centre after the collapse of the bowhead whale industry in the Beaufort Sea.^{10,11} The 1920s

6 Ibid., 72.

7 Alunik, Kolausok, and Morrison, *Across Time and Tundra*, 207

8 Ibid.

9 Lyons, "Inuvialuit Rising," 72.

10 Ibid., 69.

11 "Aklavik," Inuvialuit Regional Corporation, accessed November 4, 2018, <https://www.irc.inuvialuit.com/community/aklavik>.



Aklavik, NT. Topographic data: Northwest Territories Centre for Geomatics.



Aklavik, NT, summer 2018.

saw the addition of a Northwest Mounted Police detachment, two hospitals and a Royal Canadian Corps of Signals station, along with the establishment of several missions.¹² By mid-century, many people in Aklavik had joined the wage economy and population had reached 1500.¹³ In the 1950s, the Federal Government began a project to relocate Aklavik to a new site that would be less prone to flooding and erosion. The new town, what would eventually be called Inuvik, was planned as a model town for the western Arctic.¹⁴ Like many northern communities, Aklavik faces a shortage of adequate housing, with 21 percent of houses in need of major repair,

12 Alunik, Kolausok, Morrison. *Across Time and Tundra*, 211.

13 Lyons, "Inuvialuit Rising," 69.

14 *Ibid.*, 70.



Notes on the 2006 flooding in Aklavik, NT.

Screen captures: Rob Pascal, "Aklavik Flood 2006," YouTube, June 2, 2013.

and 24 percent "in core need."¹⁵ According to the Government definition, *core need* is "housing that does not meet adequacy, suitability, and affordability norms."¹⁶ These numbers are higher than averages across the Northwest Territories by several points. Yet many residents of Aklavik resisted the move and remained. Today

¹⁵ Ibid.

¹⁶ Julia Christensen, "Indigenous Housing and Health in the Canadian North: Revisiting Cultural Safety," *Health and Place* 40 (2016): 86.

the town has reduced to 600 residents.

Aklavik is only accessible by plane or boat in the summer, and ice road in the winter. This can make life more complicated for residents and visitors than in Inuvik, which has a large modern hospital, frequent commercial flights to Yellowknife, and access to the Dempster Highway south to the Yukon and British Columbia. Additionally, Aklavik continues to face challenges from flooding when lingering ice floes hold up spring melt water. Flood evacuations have occurred in 2006 and in 2013.¹⁷

Climate change has already raised temperatures in the western Arctic and has been observed “destabilizing yearly cycles and patterns of living off the land;”¹⁸ promising to exacerbate problems of flooding and melting permafrost. The heating of the Arctic has effected game animal populations and migratory patterns, too. The Inuvialuit Climate Change Report recommends purchasing additional large household and community freezers in order to stock up on game meat for times of climate induced shortage.¹⁹ Yet many residents want to stay, citing hunting, fishing and trapping opportunities, a tight-knit community, a feeling that it has always been home, and opportunities to travel to the summer fishing/whaling camp at Shingle Point, Yukon, as reasons why.²⁰ A 2014 community survey

17 Elaine Anselmi, “The Town that Wouldn’t Die: How Aklavik, NWT defied a flooding river, a skittish government and the nation’s expectations,” *Up Here*, March 2017, <https://uphere.ca/articles/town-wouldnt-die>.

18 Communities of Aklavik, Inuvik, Holman Island, Paulatuk and Tuktoyaktuk, *Unikkaaqatigiit – Putting the Human Face on Climate Change: Perspectives from the Inuvialuit Settlement Region*, by S. Nickels, M. Buell, C. Furgal, H. Moquin. Ottawa: Joint publication of Inuit Tapiriit Kanatami, Nasivvik Centre for Inuit Health and Changing Environments at Université Laval and the Ajunnginiq Centre at the National Aboriginal Health Organization, 2005.

19 Ibid.

20 Inuvialuit Regional Corporation, “This is Aklavik, Northwest Territories,” August 18, 2017. YouTube, 3:27, <https://www.youtube.com/watch?v=ga2AuulhIKE>.

found that 60 percent of Aklavik residents over the age of 15 hunted or fished and 56 percent spent nights out on the land.²¹

21 Northwest Territories Bureau of Statistics, *2014 Community Survey Results: Aklavik*, <https://www.statsnwt.ca/community-data/CommunityPosters/Aklavik%202014%20Community%20Survey%20Poster.pdf>.

Chapter 2: Spiritual Homelessness

2.1 Government Space

“Government space,” a term coined by researcher Susane Havelka denotes “a housing system based on southern Canadian technological principles, planning practices, and cultural values.”²² “Government space” as a concept is significant in that it reaches beyond government housing as a series of buildings and considers government homes as the products of a Euro-Canadian way of thinking about domestic life. This approach also allows for other types of space to be considered. Accordingly, Havelka uses “original space” to denote pre-contact Inuit ideas and technologies related to dwelling.²³

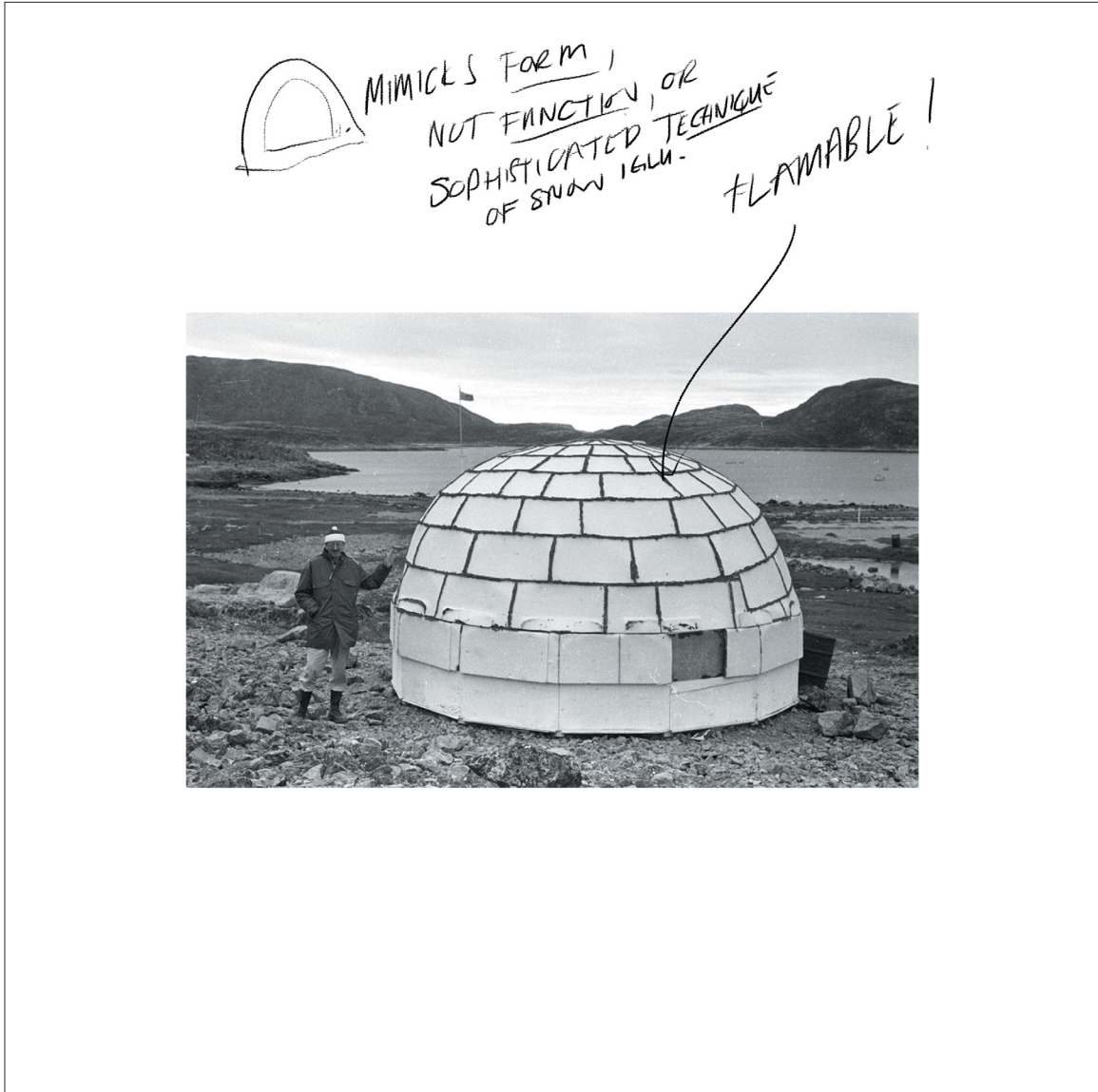
Though it could be argued that the worldview responsible for government space entered the arctic with the first European contact, the first government housing projects themselves began in the 1940s. These projects were initiated – from a government perspective – out of concern for Inuit health and hygiene, and Canada’s arctic sovereignty.²⁴ In the 1940s and 50s, the federal government explored a variety of semi-portable, low cost housing models that they felt emulated pre-contact Inuit shelters.²⁵ One such shelter was a styrofoam block iglu on a wooden platform. This particular model was found to be impractical because of degradation due to UV light exposure, and because of the inherent flammability of the

22 Susane M. Havelka, “Building with IQ (Inuit Qaujimajatuqangit): The Rise of a Hybrid Design Tradition in Canada’s Eastern Arctic” (PhD diss., McGill University, 2018), 108.

23 Ibid.

24 Indian and Northern Affairs Canada. *Canada’s Relationship with Inuit: A History of Policy and Program Development*, ed. Sarah Bonesteel and Erik Anderson. (Ottawa: Minister of Public Works and Government Services Canada, 2008), 60.

25 Ibid.

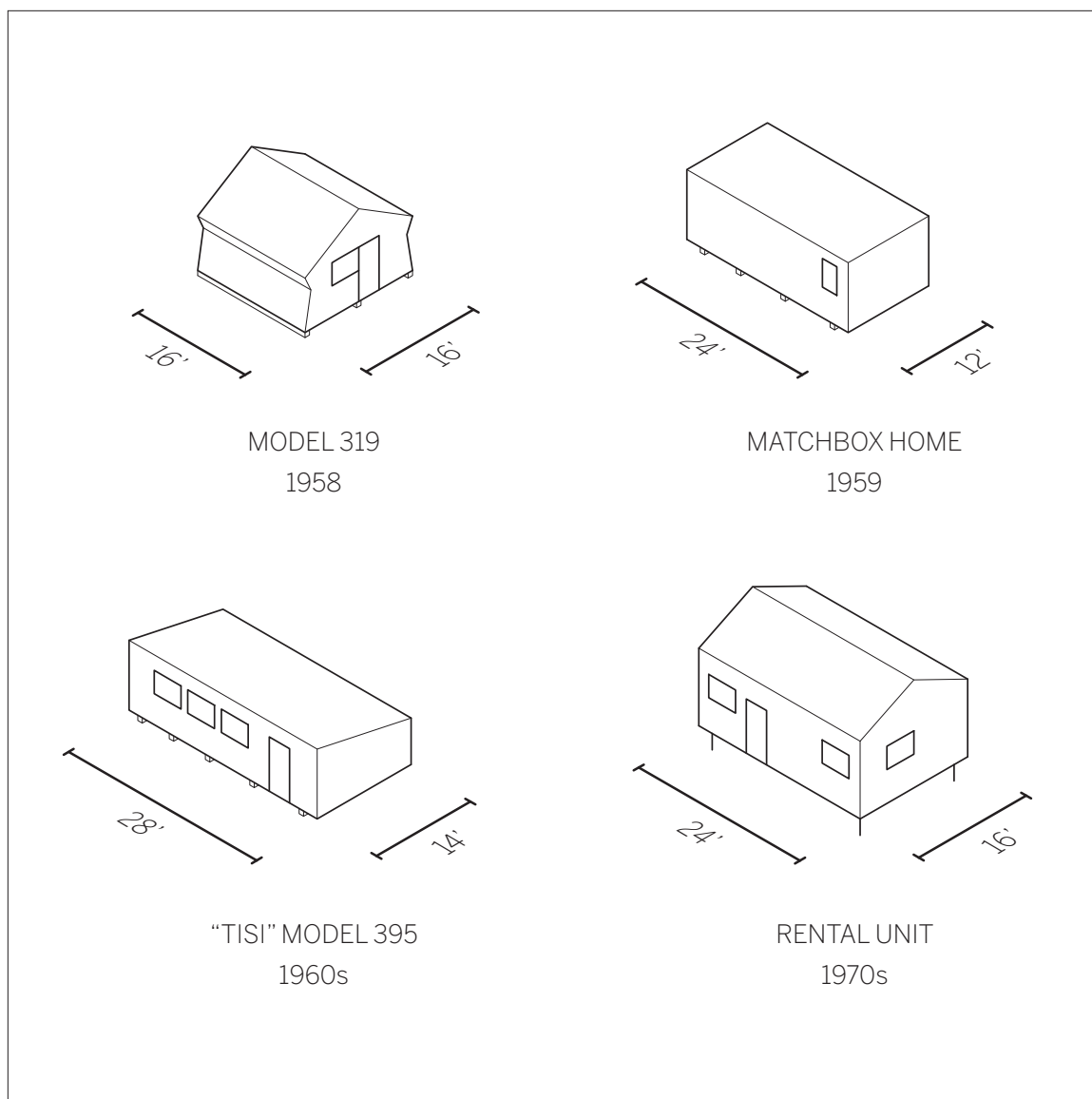


A short-lived government housing project in the 1950s proposed 14' styrofoam block iglus. This approach seeks to emulate the form of a traditional house without considering the integration of resource, skill and culture that gave rise to the original.

Photograph: Rosemary Gilliat Eaton, "Mackenzie Porter standing beside a styrofoam igloo," c.1956-1960.

styrofoam blocks.²⁶ The styrofoam iglu emulated the form of the Inuit iglu (or snow house), in the most basic, surface-level reading, but it failed to attempt any of the sophisticated environmental/ technological functionality or the careful manipulation of space in section that made actual iglus such elegant tools of self-reliance.

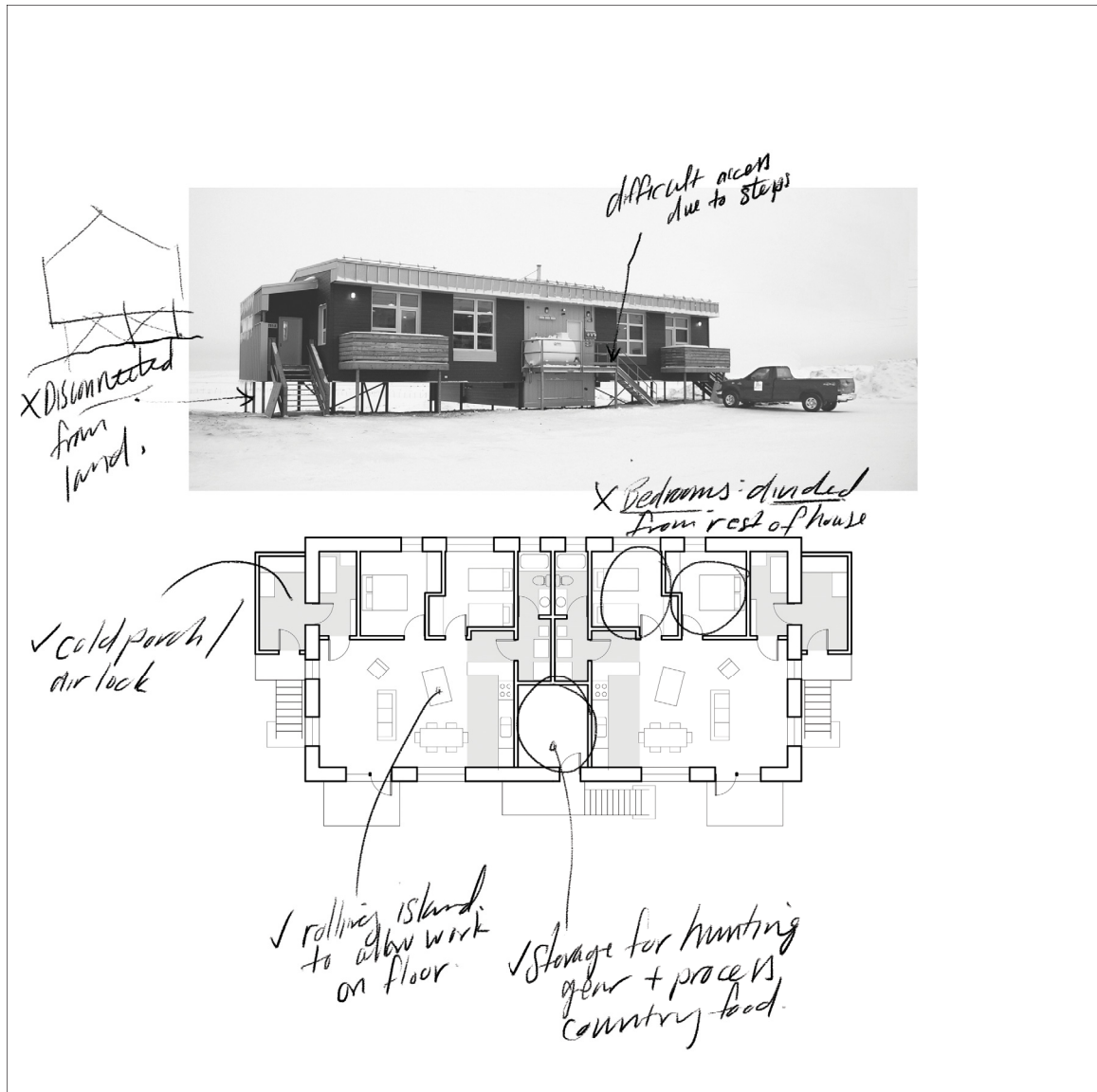
²⁶ Ibid.; Havelka, "Building with IQ," 117.



Government housing models. Based on housing information from Indian and Northern Affairs Canada, *Canada's Relationship with Inuit*, 60-61; Lola Sheppard and Mason White, *Many Norths*, 150-157; and Susane Havelka, "Building with IQ," 119-135.

From the late 1950s onwards, the federal government began developing larger stationary houses, ending the period of greatest exploration and moving more and more toward Euro-Canadian floorplans and amenities. These houses relied on complicated payment structures that many Inuit found difficult to pay.²⁷ New residents were also required to participate in training courses to educate

²⁷ Indian and Northern Affairs Canada, *Canada's Relationship with Inuit*, 60.



Recent projects in the Eastern Arctic have included community consultation. This example includes several important additions: cold porches, storage areas for storing hunting gear, and a kitchen island that rolls out of the way for work on the floor. However bedrooms are still segregated.

Photograph: Alain Fournier/EVOQ Architecture, "Pilot Nunavik Duplex," 2015.

them about how to properly live in their new house.²⁸ To this day, government houses in the north have largely been transplantations of house designs from –and for– southern Canada and a Euro-Canadian mindset.²⁹

²⁸ Ibid., 61

²⁹ Havelka, "Building with IQ," 116.

Recent arctic housing projects have increased community involvement in the design process and have begun to reflect, in the most basic sense, the reality that cultural practices of hunting, fishing, trapping and foraging continue to play an important role in Inuit households and demand specific adaptations.³⁰ However, these adaptations remain shoehorned into a Euro-Canadian concept of the home. This means that they have clearly defined programmatic spaces: a kitchen for cooking, a living room for entertaining, bedrooms to provide privacy for sleeping. These houses are designed to be used and furnished in a Euro-Canadian fashion. However, the arrangement and programming of these houses is linked to a specific cultural idea of the home which does not always align with Inuit culture. For example, interviews with Inuit families have expressed discontent with small rooms and interior partitions which limit what can be seen in the house at any given time; lack of storage space, multi-storey houses and materials that don't stand up to harsh conditions.³¹ The house-form of Euro-Canadian housing models effectively prohibit many normal activities in Inuit family households. This mismatch is evident in reports from government housing administrators:

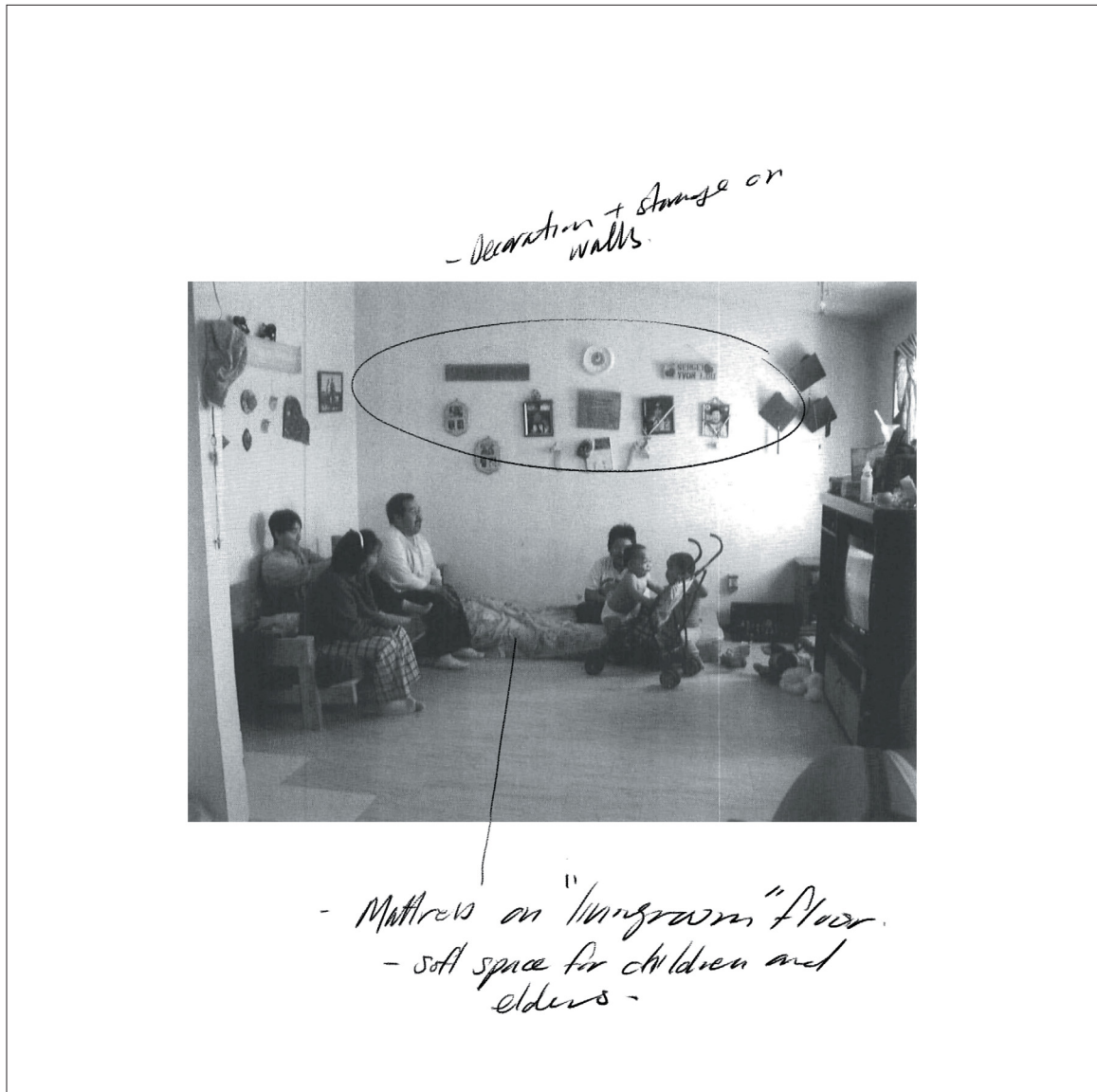
Federal housing administrators voiced concerns about hygiene and maintenance based on Inuit use of rooms and amenities within their homes, In particular, housing authorities objected to Inuit using bathtubs for storing fresh meat, and to the use of kitchens and living rooms for butchering animals, preparing hides, and maintaining boat and skidoo motors.³²

Importing the Euro-Canadian concept of the home has contributed

30 Alain Fournier/EVOQ Architecture, *Pilot Nunavik Duplex*, 2015, https://raic.org/sites/default/files/en_case_study_4.pdf.

31 Peter C. Dawson, "Examining the impact of Euro-Canadian architecture on Inuit families living in Arctic Canada. "Fourth International Space Syntax Symposium," London, UK. <http://www.spacesyntax.net/symposia-archive/SSS4/fullpapers/21Dawsonpaper1.pdf>; quoted in Havelka, "Building with IQ," 175.

32 Indian and Northern Affairs Canada, *Canada's Relationship with Inuit*, 63.



Inuit families often use the floor of the "living room in ways that Euro-Canadian or Qallunaat designers would not expect.

Photograph: Peter C. Dawson, "Socializing with family members in an Inuit home, Arviat," 2002. Peter C. Dawson, "Seeing like an Inuit Family: The Relationship between House Form and Culture in Northern Canada." *Études/Inuit/Studies* 30, no. 2 (2006): 126.

to deterioration of the housing stock. Traditional Inuit cultural practices often require or result in higher humidities and lower temperatures, which cause damage to houses not designed for them. Houses are rarely equipped with durable and polyvalent work areas suitable for the repair of equipment or the preparation of country foods and lack storage necessary for hunting, fishing, and trapping

equipment. The resulting degradation exacerbates the limited, aging, and poor quality housing stock in Inuit communities.³³

Considering how Inuit families have adapted government space to suit their own needs can offer clues to for new spaces designed to support cultural activities.³⁴

Space-syntax analysis conducted by Dawson in Arviat, Nunavut has revealed that Inuit families often have different notions of privacy and tend to place less emphasis on individual privacy than Euro-Canadian families.³⁵ Additionally, the activities themselves that are considered private or communal differ Euro-Canadian norms. For example, Inuit families often sleep together in one large room, rather than using separate bedrooms. This is consistent with a general bias toward integrated spaces and allows families to feel closer and facilitates easier minding of children.³⁶ Inuit families often form bonds and find cultural identity in activities related to living on the land: hunting, fishing, preparing country food, and sewing traditional garments.³⁷ These activities demand large work areas and often spaces that are colder and more humid than a Euro-Canadian home.³⁸ Research indicates that Inuit families have retained these cultural practices and have modified their homes and repurposed (and reprogrammed) areas of the home to suit their cultural lifestyles. These modifications can be seen as tactical actions to retain

33 Peter C. Dawson, "Unfriendly Architecture: Using Observations of Inuit Spatial Behavior to Design Culturally Sustaining Houses in Arctic Canada," *Housing Studies* 23, no.1 (2008): 126; Peter C. Dawson, "Seeing like an Inuit family: The relationship between house form and culture in northern Canada," *Études/Inuit/Studies* 30, no. 2 (2006): 131.

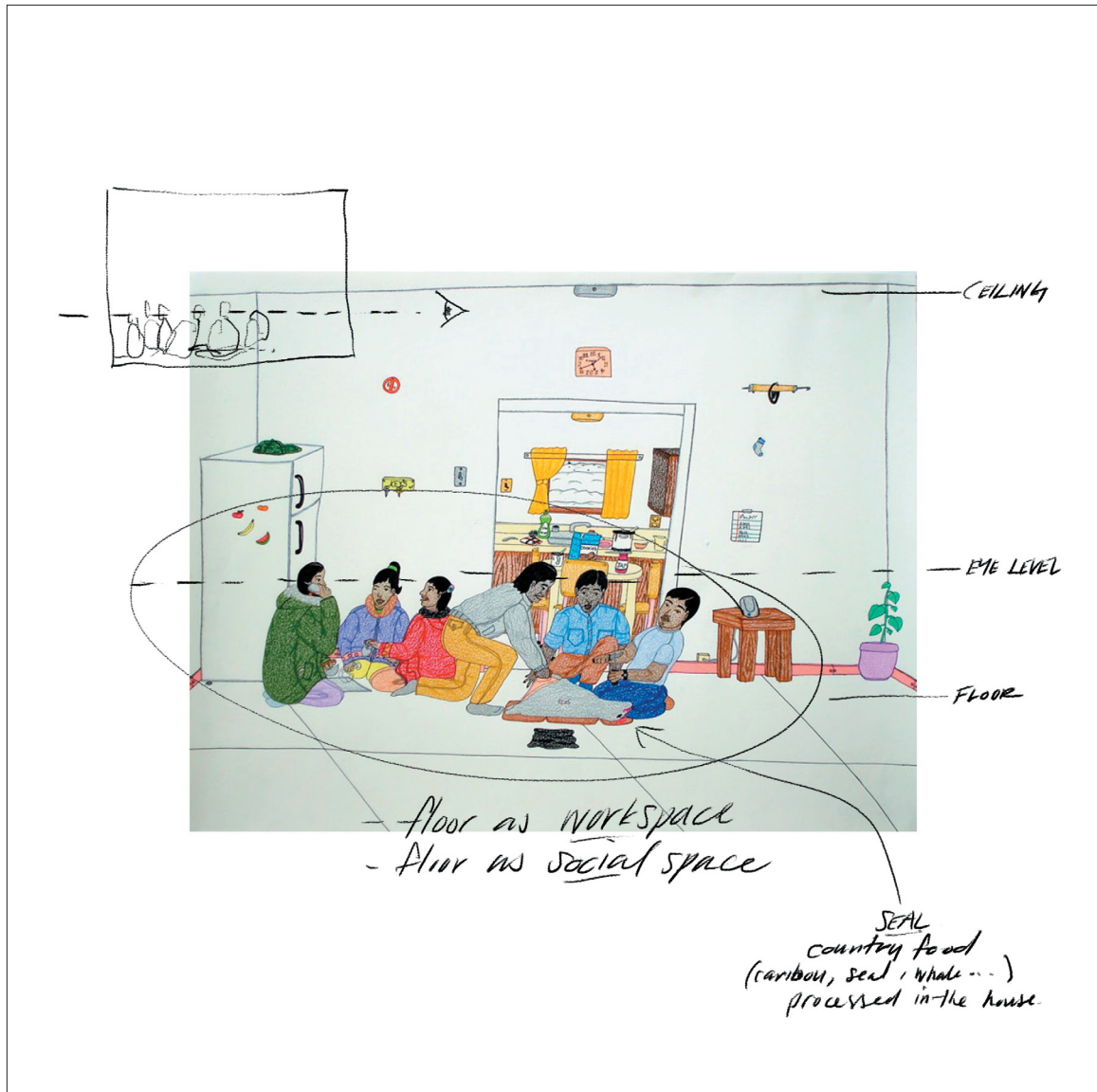
34 Dawson, "Seeing like an Inuit family," 120.

35 Dawson, "Unfriendly Architecture," 120.

36 Ibid., 121.

37 Ibid.; Natasha Lyons, "The Wisdom of Elders: Inuvialuit Social Memories of Continuity and Change in the Twentieth Century," *Arctic Anthropology* 47, no. 1 (2010): 22.

38 Dawson, "Unfriendly Architecture," 120.



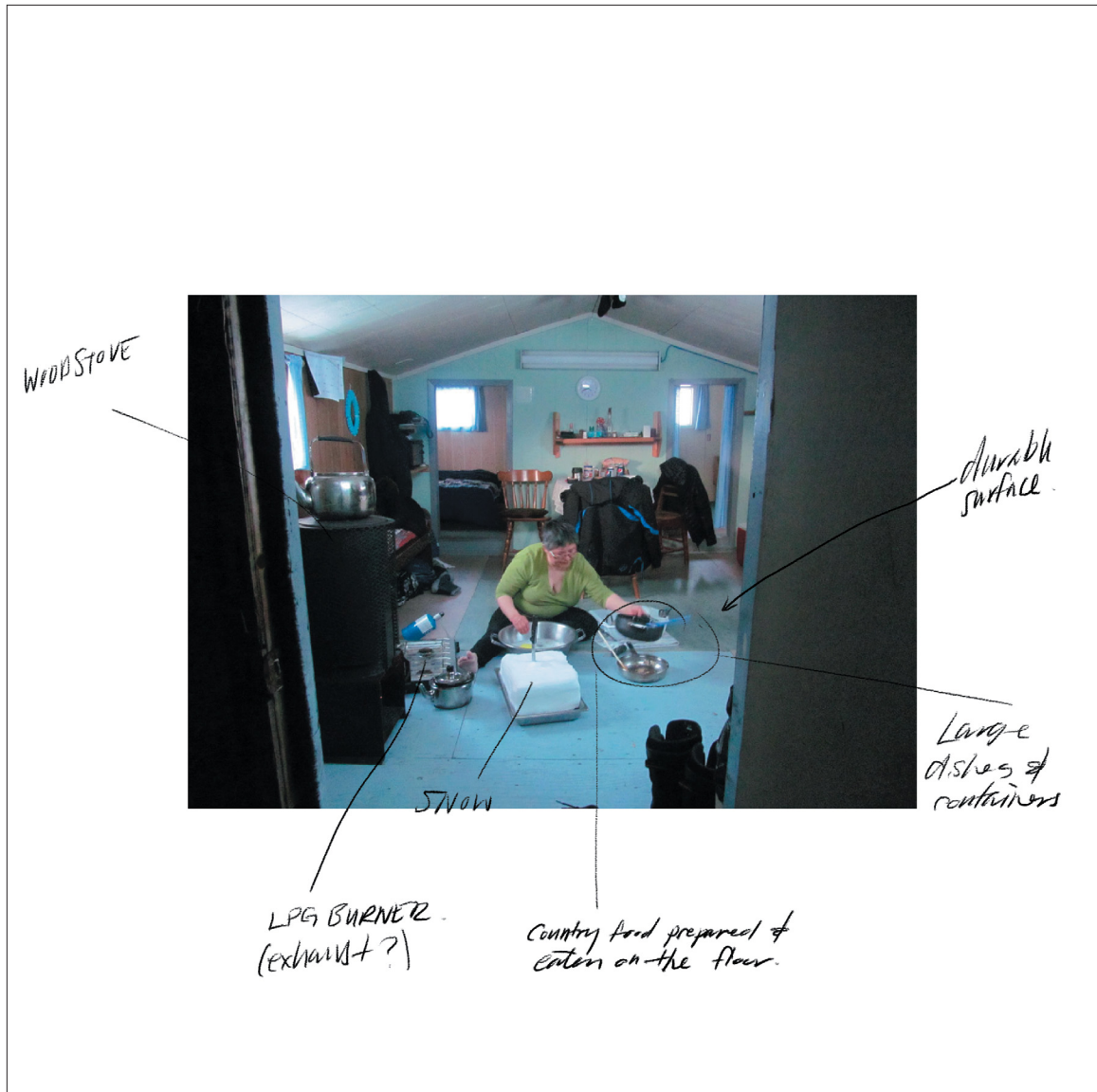
A drawing by Inuit artist Annie Pootoogook indicates a collision between Inuit ideas about habitation and the house based on Qallunaat lifestyles.

Drawing: Annie Pootoogook, *Three Men Carving a Seal, Three Women Cleaning*, 2006, wax pastel and ink on Ragston paper, 50.9 x 66.2 cm. Art Gallery of Nova Scotia.

culture at odds with the form and function of the contemporary home.³⁹

Contemporary Inuit art offers other clues. Drawings by Annie Pootoogook present an unvarnished perspective of everyday life in Inuit communities. Many of her drawings hint at the use of space

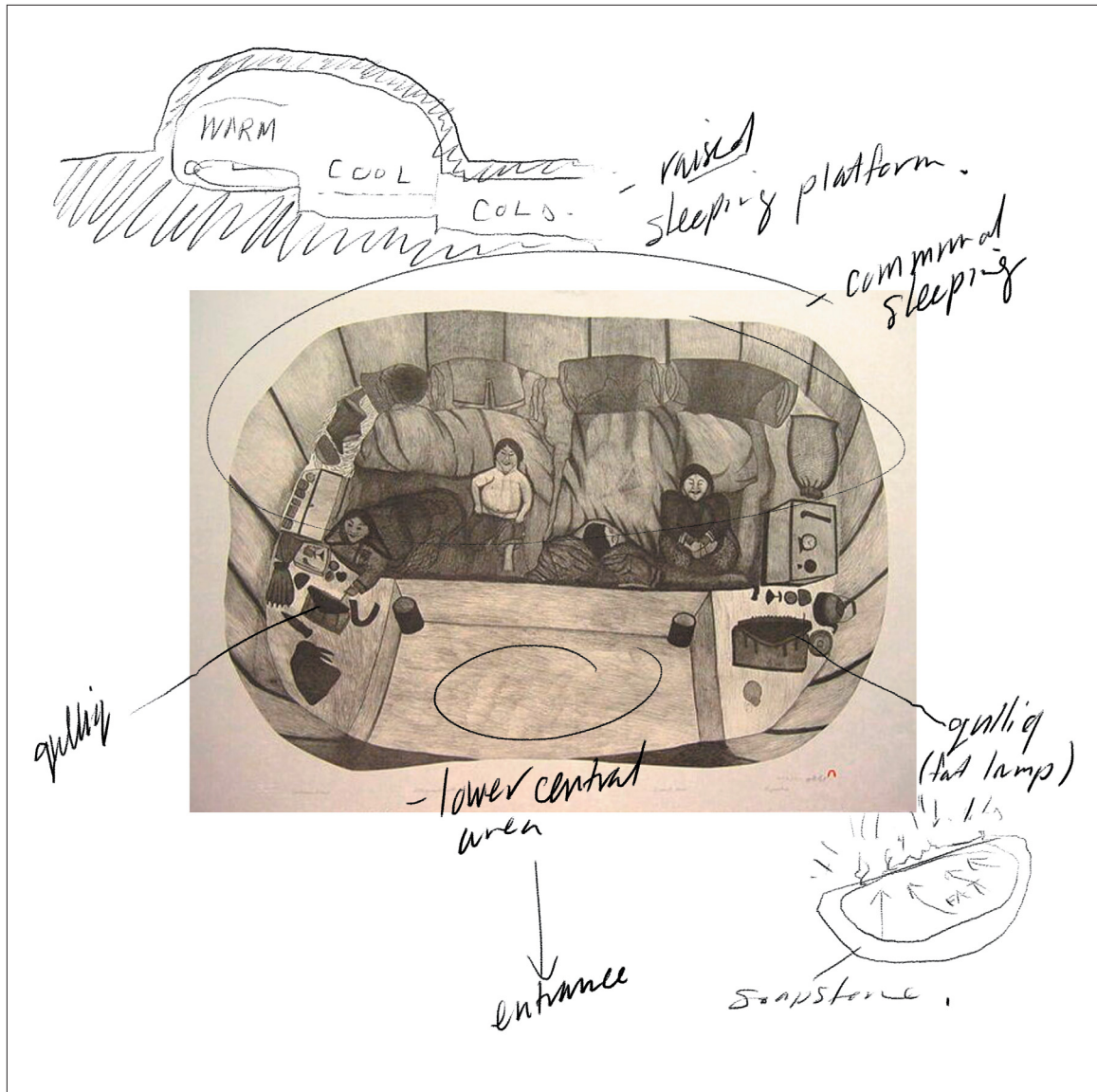
³⁹ Ibid., 125.; Dawson, "Seeing like an Inuit family," 130.



Country food meals are largely prepared and eaten on the floor.

Photograph: J. Qillaq, "Cleaning Up After a Country Food Meal," 2013; from Susane M. Havelka, "Building with IQ."

inside the house. *Three Men Carving a Seal, Three Women Cleaning*, 2006, shows a family eating a country food meal on the kitchen floor. Their eye level is low in the frame and the ceiling seems very high, perhaps demonstrating the absurdity of heating and furnishing large spaces in the north. Country food meals are often prepared and eaten on the floor in Inuit households. Large pots, bowls, and game meat make the meal impractical on a table.



The design of traditional snow houses, sod houses and tents feature common practices such as communal sleeping on raised platforms, and manipulation of floor heights to control temperature.

Drawing: Napachie Pootoogook, *Interior View*, 2000. Lithograph and chine colle, 25.5"x37.25", <https://feheleyfinearts.com/product/interior-view>.

Napachie Pootoogook's *Interior View*, 2000, illustrates a family sleeping together on a platform inside a tent or snow shelter. The women pictured are laughing and smiling. One adjusts the oil lamp from bed. Sleeping all together on a raised platform makes good sense in a small shelter in cold weather. It also becomes a social time where family bonds are formed and strengthened, and stories and lessons can be passed on.

2.2 Forced Disconnect

Living in government space has drastically altered lifestyles in Inuit communities and lead indirectly to new health concerns like diabetes, alcoholism and drug abuse, and social issues including depression, abuse and suicide.⁴⁰ The classes on how to live in a Euro-Canadian style house went hand-in-hand with residential schools as tools of cultural assimilation.⁴¹ Inuvialuit children in residential schools were emotionally and physically abused and many lost the ability to communicate with their parents in their mother tongue. Parents lamented the lost opportunity to pass on cultural knowledge to their children.⁴² A gap was created. Memmott and Chambers have termed the cultural disconnection *spiritual homelessness*:

..a state arising from separation from traditional land, and from family and kinship networks (noted earlier as a result of historical governmental policies), and involving a crisis of personal identity wherein a person's understanding or knowledge of how they relate to country, family, and Aboriginal identity systems is confused or lacking.⁴³

Many middle-aged Inuvialuit now feel that the residential school system left them without respect or self-sufficiency.⁴⁴ Even beyond the heinous, if possibly well intentioned church and state goals of Inuit assimilation this history reveals the importance of the domestic environment in the transmission of culture. Family bonds are created and skills are passed down through daily interactions, stories, tasks and meals. Lyons notes the role of the Inuvialuit land claim

40 Indian and Northern Affairs Canada, *Canada's Relationship with Inuit*, 62.

41 Alunik, Kolausok, and Morrison, *Across Time and Tundra*, 196.

42 Ibid.

43 P. Memmott and C. Chambers, "Homelessness amongst Aboriginal people in inner Sydney," accessed March 10, 2011, [http://www.uq.edu.au/housingconference2007/docs/Memmott_Chambers_2ndAHRC\(2007\).pdf](http://www.uq.edu.au/housingconference2007/docs/Memmott_Chambers_2ndAHRC(2007).pdf); quoted in Julia Christensen, "Indigenous Housing and Health in the Canadian North: Revisiting Cultural Safety," *Health and Place* 40 (2016): 84.

44 Lyons, "Inuvialuit Rising," 72.



Inuit communities today are faced with the painful legacy of the residential school system, including the lost transmission of cultural memory from one generation to the next.

Painting: Kent Monkman, *A Mother's Grief*. 2017. Acrylic on canvas, 36" x 72".

agreement as a catalyst for learning and relearning traditional stories, games and skills,⁴⁵ but perhaps the present cultural renewal is also due in part to the return of children to the daily lives of their parents and grandparents.

⁴⁵ Ibid., 73.

Chapter 3: Dwelling and Memory

3.1 In Search of Inuvialuit Dwelling

Anthropologist David G. Anderson, in a critique of architectural thinking about the North, questions the priorities of many academics interested in northern housing:

...post modern authors often invest power and agency in particular architectural forms (round vs square; skin vs brick; striated vs smooth) but show a somewhat aloof interest in how northerners nevertheless make homes for themselves in structures of an unfashionable type.⁴⁶

Anderson's comments echo in the work of Dawson's space syntax analysis and observations of resident's modifications to government housing in Arviat, NU (see chapter 2), which revealed insights into how pre-contact Inuit dwelling practices have continued in Euro-Canadian government housing. Likewise, Havelka investigated the interstitial and liminal spaces in and around government housing in Clyde River, NU to document how residents apply Inuit dwelling knowledge to informal adaptations and self-built outbuildings in order to improve the functionality of their homes.⁴⁷ The importance of this work is in linking pre-contact/traditional Inuit dwelling ideas to the complex, hybrid reality of the contemporary Arctic. Ingold notes that the word *traditional* in this context implies that a body of knowledge is fixed and static.⁴⁸ Dawson and Havelka have revealed that the Inuit dwelling worldview that shaped pre-contact houses is alive and well and adapting to current circumstances.

46 David G. Anderson, "Home, Hearth and Household in the Circumpolar North," in *About the Hearth: Perspectives on the Home, Hearth, and Household in the Circumpolar North*, edited by David G. Anderson, Robert P. Wishart and Virginie Vaté (New York: Berghahn, 2015), 265.

47 Havelka, "Building with IQ," 224.

48 Tim Ingold, "Dr Tim Ingold TEDx," YouTube. December 4, 2015, https://www.youtube.com/watch?v=RY4Vw_IT-x0.

As the work of this thesis progressed its aim shifted from the design of a house that explored possible formal and phenomenological links to Inuvialuit cultural memory to the design of a house that might embody socio-cultural principles of an Inuit and Inuvialuit dwelling worldview in order to support everyday life in the western Arctic and the transfer of culture between generations. This marks a shift in my thinking as I realized that I had previously considered Inuit culture only statically, in its pre-contact form. Rather than a link to the past, the house became a vessel for the continuing evolution of culture.

In pre-contact times, Inuvialuit like other Inuit groups moved seasonally through a variety of shelters and areas linked to opportunities for hunting, fishing, and whaling.^{49,50} Anderson continues his critique of architectural thinking in the North by proposing a different way of thinking about the *home*:

...the task seems not to reduce social life to the containers which confine it but instead to understand how people inhabit their worlds. In many cultures this may reflect a unitary framed dwelling, in others it may reflect a system of compounds or a network of places.⁵¹

It is important to consider the distinction between the *house* as a building and the *home* as an extended dwelling space. The home as a network –or continuum– of places extends the functions typically associated with a single house out into a variety of structures and zones, each of which can be more specifically tuned to particular operations, such as the smoking or drying of fish, or the capturing and processing of beluga whales.

49 Willem C.E. Rasing, “The Transformation and Transfer of Inuit Knowledge,” in Jarich Oosten and Barbara Hellen Miller, eds., *Traditions, Traps and Trends: Transfer of Knowledge in Arctic Regions* (Edmonton: University of Alberta Press, 2018), 2.

50 Anderson, “Home, Hearth and Household in the Circumpolar North,” 270.

51 Ibid.

The movement in and amongst areas of this extended home are analogous to Ingold's definition of wayfaring, in which the traveller is an active and responsive participant in the inhabitation of a place.⁵² Ingold contrasts wayfaring with systems of colonialism, which he understands not as the implementation of lines and routes on the surface of a terrain, but the creation of artificial boundaries linked into vertical assemblies –essentially the abstraction of the terrain for the purposes of remote control. Active inhabitation of a territory was essential to Inuit communities as resources were scarce and life itself depended on a deep knowledge of weather, game animals, and seasonal changes. Children were expected to observe elders and answer specific questions about practical knowledge such as detailed inquiries about the day's weather.⁵³ Rasing proposes that the intense focus on practical life served also as an answer to the mental demands of survival, creating a culture focussed on personal development of practical knowledge as a route to maturity and status in the community.⁵⁴

Inuvialuit have settled into town centres for most of the year, but the inclusion of a larger territory in the conception of the home persists. The government house now functions as one place in the continuum of dwelling places that range in complexity.⁵⁵ Aklavik residents regularly travel by boat to Shingle Point, YK, on the Beaufort Sea during July and August to go whaling, fishing, and bear hunting and to play games and enjoy the brief summer. Many residents also have fishing outposts, traplines, and small cabins elsewhere in the Mackenzie delta.

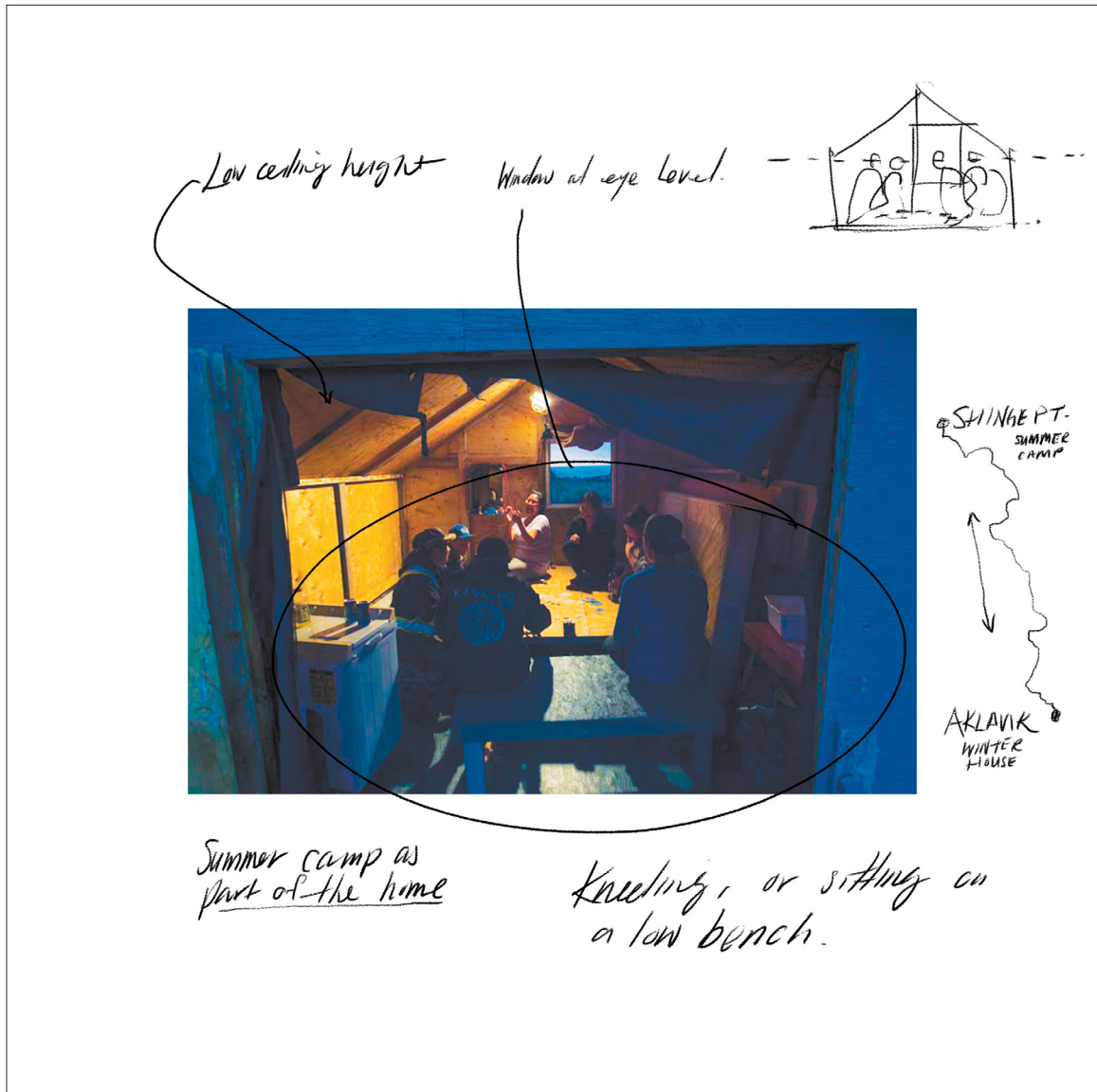
Marcel Mauss noted in 1950 that winter marked the height of the

52 Ingold, *Lines: A Brief History*, 78.

53 Rasing, "The Transformation and Transfer of Inuit Knowledge," 10.

54 *Ibid.*, 7.

55 Anderson, "Home, Hearth and Household in the Circumpolar North," 280.



A poker game at a summer fishing and whaling camp at Shingle Point, Yukon. Many Inuvialuit from Aklavik and other parts of the Mackenzie Delta head to Shingle Point each summer for fishing, games, and to see old friends.

Photograph: Peter Mather, "Teenagers playing poker at Shingle Point," 2015, *Maclean's*, November 10, 2015. <https://www.macleans.ca/news/canada/the-inuvialuits-secret-paradise-at-the-yukons-shingle-point/#gallery/shingle-point-games/slide-1>

religious calendar when Inuit gathered into snow or timber/sod houses. Close contact with family members and the community of the winter village became a time of storytelling and the solidification of shared values.⁵⁶ Oetelaar, Anderson, and Dawson reiterate the important role of the winter dwelling as a place for the transmission of oral traditions and the cementing of the social order.⁵⁷ For this reason I have chosen to focus on the winter house as the element of a continuum of dwelling in which the design of the space may have the greatest role in fostering the transfer of culture from generation to generation.

Traditional Inuvialuit winter houses were cut into a shallow hill and built up of driftwood leaned onto a central square frame, forming a cruciform in plan.^{58,59} The driftwood structure was covered with sod and later snow, and the shallow hill provided the opportunity of a low entrance tunnel to trap the cold outside of the main chamber which was higher than the tunnel. Sleeping platforms were arranged around the central frame and an aperture in the ceiling let light in and smoke out.⁶⁰ Just as iglu are an elegant material response to the abundance of hard snow in the arctic, the Inuvialuit sod house was the product of dwelling in and around the Mackenzie delta, one of the few places in the arctic with a consistent supply of wood.

The snow house and the sod house differ in form, but carry the same general principles. Floor and ceiling heights are manipulated

56 Marcel Mauss, *Seasonal Variations of the Eskimo: A Study in Social Morphology* (London: Routledge and Kegan Paul, 1979), 76.

57 Gerald A. Oetelaar, David G. Anderson and Peter C. Dawson, "The Hearth, the Home and the Homeland: An Integrated Strategy for Memory Storage in Circumpolar Landscapes," *About the Hearth: Perspectives on the Home, Hearth and Household in the Circumpolar North*, edited by David G. Anderson, Robert P. Wishart and Virginie Vat  , (New York: Berghahn Books, 2013), 223-248.

58 Mauss, *Seasonal Variations of the Eskimo*, 41.

59 Charles D. Arnold and Elisa J. Hart, "The Mackenzie Inuit Winter House," *Arctic* 45, no. 2 (1992):199.

60 Ibid.

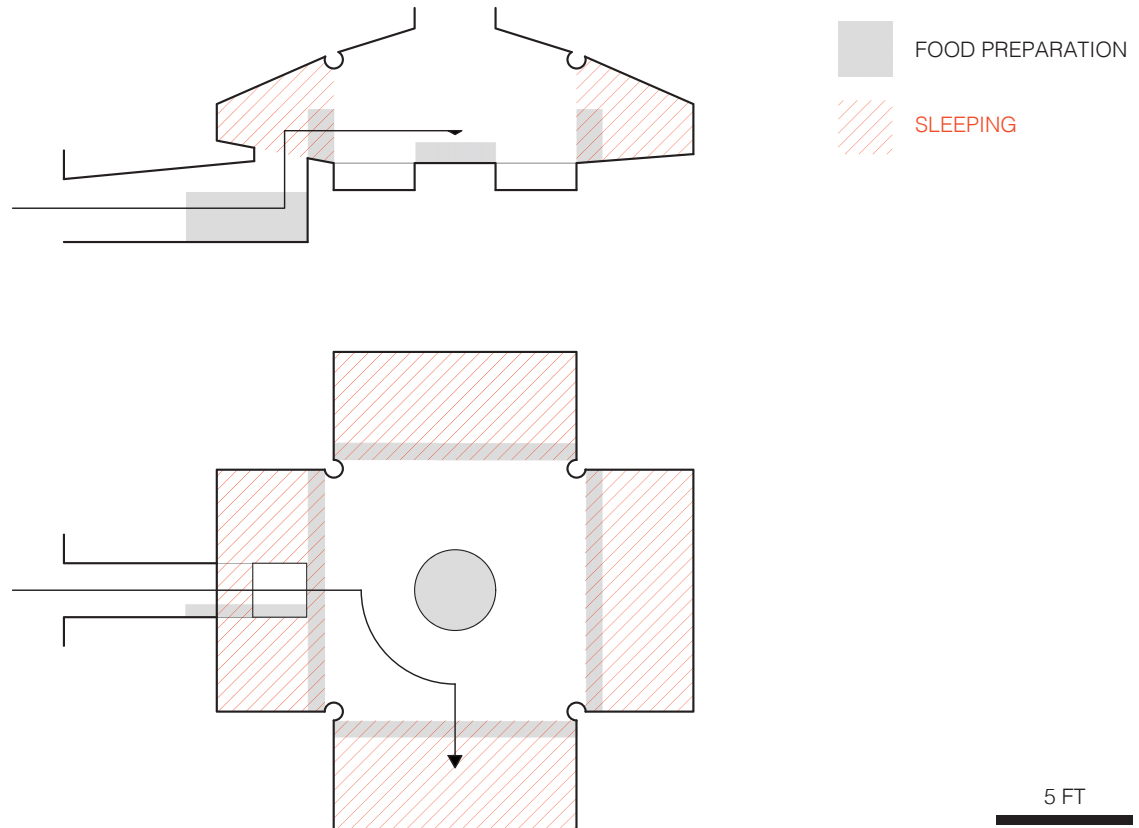


Traditional Inuvialuit sod houses were dug into the ground and constructed with driftwood and layers of sod.

Drawing: C. Arnold and E. Hart, "The Mackenzie Inuit Winter House," *Arctic* 45 (1992):199.

Photograph: author, 2011.

to create a gradient of temperature: a low entrance tunnel blocks wind but remains cool, while raised sleeping platforms stay warm; families sleep together on the platforms –usually one platform per family unit– and there are few if any interior partitions. The form and scale of these houses relate to the human body. Ceilings are kept low, and platforms are sized to accommodate a family unit.



Mapping function and progression through a simplified traditional dwelling.

Spans –either in snow or driftwood logs– relate directly to the capacity of materials at hand.

The hearth is central to the image of the home across the circumpolar north.⁶¹ Certainly this is partially due to the hearth's essential role in the production of heat and light, but Anderson notes that in Inuit societies the soapstone lamp was deeply associated with a woman's coming-of-age, and the realization of autonomy and self

⁶¹ Anderson, "Home, Hearth and Household in the Circumpolar North," 273.



Qulliq, or whale/seal fat lamps are often set near the sleeping platform where they can be easily tended through the night.

Photograph: Bryan and Cherry Alexander, "Saufak Kiviok, Inuit Woman, Trims Her Seal Oil Lamp (Qulliq) at Hunter's Hut," N.D. <http://www.arcticphoto.com/supergal/QQ/qq01/qq0120-01.htm>.

sufficiency.⁶² In a shared dwelling, individual lamps might indicate the identity of a distinct family unit. In Inuvialuit stories the lamp is often understood as an indication of something being alive, akin to an animal's heart.

⁶² Ibid.

3.2 Vessel for Collective Memory

As this project began, my early interest in the links between cultural memory and sensory experience lead me to Pallasmaa, who has written extensively on phenomenology in architecture. Pallasmaa is particularly interested in how architectural expression fuels a deep mental life of contemplation and imagination, especially through haptic feedback. This is the stuff architecture students love as we imagine someone meditating in the harmony of our creation, or finding inspiration in the delicate play of light on a wall. I came to realize however that Pallasmaa's ideas of the connection between architecture, memory, and imagination contained a dualism between the mental and physical that I had not encountered in my reading about Inuit worldviews:

We live in a world of human spirit, ideas and intentions, but we also exist in the world of matter under the quantities and qualities of the physical world. We have two domiciles that constitute and existential singularity: one in the historicity and continuum of human consciousness and emotion, the other in the world of matter and physical phenomena.⁶³

Pallasmaa suggests we live in two concurrent domains, an inner world of mental activity and an external physical world. The dualism is distinctly tied to Western thought. For Pallasmaa architecture is an opportunity to engage the normally separate realm of the mind.

Rasing proposes that in the traditional Inuit worldview no distinction was made between physical, mental and spiritual realities.⁶⁴ Inuit knowledge, he states, was embedded in a holistic cultural system that included practical, mental and spiritual elements.⁶⁵ In an oral tradition, collective cultural memory functioned as an education system for the skills that would be needed to flourish in harsh environments and in Inuit society. Children learned by first watching

⁶³ Juhani Pallasmaa, *The Embodied Image: Imagination and Imagery in Architecture* (Chichester, UK: John Wiley & Sons, 2011), 48.

⁶⁴ Rasing, "The Transformation and Transfer of Inuit Knowledge," 10.

⁶⁵ Ibid.

parents and elders, and then imitating them. Transmission of knowledge was integrated into everyday life through learning necessary practical skills and through stories.⁶⁶ The oral transfer of knowledge from one generation to the next had what Oosten and Miller describe as “the character of an initiation, of being brought into the story.”⁶⁷

The house had a significant role to play in the transfer of knowledge. Oetelaar, Anderson and Dawson report that the cosmology and social organization of Inuit society was imprinted in the design of the house serving as a memory device for social values, taboos and skills.⁶⁸ Terms used to describe directions and locations out on the land were also used to describe the interior of the house, integrating the interior and exterior worlds into one.⁶⁹

The house design in the next chapter emulates this technique of linking the house to a holistic cultural system of skills and values. Spaces have been designed to foster both traditional culture and the incorporation of industrially manufactured goods as well as new cultural techniques and skills.

3.3 The Qallunaat Designer

The integrated, holistic system of values, skills and spiritual beliefs described in the previous section poses a point of difficulty for a white male from Toronto. In chapter 1 I discussed my reluctance to propose “solutions” to current housing issues in the North. This is in large part (as I mentioned) because of the extensive damage that has been done by well intentioned Qallunaat trying to be helpful in

66 Ibid., 8.

67 Jarich Oosten and Barbara Hellen Miller, eds., *Traditions, Traps and Trends: Transfer of Knowledge in Arctic Regions* (Edmonton: University of Alberta Press, 2018), ix.

68 Oetelaar, Anderson, and Dawson, “The Hearth, the Home and the Homeland,” 223.

69 Ibid., 223, 234.



A powerful caution about the role of the southern designer in the north.

Drawing: Kananginak Pootoogook, "The First Tourist," 1992. Lithograph on woven paper, 57 x 71 cm, <https://www.historymuseum.ca/capedorsetprints/themes/history.php>.

the North; but it is also because I must acknowledge that there are elements of Inuit culture that I might never be able to understand and certainly not speak to. Thankfully, as Chelsea Vowel explains in her essay *Feel the Inukness*,⁷⁰ Inuit have successfully mastered modern technology and media to be able to tell their own beautiful,

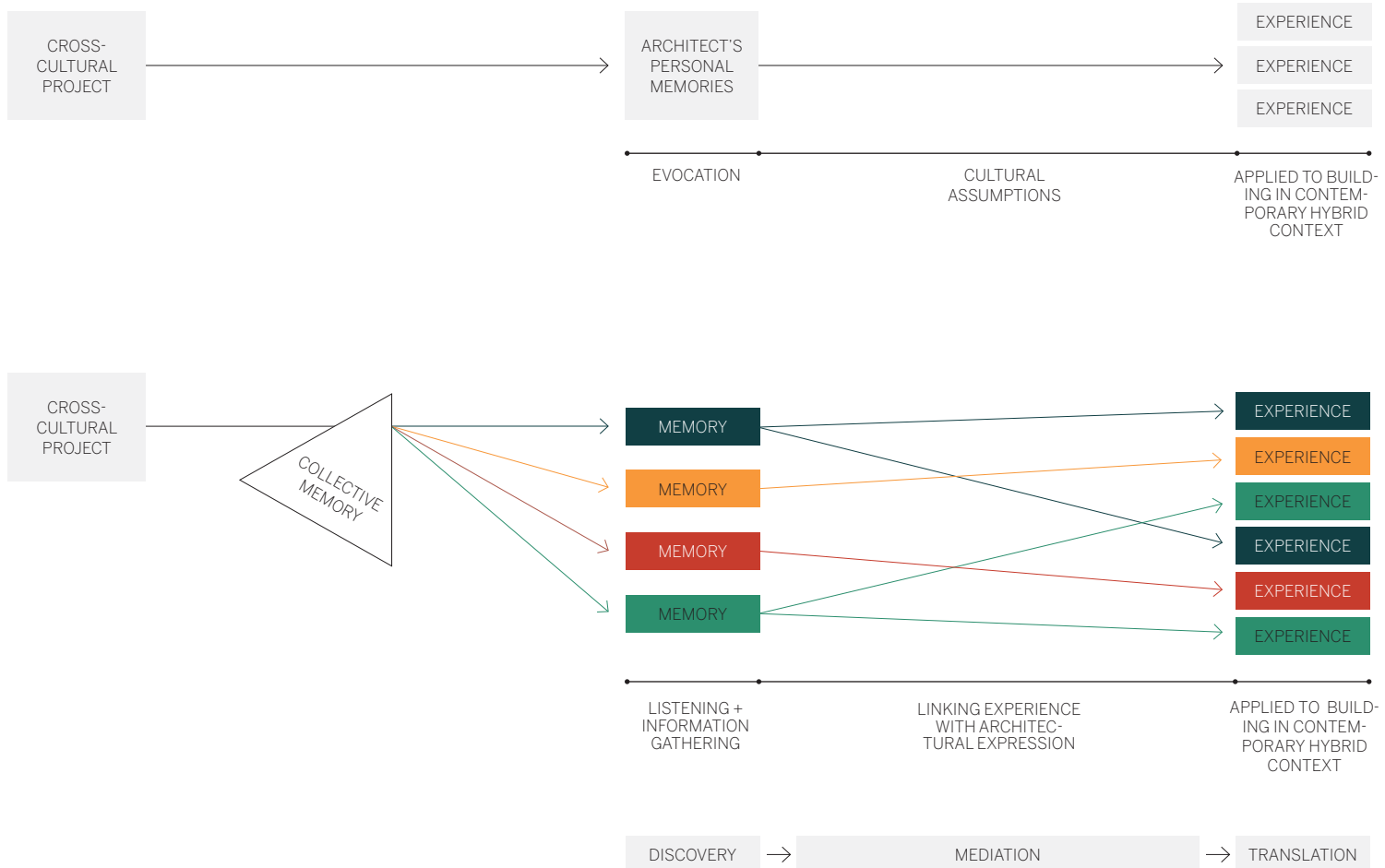
⁷⁰ Chelsea Vowel, *Indigenous Writes: A Guide to First Nations, Métis and Inuit Issues in Canada* (Winnipeg: Highwater Press, 2016), 56.

chilling, and hilarious stories.

There have been many paralysing moments through this work in which I wondered about my place in it. Certainly I believe that Inuit communities need Inuit designers, and the more control Inuit have of their own housing situation the better.

This thesis has provided an opportunity to consider the role of an architect in cross cultural projects in general. I started thinking about cultural memory as a way to mediate the development of architecture. Especially in the application of poetic, or phenomenological experience –experiences based on links between sensation and memory– architects often default to their own personal memories. Bachelard has noted the prevalence of our childhood homes in our appreciation of space.⁷¹ When this occurs, the resulting project may continue to be deeply meaningful to the architect or to those with a similar upbringing or life experience, but what about cases where the architect is commissioned to design for those with a different cultural background or worldview? Collective cultural memory may provide ways for the architect to mediate the expression of a building to suit the culture of the client. I have attempted to model the difference collective memory might make in the interpretation of a project (see flowchart). The chart traces two possible paths. In the first an architect's personal memories influence the articulation of form in a cross-cultural project. The resulting building may seem successful to the architect as it embodies their own particular experience. The next path considers how cultural memory could present lived experiences and shared cultural memories distinct from those of the architect. Working with the carriers of cultural memory, the architect might then be able to mediate the translation of memory into built form that fosters the culture of the user.

71 Gaston Bachelard, *The Poetics of Space* (Boston: Beacon Press, 1994), 3.

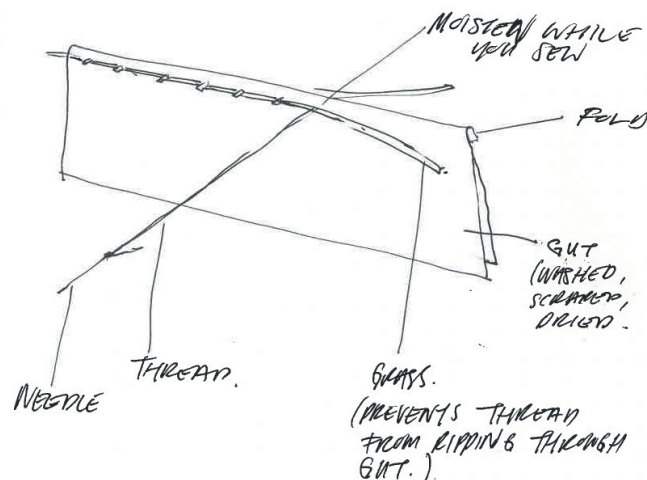


Architects often approach projects with their own memories of meaningful experiences in built form, assuming others will live the same way. Collective cultural memory proposes alternate ideas about dwelling and links between space and experience beyond the architect's personal evocations.

Chapter 4: Winter House for an Inuvialuit Family

4.1 The Gut Lamp

While reading about pre-contact Inuit and Inuvialuit technology I discovered descriptions of panels made of the gut (intestines) of seals and whales. These translucent, watertight panels were used to bring light into sod houses, and sewn together to make highly effective rain parkas. I was struck by the elegance of this technology. I had never seen examples of gut parkas or windows in the Northwest Territories and began a search for detailed descriptions of the technique. In a *Life Cycle Analysis* elective course I had the opportunity to delve further, developing an architectural specification for the fabrication, installation, and maintenance of a gut window panel in a pre-contact sod house (see table). Shoehorning this pre-contact technique into the format of a contemporary architectural specification was strange and revealing in several ways.



Sewing together panels of gut. Observed from Smithsonian Arctic Studies Center Alaska, "Sewing Gut (13 of 13): Sewing a Model Gut Window." YouTube video. 10:36, December 19, 2018, <https://tinyurl.com/ycu4tk2x>.

Specification: Inuvialuit Gut Window

1. GENERAL

1.1. Description:

The gut window is a translucent panel of sea mammal intestine that was installed to traditional Inuvialuit (Inuit) sod houses to provide a weatherproof vent covering that would allow light to enter into the interior of the dwelling. It consisted of a combination of locally harvested animal and plant products (listed in part 2.), prepared in advance of the assembly of the gut window (see part 3.).

1.2. Inspection instruction

Inspect daily for general wear. Greenwood rod can be used to shake snow off of the window. This is a good moment to inspect the window for holes, rips, or damaged seams.

1.3. Service life

One winter, but often able to last longer if not physically damaged..

1.4. End of life disposal:

The gut window is made entirely of locally sourced animal and plant products. It is, therefore, fully biodegradable and can be disposed of by burying at the site of dwelling when the dwelling is vacated. Alternately, if some of the panels of the gut window are in good condition, it may be used for containing and transporting small items.

1.5. Maintenance

Damage to the window can be repaired with extra gut sheets sewn into the window.

2. PRODUCTS

2.1. Gut

Gut can be harvested from a beluga whale or bearded seal. Beluga whale gut is more durable and therefore preferable if available.

2.2. Sinew

Sinew to be sourced from the backstrap of a caribou.

2.3. Sea grass

Grass to be harvested in the fall when it is starting to turn brown, or in the spring from areas near the shore. Grass near the sea is preferred to freshwater sources as it is stronger, thicker, and less brittle.

2.4. Needle

Needle fashioned from bone fragments.

2.5. Greenwood rod

A greenwood rod is used as an adjustable support for the window. It should be cut from a live willow and be a diameter that can be bent by hand yet sturdy enough to support the window against wind or snow.

3. EXECUTION

3.1. Preparation of the gut:

- Remove intestine (gut) from animal, squeeze out contents with hands.
- First rinse: fill with ice-cold water (to remove scent) and work it through the length of the gut with your hands. Repeat.
- Use finger nails, spoon, or walrus-tusk scraper to remove the outer membrane of the intestine.
- Second rinse: tie-off one end of the intestine and fill completely with water. Use your hands to gently squeeze water out of untied end. Repeat until water runs clean.
- Turn the intestine inside out by turning the end over on itself and inserting a smooth pebble into the overturned end and pulling the pebble through the length of the intestine.
- Carefully continue scraping inside until smooth.
- Soak the intestine in a bowl of snow or cold river-water and change water daily until the remaining odour is gone.
- Insert a small tube of bone or wood into the untied end of the intestine segment and inflate it like a balloon and tie-off untied end.
- Tie one end to a secure point with thread or sinew, gently pull the intestine out into a straight line and secure the second end and allow the intestine to dry.
- Use outstretched arms and rotate your body side to side as you walk forward to coil the inflated intestine.

3.2. Preparation of the sinew:

- The membrane is separated from the meat, scraped, dried and split into thread.

3.3. Preparation of the sea grass:

- Grass is to be braided together with strips of fabric in 3/4" bundles and hung to dry protected from wet weather.
- Split each strand of grass in two with thumbnail.
- Wet the ends of two split strands with your mouth and tie them together in an overhand knot.

3.4. Cutting and sewing the gut:

- Cut along length of intestine and press flat.
- Cut length into segments, matching the desired width of the window, allowing room for stones on each side to hold the window fabric down to the structure of the dwelling.
- Stack two pieces of gut on top of one another and fold make a 1/2" fold along the long edge.
- Hold the knotted double-strand of grass on the fold, with one strand on each side and the knot against the short edge of the gut.
- Sew the pieces of gut together with sinew, using the grass as reinforcement for each stitch.
- Continue stitching gut panels together to complete the window.

3.5. Installation:

- The sewn gut window is spread across the dwelling window opening, and secured in place by in a split-wood frame.
- A greenwood rod is bent into the window opening with the convex side of the bend facing up to support the centre of the window and prevent it from sagging.

The purpose of the architectural specification is to clarify methods of assembly, installation and maintenance according to the professional judgement of architects and engineers, in addition to functioning as a legal obligation for the contractor. This assumes an industrialized building culture with any number of materials, assemblies, and maintenance regimes available. The gut window, meanwhile, is a technology born out of deep cultural ties to a very specific set of resources belonging to a specific set of places. Writing the specification also revealed the difficulties of explaining the techniques associated with fabrication and assembly of the materials, once gathered. This is a technology –a set of skills– that was passed down through generations via the long apprenticeships of elder and child. None of this is easily or sufficiently communicated in a technical document. And so the specification of the gut window revealed, once again, the collision of two worlds and worldviews.

A series of recent films released online by the Smithsonian Arctic Studies Centre feature elders from Alaska demonstrating many of the techniques involved in making gut windows and parkas.⁷² These films informed the writing of the specification and inspired me to try the techniques myself. The design and construction of a lamp served as a way to adapt gut panel techniques in a new way and to test ideas about hybrid objects and buildings. As recommended by the Yup'ik and Iñupiaq-Athabascan elders in the films, hog casing was used in lieu of seal or whale intestine. The gut was washed and soaked in cold water, inflated, stretched out and left to dry. Later it was cut into strips and sewn together with waxed thread to replace the traditional sinew and sea grass. A wooden base holds an IKEA LED lamp kit and an armature made from brass tubing that was annealed, bent and machined to allow for horizontal tubes to slide up and down to tension the shade. The lamp combines three

72 Smithsonian Arctic Studies Center Alaska, "Sewing Gut (13 of 13): Sewing a Model Gut Window." YouTube video. 10:36, December 19, 2018, <https://tinyurl.com/ycu4tk2x>.



Seal gut parka, c. 1860s Alaska. Parkas like these were very effective and prized by Inuit hunters and foreign whaling crews alike.

Photograph: Luc Demers, "Raincoat made of seal intestines." Peary-MacMillan Arctic Museum, Brunswick, Maine.



01
Remove gut/intestine from animal. Soak in ice-cold water for several days to remove odour.



02
Insert a funnel into one end of the gut and flush with water until water runs clear. Use thumbnails or small scraping tool to remove excess membrane from the gut, inside and out.



03
Tie off one end of the gut and inflate before tying off second end. Stretch length of gut between stakes without allowing it to touch the ground/floor. Wait a day or two until gut is dry.



04
Cut along length of gut to create a single flat panel.



05
Divide into a series of panels.



06
Sew panels together with sinew, using grass harvested from salt water as reinforcement.

Stages in the process of preparing gut panels that were sewn together to make the lamp's shade.



The making of a table lamp with a shade made of dried intestine served as a test for the design approach.

components representing the nature of contemporary inhabitation in the North: the highly developed local pre-contact technology (the sewn-gut panel), globally mass produced goods and electronics (the LED lamp), and imported materials that can be modified and adapted by the work of local craftspeople (the brass armature).

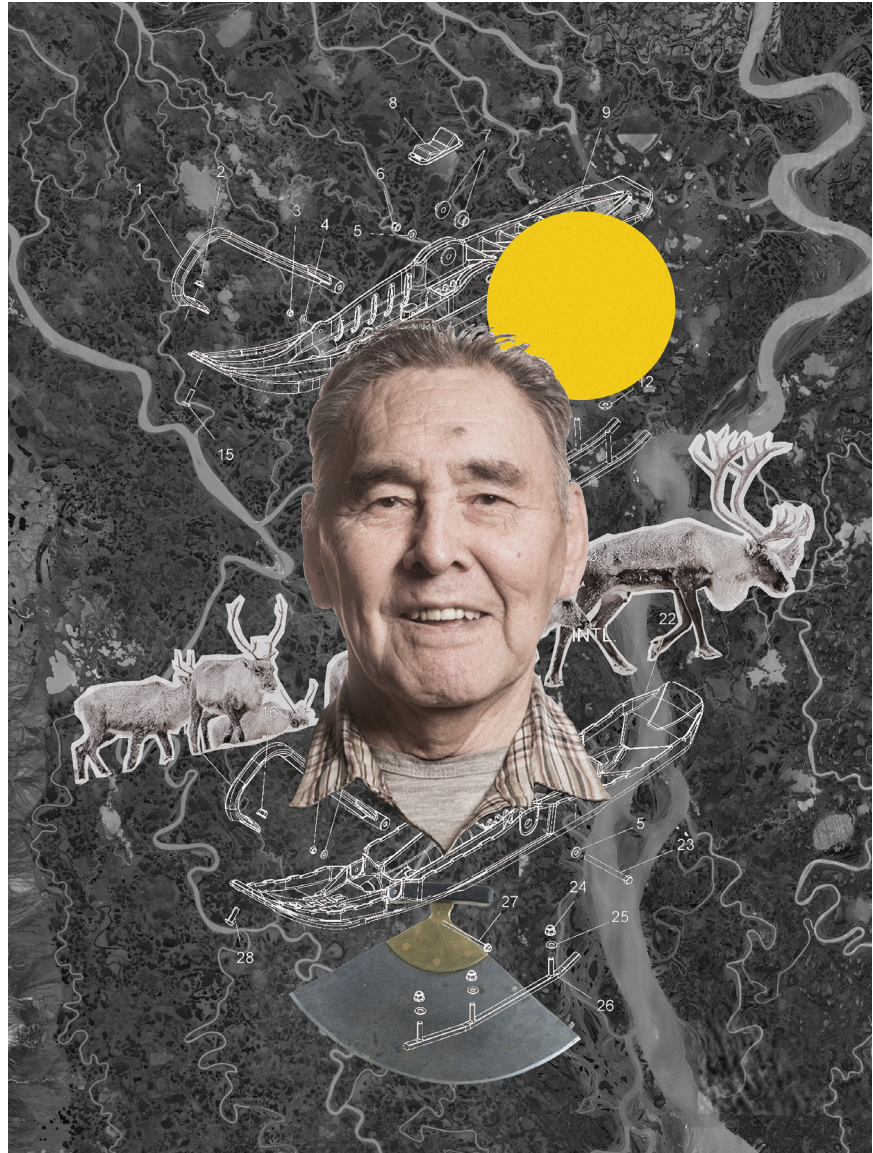
4.2 The Winter House

The design of the winter house began with a pair of collages, each featuring an imagined resident of Aklavik. The first collage takes the perspective of an elder and hunter. His concerns and interests centre around life out on the land, trapping, or hunting caribou. However self-sufficiency out on the land now must include knowledge of industrially produced machinery like snowmobiles, connecting the hunter to a global system of trade and manufacture.

The second collage, an assignment to produce a “wish image” related to the project, imagines a house in the dreams of a young Inuvialuit girl. The house image takes an animal form, not unlike Inuvialuit legends of living inside whales. Characters from prints by Inuit artist Helen Kalvak share space with the girl. This image expresses the desire to design a house that would foster storytelling and dreaming.

These collages were an important tool for developing the priorities of the project before making design decisions. They forced me to immediately consider the perspective of an Aklavik resident, even an imagined resident.

Early design work centred around the idea of connecting the design of a new house to Inuvialuit collective cultural memory through phenomenology, or a kind of poetic link. I was particularly interested in how the sensory experience of the house might directly echo the experience of pre-contact houses. A basswood model representing

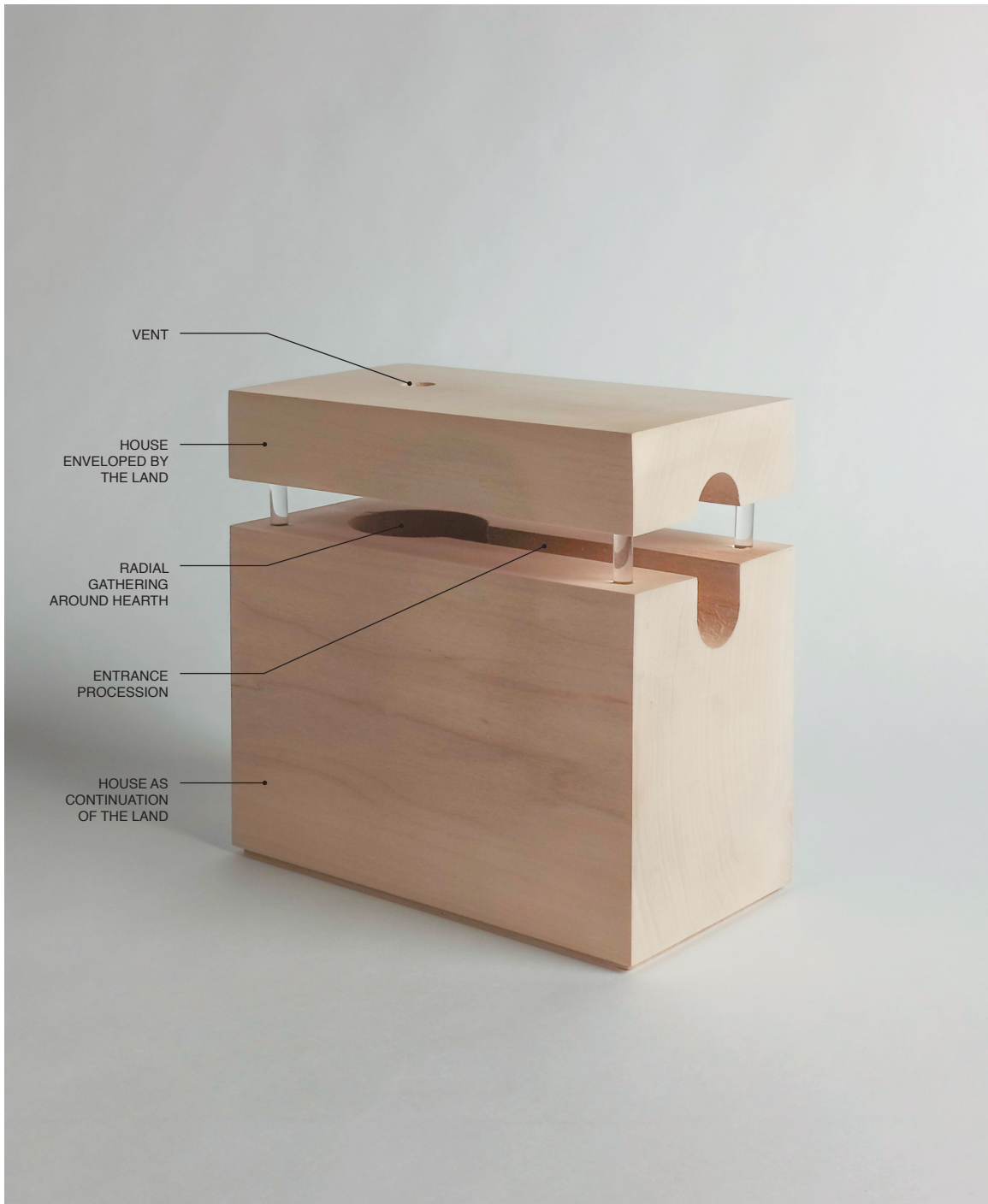


An early collage aiming to represent the concerns of a resident of Aklavik, in which his ties are to the land, caribou, weather, traditional culture, but also to the wage economy and industrial production.

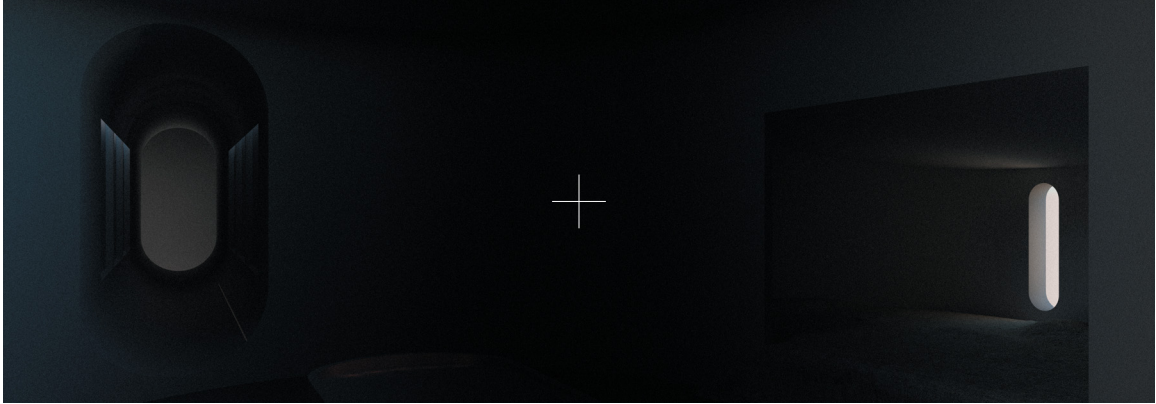
an abstracted entrance tunnel and central room formed an initial attempt to recreate the feeling of a procession and destination common to traditional Inuvialuit sod houses. A long, oval entry tunnel or corridor leads to a communal room oriented toward a hearth or lamp in the centre. A hole in the roof allows light to enter, or smoke to escape. Through the model I sought to convey the importance of connection to the ground and the sensation of wood, sod, and



A collage imagining the house in the dreams of a young Inuvialuit girl.



Model of entry sequence and room (experiential). Basswood and acrylic, 7"x4"x7".



A test drawing to engage peripheral vision. The original print was two feet wide and mounted to a concave backing. Viewers were meant to stare at the crosshairs and observe their surroundings passively.

snow overhead.

Continuing to search for ways to engage memory through sensory phenomena and the abstraction of form, a rendering of another entry and room sequence was printed to two-feet-wide and mounted on a curved backing to create a panorama. The goal was to have the viewer stare at the crosshairs and engage their peripheral vision, (the area of sight our brains most closely associate with memory⁷³). I determined that the complexity of this line of inquiry demanded an expertise (and test population) that was outside the scope of this project. Additionally, reading further about Inuvialuit dwelling norms made me realize that visual stimulus alone would not be enough to link the house to collective Inuvialuit cultural memory.

At this moment I considered the possibility of a house embedded into the earth and covered in sod that might not appear much different from pre-contact houses when viewed from the exterior. A

⁷³ Anton Ehrenweig, *The Hidden Order of Art* (Oakland: University of California Press), 284, in Juhani Pallasmaa, "Emotion and Peripheral Perception in Architectural Experience" *Lebenswelt. Aesthetics and philosophy of experience*, 4, no.1 (2014): 244.



Model/collage. This image envisioned a lantern element that protrudes from the top of a subterranean house to indicate inhabitation and to guide residents home in the dark or stormy weather.



Solar panels and casement windows collaged onto a photograph of the recreation of a pre-contact Inuvialuit sod house in Tuktoyaktuk.

collage of a window and a solar panel overlaid on a photograph of the recreated sod house in Tuktoyaktuk explored this approach. Ultimately, flood conditions in Aklavik and the continued melting of permafrost across the Arctic suggested that a subterranean house would likely be extremely impractical and perhaps more suggestive of the formal expression of the pre-contact sod house than its logic.

As the work progressed I found that the sensory experience of the pre-contact house was linked to a distinctly Inuit perspective of dwelling which continues to influence Inuit use of the house made evident through the tactical modification of government houses by Inuit families (as discussed in chapters 2 and 3). This perspective spreads the act of dwelling out into a series of buildings and areas including the winter house, summer fishing/whaling camp, and a

series of zones, trails and structures related to hunting and fishing. The winter house in particular serves as a place that facilitates communal family life and the transfer of culture through practical skills and storytelling.

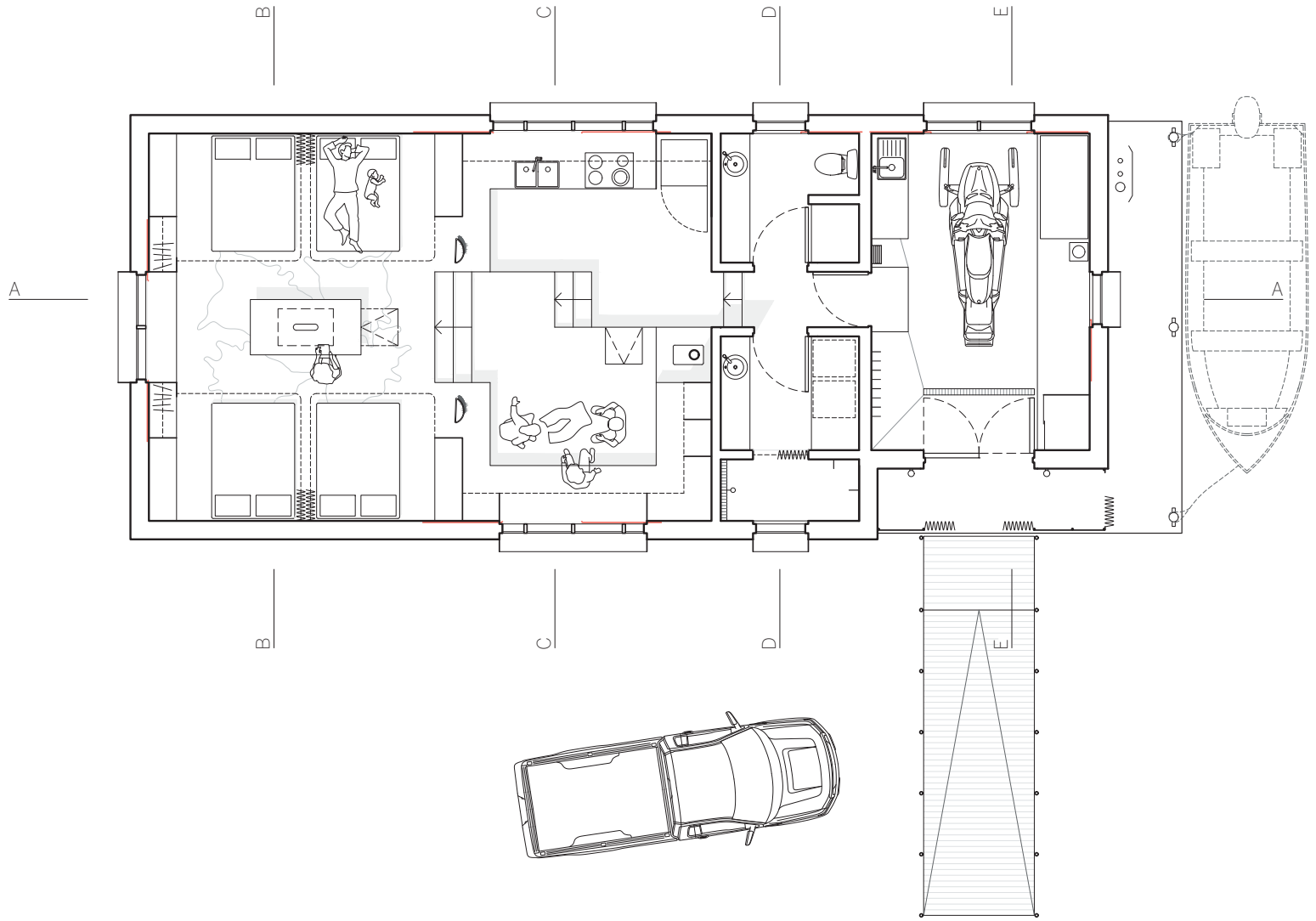
The resultant design is based on five major points of observation:

1. The dwelling as a continuum of buildings and places
2. The relationship between program and interior climate zones
3. A focus on communal family living
4. Transmission of culture through storytelling and the practice of skills
5. Adaptation to climate

Entering the house we pass through a removable canvas vestibule on the wharf/porch and into a workshop/storage room for repairing snowmobiles and ATVs and preparing country food. A concrete floor with drain pan provides a durable, washable surface. There is a large chest freezer and a portable hot plate for boiling large batches of caribou meat. This area is colder than the rest of the house, which is ideal for storing hunting clothing made from animal hides.

Continuing to move into the house, an area for washing and bathing provides a buffer zone between the workshop area and the rest of the living space. The washing/bathing area has two sinks in separate areas, and separates w/c, shower, and laundry to accommodate busy family life.

Moving further up and into the heart of the house we find a room for cooking, making and socializing. This space is subdivided by floor height rather than interior partitions. On the right an area with 3 foot counters provides space for standard appliances and working while standing. A raised platform on the left serves as a place to sit on the floor or a low bench while hanging out, preparing and eating country food, or sewing garments. The raised platform also



Floor plan

FLOOR PLAN

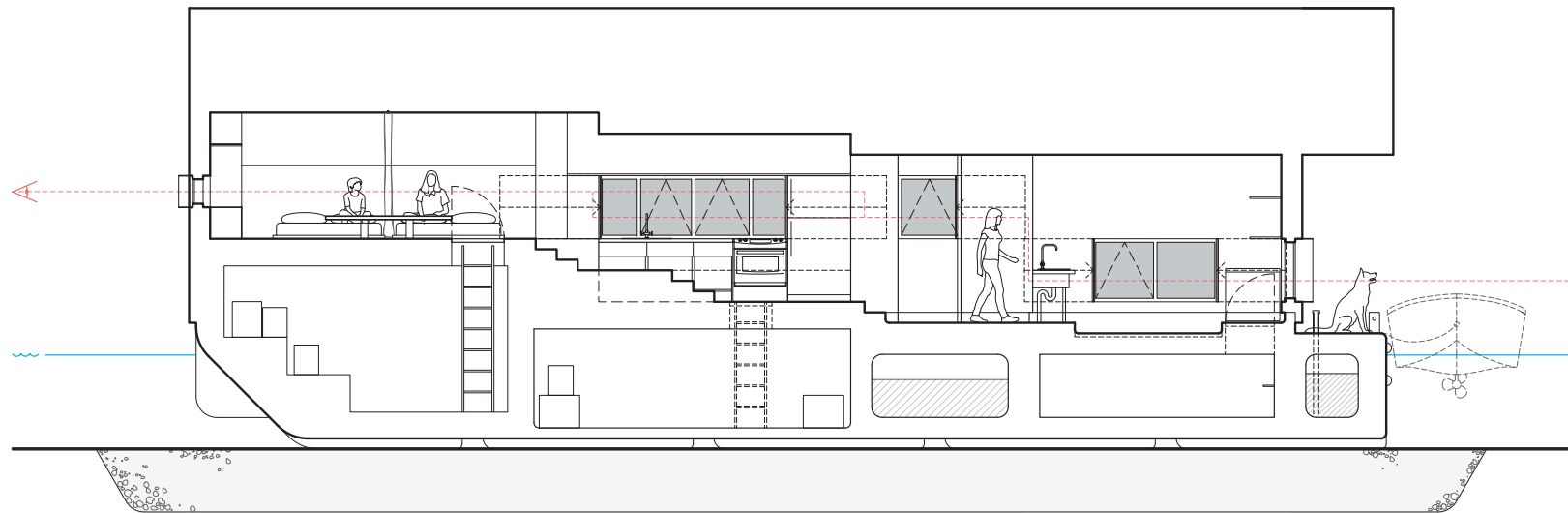
0 FT 10



△ PREDOMINANT EYE-LEVEL

~ BUOYANCY POINT WATERLINE

SECTION - AA
TRANSVERSE



TEMPERATURE GRADIENT

WARM

COOL

Building section

0 FT 10





Model 1/2"=1' (N.T.S. in photograph) + collage. The winter house as a place to tell stories and pass on practical skills. Whenever possible, living areas are segmented by floor height rather than walls to accommodate a variety of uses and a feeling of togetherness for tight-knit families.

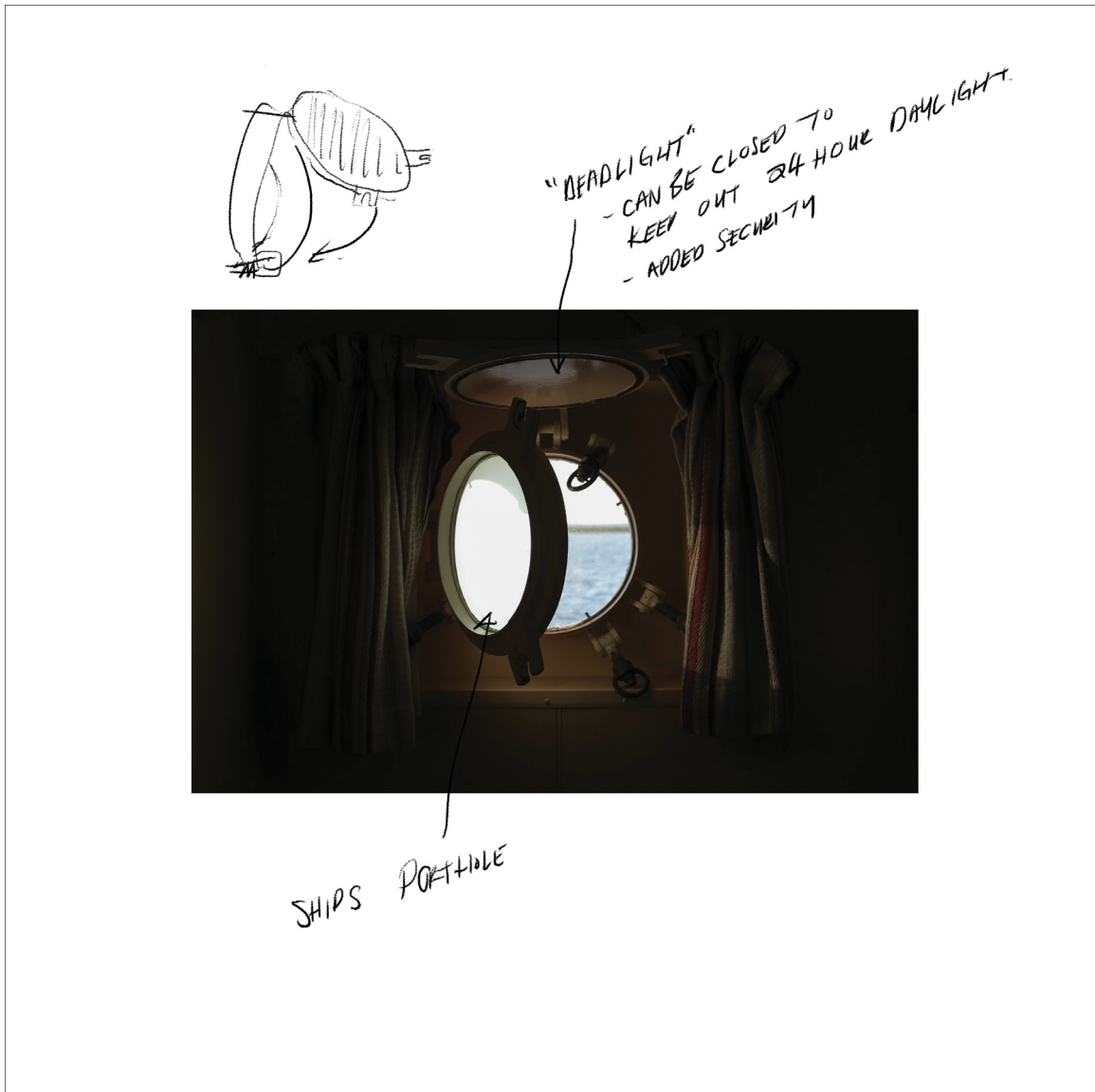
allows those sitting or working on the floor to share the same eye level as someone standing at the sink. This means that a person sitting on the raised floor platform can see out the window just as easily as someone standing. My goal in designing this space was to provide an area that encourages the use of the floor as a space for working and gathering on equal terms with work done standing at a counter as it is done in Euro-Canadian houses. Inuit families have expressed that government housing often lacks integrated storage. Here open shelving is built into the wall providing a place to store items in bins and baskets, or display knick-knacks or family photos.

A sleeping platform at the end of the house emulates sleeping arrangements in pre-contact houses and follows the preference of many contemporary Inuit families for sleeping and socializing together in one room as a family. Curtains on tracks allow the space to be divided when desired. A low table on the floor is a place for cups of tea, stories, or homework. This is the warmest part of the house.

Two soapstone qulliq, or seal blubber lamps abut the transition between the sleeping platform and the cooking and making area where they can be easily tended from bed or while working. Qulliq are the focal point of the house and would traditionally follow a family from house to house.

Throughout the house windows heights have been set to provide views while kneeling or sitting on the floor. Sliding interior wood shutters allow relief from 24 hour daylight in summer, and provide an extra measure of security when the family is away from the house, not unlike the deadlights that cover portholes in ships in the north (see image).

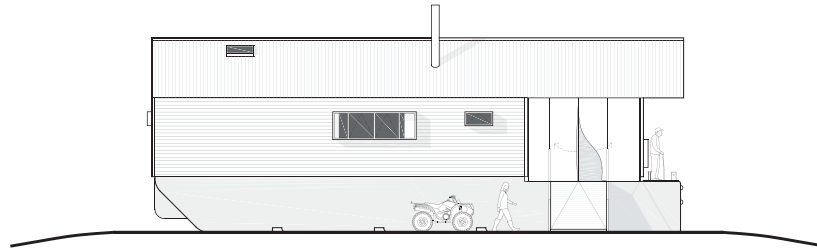
In response to spring floods in Aklavik, and the melting of permafrost due to the warming of the arctic climate, the house has been set on



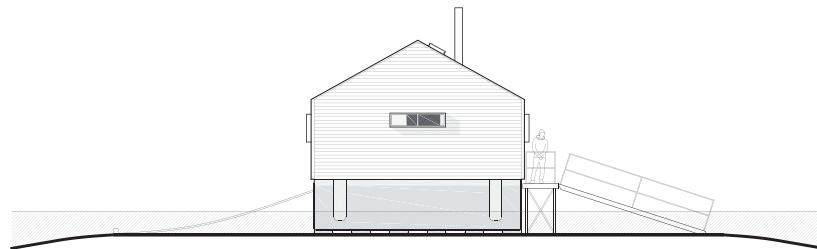
The porthole of a Coast Guard navaid's tender on the Mackenzie River. Deadlight panels can be locked down for security and to keep out twenty-four hour daylight during the arctic summer.

a floatable concrete barge foundation. Most houses in Aklavik have been built on stilts to avoid warming and melting the permafrost and to allow for small floods without damage to the house itself. This can create a feeling of disconnection with the land and can only deal with small floods (see screen captures of 2006 floods in Chapter 1). The inclusion of the concrete barge allows the house to adapt to flooding of any level by floating once water reaches four feet in

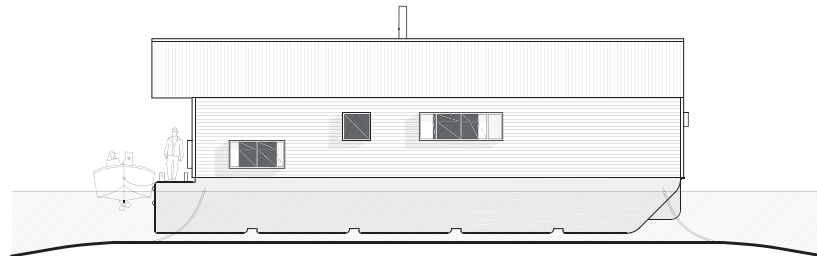
ELEVATION - SOUTH
- DRY GROUND -



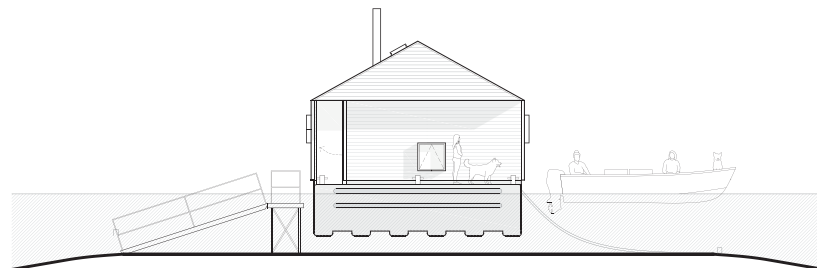
ELEVATION - WEST
- RISING WATERS -



ELEVATION - NORTH
- BUOYANCY POINT -



ELEVATION - EAST
- FLOATING WHARF -



Elevations illustrate the house in rising flood waters.

0 FT 20

depth (see elevation drawings). A covered porch becomes a wharf area that allows small boats to tie up along-side in flood conditions.

Concrete presents an interesting option for life in the North. If suitable local aggregate material can be sourced only cement would need to be shipped to northern communities from the South. Along these lines, Havelka has developed a prototype for a domed concrete house made by spraying concrete to the inside of an inflated textile form.⁷⁴

This barge could be manufactured at the shipyard in Hay River, on Great Slave Lake (with highway access to Edmonton see maps in chapter 1) and pushed down river by shallow-draft tug (like the famous Inuvik mosque, see image). The concrete barge provides durable tanks for water, sewage, and heating oil, in a place with no in-ground infrastructure, as well as a cold cellar and an insulated storage area. Northern communities like Aklavik with no summer roads regularly receive fuel and construction material and vehicles by barge. This idea of a floatable barge foundation works with established systems of trade and transport on the Mackenzie, and responds to increasing danger of damage due to flooding and melting permafrost by floating in high water. The proposal also envisions the construction of the barge foundation and the house as two distinct operations, the barge construction occurring in Hay River to take advantage of existing shipyard and synchrolift facilities, and the construction of the light-frame house itself in Aklavik, to allow local agency and customization in its construction.

74 Cabin Culture, "Construction of the Monolithic Protosphere Dome," YouTube video, 4:31. June 9, 2015. <https://www.youtube.com/watch?v=NrN1bCRzdUI>.



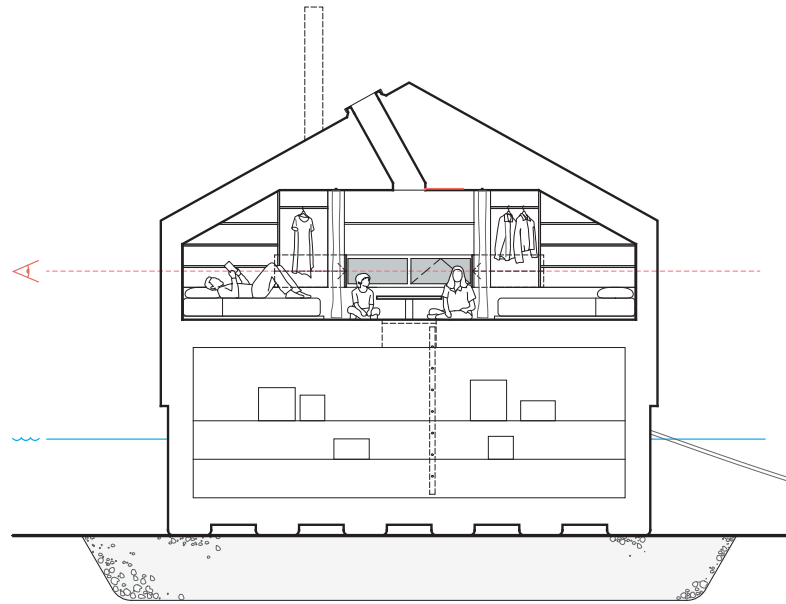
Shallow-draft tugs ply the waters of the Mackenzie River from Hay River to Tuktoyaktuk, delivering barges full of fuel, supplies, and in this case a mosque built in Winnipeg and bound for Inuvik.

Photograph: Niluffer Rahman, "The Midnight Mosque floats down the Mackenzie on its last barge north in 2010," *Northern Journal*, (August 12, 2013).

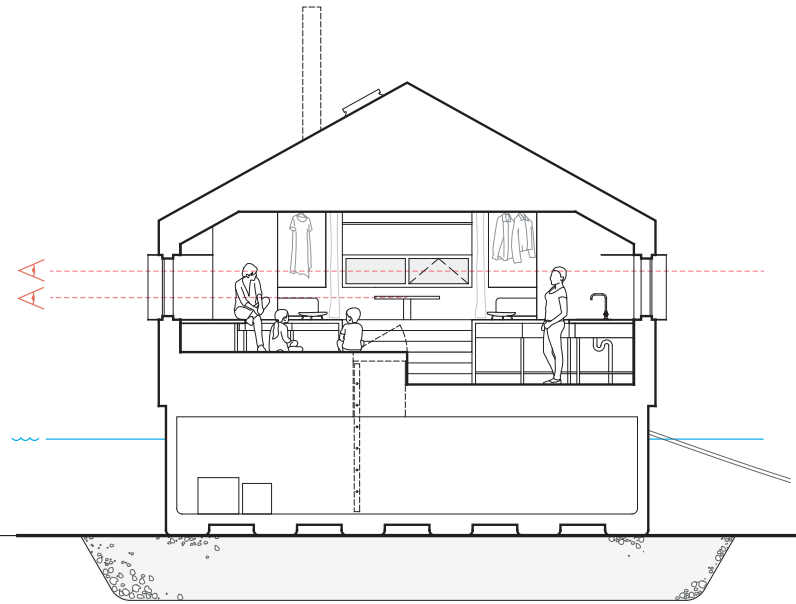
A PREDOMINANT EYE-LEVEL

BUOYANCY POINT WATERLINE

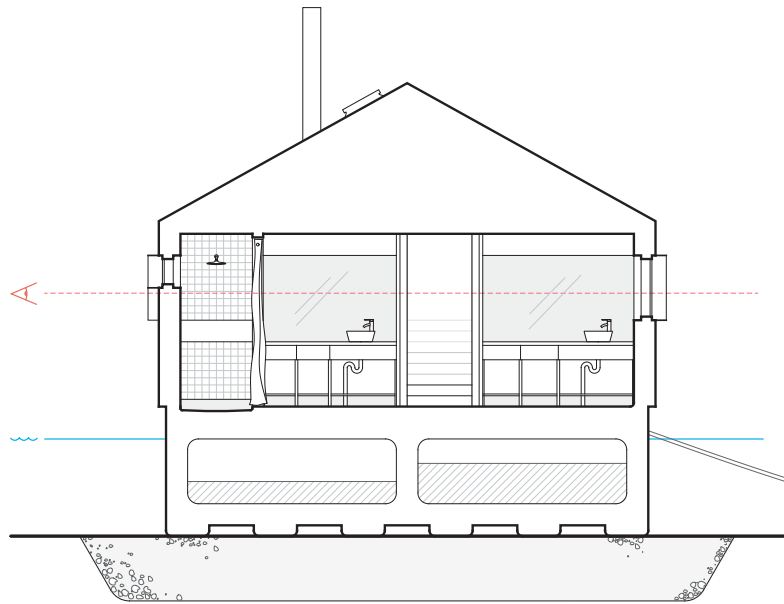
SECTION - BB
SLEEPING / STORYTELLING



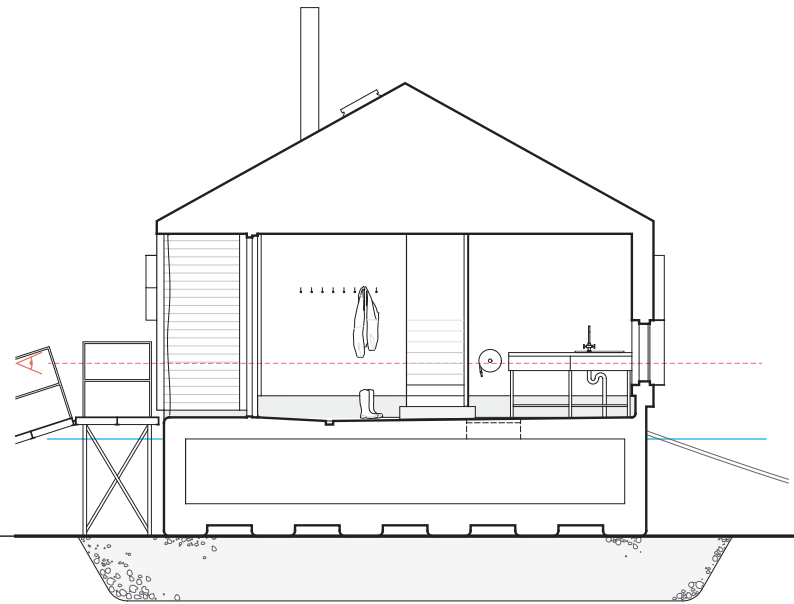
SECTION - CC
COOKING / MAKING / GATHERING

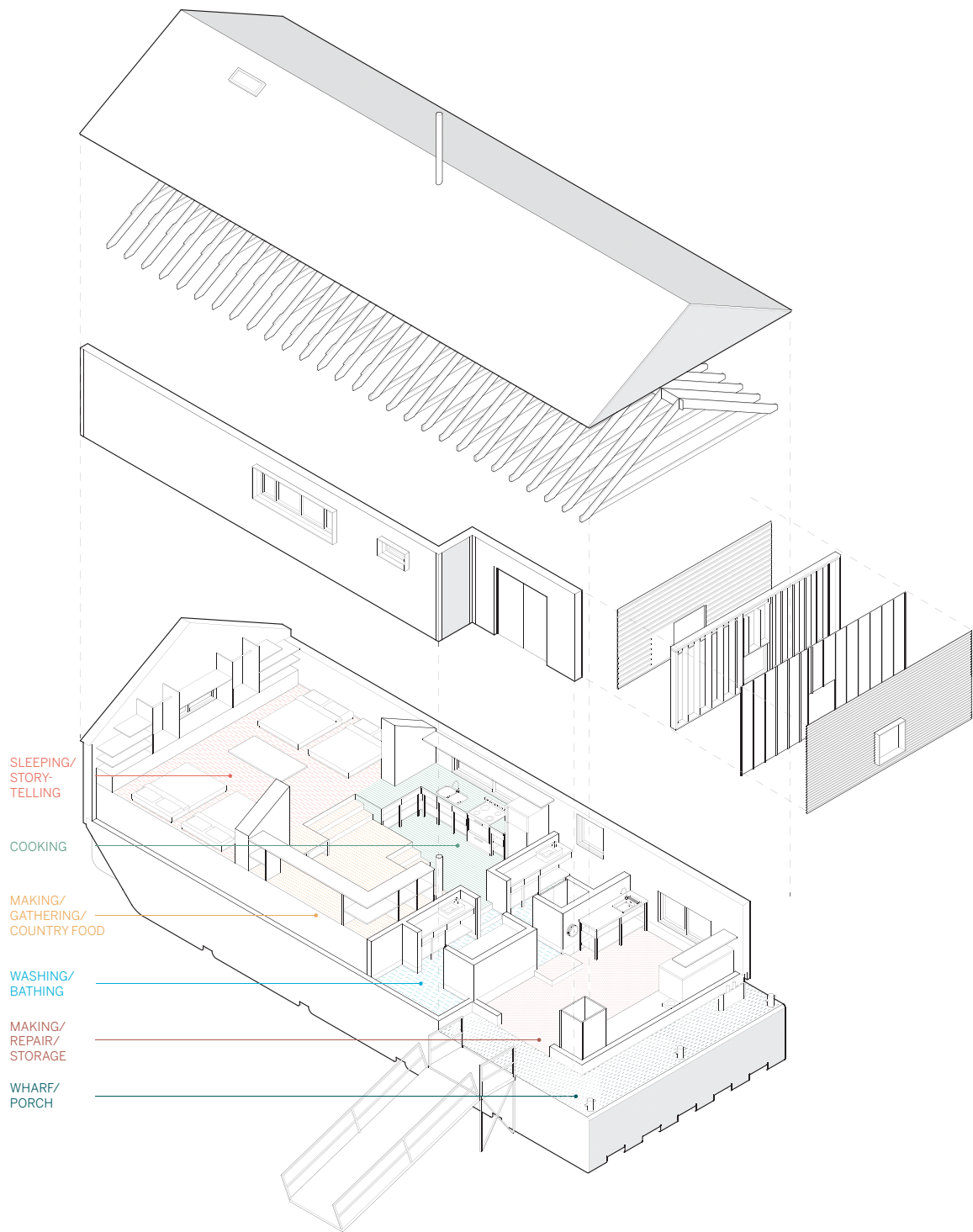


SECTION - DD
WASHING / BATHING



SECTION - EE
MAKING / REPAIR / STORAGE





Program and assembly axonometric



Model: $1/8"=1'$ (N.T.S. in photograph) illustrating the floating concrete foundation and the light-frame enclosure built on top once the foundation arrives on site.

Chapter 5: Conclusion

This thesis, the design of a winter house for an Inuvialuit family, has considered the role of the house in the transmission of culture in a contemporary Inuit society. The design of the house attempts to support a hybrid life in which residents draw sustenance from cultural practices on the land while participating in the global wage economy.

A history of forced settlement, misguided government housing projects, and the legacy of residential schools reduced the ability of Inuit peoples to connect and identify with their culture. This project does not attempt to “fix” this situation, but rather to learn from it to propose ideas for a family house that can support traditional and contemporary cultural practices.

Particular attention has been paid to the role of the house in the intergenerational transmission of culture. The winter house, part of a larger network of dwelling places spread out on the land, is particularly important in the nurturing of shared Inuit cultural values, skills and traditions.

The articulation of house-form has drawn lessons from anthropology, Inuit art, and my own experience in the north. Spaces inside the house have been designed to foster the continuation and evolution of cultural skills (such as preparing country food meals, making clothing, and repairing equipment). Sleeping, eating, cooking and social spaces have been integrated with minimal partitions to foster communal family living.

A floatable concrete foundation system was proposed as a means of mitigating the effects of flooding and melting permafrost in the Mackenzie river delta due to the effects of climate change. Such a

system might also take advantage of the existing infrastructure for barge transport on the Mackenzie River, manufacturing opportunities in Hay River, and could reduce reliance on Southern goods by mixing imported Portland cement with local aggregate.

While my early efforts to spend more time in the community of Aklavik interviewing and meeting with local residents have met administrative hurdles, I have hope that this thesis might form the starting point for a housing workshop in Aklavik or neighboring communities where residents could develop their own ideas about housing modifications and the design of new housing models that support the Inuvialuit perspective of dwelling and the realities of everyday life in the western Arctic.

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