
HOME *for a* NEW LIVELIHOOD

BUILDING FOR A FOREST & FRESHWATER
FOOD FORAGING COMMUNITY

by

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in

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For Mowgli.

0.1 ABSTRACT

Thunder Bay, with a population of 109,000 people is the largest community in Northwestern Ontario, Canada. The Ojibwa were the first inhabitants of the area who led a hunter-gatherer existence and developed many technologies that aided their survival in the extremes of the environment. The hunting and fishing activities of the past have been adopted by residents of Thunder Bay as recreational activities. How can the livelihood of the once self-sufficient hunter-gatherers of the area be reexamined for today's society? This thesis explores the parameters of food security in Thunder Bay and how architecture can support a livelihood based on obtaining forest and freshwater food.

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MAP OF ONTARIO



HUDSON BAY
BAIE D'HUDSON

MANITOBA

JAMES BAY
BAIE JAMES

QUEBEC
QUÉBEC

Kenora

Thunder
Bay

Sault Ste.
Marie

Sudbury

Ottawa

Toronto



UNITED STATES OF AMERICA
ÉTATS-UNIS D'AMÉRIQUE

0.2 INTRODUCTION

[1] **hunter-gatherer** : a member of a culture in which people hunt animals and look for plants to eat instead of growing crops and raising animals (Merriam-Webster)

[2] **live-li-hood** : means of support or subsistence (Merriam-Webster)

[3] **Ojib-wa** : a member of an American Indian people of the region around Lake Superior and westward (Merriam-Webster)

Thunder Bay, Ontario, Canada has been a setting for **hunter-gatherers** [1] for over 9000 years. Although the landscape, cultures, and technologies have changed, hunting, fishing, and gathering wild edibles still remains a favourite pastime for a large portion of the population. How did the traditional **livelihood** [2] of this area transition into a recreational activity? How can we promote a re-engagement with the natural surroundings by suggesting an alternative livelihood? How can we redefine the homes we live in, the communities we are part of and the way we obtain our food?

It is important to learn and draw from past and present culture and society if we are to propose something new for a sustainable future. This thesis will attempt to understand and outline the traditional lifestyle of the local **Ojibwa** [3] inhabitants, the history of resource extraction in the area, the transition of activities from livelihood to recreation, and finally, the motives and initiatives that support food foraging communities.

This area in Northwestern Ontario often experiences winters that last from November to April. This 6-month winter allows for avid

[4] **Ice fishing shack** : an ice shanty (also called an ice shack, ice house, fishing shanty, fish house, fish coop, bobhouse, ice hut, or darkhouse) is a portable shed placed on a frozen lake to provide shelter during ice fishing. They can be as small and cheap as a plastic tarp draped over a frame of two-by-fours, or as expensive as a small cabin with heat, bunks, electricity and cooking facilities.
(Wikipedia)



Figure 1. Ice Shack at Lac Des Mille Lacs, Ontario.

anglers to camp out in **ice fishing shacks**

[4], shanties, or huts. These tiny buildings have everything necessary to survive out on the ice for weeks, even months at a time. When the ice begins to thaw in spring, the small huts, built on sleds, are towed to the shore where they remain unoccupied from April until October. Is this not a missed opportunity in the summer months?

Can we offer a proposal for a migrating home that is occupied year round and functions to support inhabitants who retrieve all their food from the seasonally diverse surrounding environment? By combining ideas from recreational shelters, intentional and honest living, and sustainable and self-sufficient lifestyles, this architecture could provide dwellers with a new outlook on seasonality, economic living, and a renewed sense of purpose by living on, respecting, and working with the land and its resources.



PART 1

Thunder Bay, Ontario

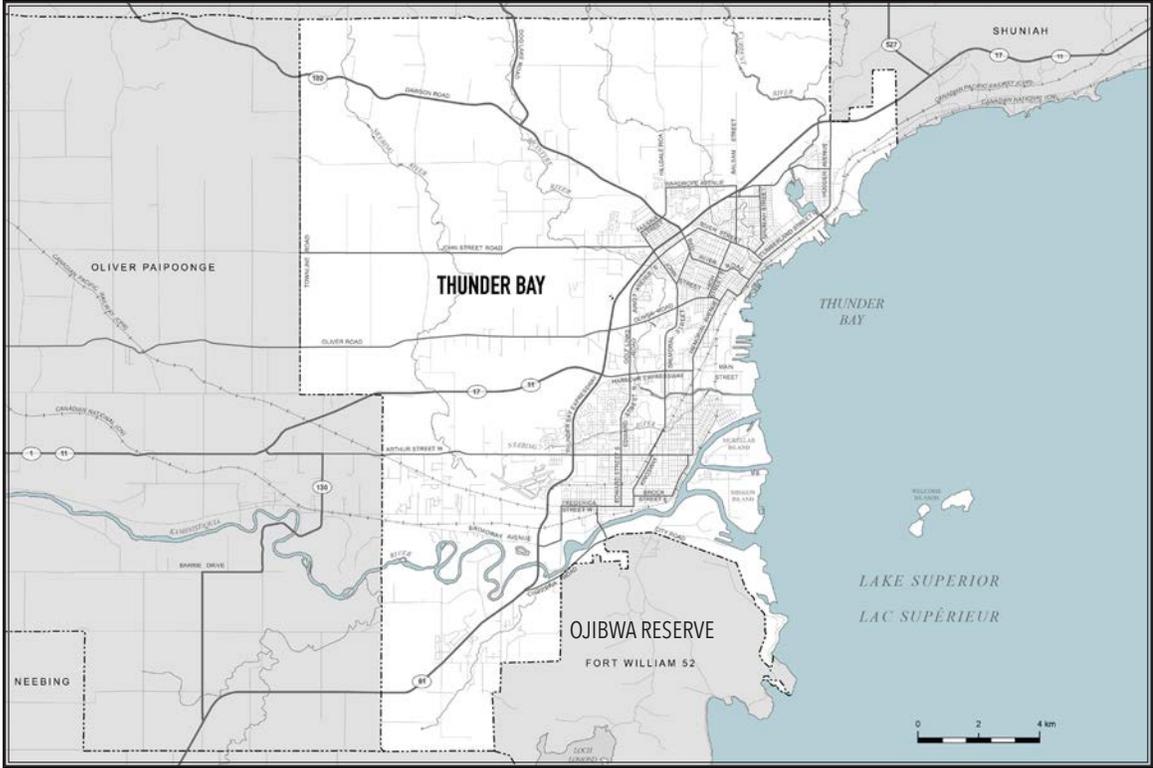


Figure 2. Map of Thunder Bay.

1.1 WELCOME TO THUNDER BAY



Figure 3. Thunder Bay aerial photograph, 1959.

With a population of 109,000 people, Thunder Bay is the largest city in Northwestern Ontario. The city is surrounded by lakes, forests, and mountains, which are collectively abundant with many natural resources. The climate, geography, and natural resources of Thunder Bay made it the ideal settlement for the first inhabitants who led a sustainable hunter-gatherer existence. These factors continue to influence economy, recreation, culture, and food security in the area.

[1] **humid continental climate** : major climate type of the Köppen classification that exhibits large seasonal temperature contrasts with hot summers and cold winters. It is found between 30° and 60° N in central and eastern North America and Asia in the major zone of conflict between polar and tropical air masses.

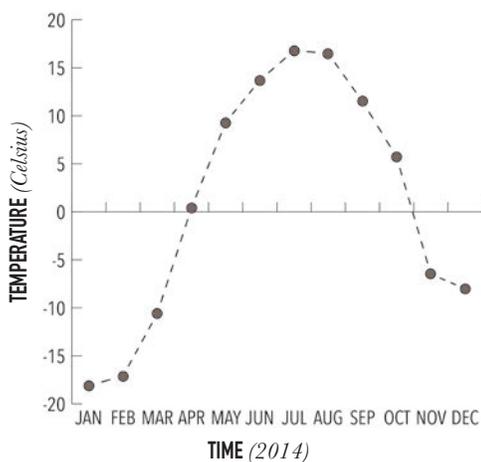


Figure 4. Average monthly temperature in Thunder Bay, 2014.

[2] **Alex Boulet** is a Forest and Freshwater Foods Project Coordinator at Ontario Nature. Working from the Boreal Office in Thunder Bay, Alex conducts research, facilitates workshops, and engages the public about forest and freshwater foods in northern Ontario. A long-time forager and gardener, he has been working towards food system sustainability for his entire adult life.

.1 CLIMATE

The climate and temperature in Thunder Bay is characteristic of a **humid continental climate**[1], experiencing hot summers and cold winters. Data collected by the City of Thunder Bay reports that the average daily temperature in summer is 18°C and lasts from June to September. Winter extends for six months from November to May and the average temperature can vary from a low of -20°C and high of -8°C. Although quite cold in winter, Thunder Bay still has a relatively high amount of sunshine, with average daylight lasting about 8 hours, providing favourable conditions for a variety of outdoor recreational activities.

Agricultural pursuits in Thunder Bay are possible but limited because of the lengthy winters and consequently short growing season. In 2014, Ontario Nature conducted a report titled ‘Beyond the Fields: The Value of Forest and Freshwater Foods in Northern Ontario’, here the lead author **Alex Boulet**[2] acknowledges, “In the place of agriculture, many communities in northern Ontario rely on forests and freshwaters as important sources of local food.”¹ While this is true, because of the climate



Figure 5. Thunder Bay, view of the Sleeping Giant, winter.



Figure 6. Thunder Bay, view of the Sleeping Giant, summer.

and relatively isolated location, most food is imported into the city. This creates a scenario where Thunder Bay as a city, is food dependant without much control over its access to food.

Boulet continues,

“People are more food independent when they have more control or influence over their ability to feed themselves. Factors such as the distance food has to travel, the political stability of borders food has to cross, the price of fuel and taxes, the severity and frequency of climatic disturbances (droughts, floods, etc.), and the number of access points for food in a community all affect people’s control or influence over access to food.”²

Climate becomes an important factor when discussing the food security of Thunder Bay and indirectly influences the city’s culture, society, and economy.

A recent study reveals that 70% of Thunder Bay citizens have noticed changes in the climate.³ In 2014, Thunder Bay experienced the coldest winter in 35 years with an average temperature of -17.5 degrees celsius from the beginning of December to the end of February.⁴ This change in climate has begun to threaten the local forest and fresh water ecosystems and agricultural food production. A study conducted by the

“Climate change is currently affecting all four dimensions of food security: food availability, food accessibility, food utilization, and food systems stability.”

Alex Boulet, 2014

Department of Geography at the University of Western Ontario reported that climate change will not only threaten ecosystems, but will impact the ecology, culture, society and economy of Thunder Bay. The study further states,

“In addition to climate change, it is important to remember that continued urbanization and associated industrialization resulting in pollution, land and water modification and loss, invasive species, and over-harvesting of some species will add to the suite of eco-physiological impacts caused by global warming.”⁵

The seasons and accompanying temperatures define the types, quality, and harvesting season of forest and fresh water food. Changes to the climate will challenge every aspect of food security for this community.⁶

[1] **Canadian Shield** : The Canadian Shield refers to the exposed portion of the continental crust underlying North America and covers about 5 million km². Repeated advances of glacial ice have scoured its surface and left it strewn with countless lakes, rivers, streams and ponds



Figure 7. Map of Thunder Bay in relation to the Sleeping Giant (Sibley Peninsula) and USA border.

.2 GEOGRAPHY

Thunder Bay is geographically located on the North-West tip of Lake Superior. It is surrounded by numerous mountains, lakes, and forests that are characteristic of its designation in the **Canadian Shield** [1]. Thunder Bay is only 45 minutes away from the United States border crossing at Pigeon River. The nearest large city, 552 kilometres southwest of Thunder Bay, is Minneapolis, Minnesota, USA. The largest Canadian city, is Winnipeg, Manitoba, 702 kilometres to the west.

This geographical isolation leaves Thunder Bay dependent on food that must travel long distances. Food insecurities that arise as a result of geographical location can be mitigated through an emphasis on foraging forest and freshwater foods. Boulet states, “The notion of “going local” can address many of the vulnerabilities within food systems, particularly those that have to do with geography. When the majority of food is sourced from a distance, communities are vulnerable to disruptions beyond their control.”⁷ More resilient, adaptable, and independent communities can be achieved by reexamining how people access and obtain their food in relation to the geographical location of the city.

[1] **Dr. Thorold Tronrud** : Dr. Thorold Tronrud is a professor of history at Lakehead University in Thunder Bay and currently the Director and Curator at the Thunder Bay Historical Museum and Society

.3 NATURAL RESOURCES

Within the lakes, mountains, and forests of Thunder Bay exists a plethora of wild animals and fish, species of trees and flora, and geological resources such as gold, silver, copper, and amethyst. **Dr. Thorold Tronrud**[1] has conducted extensive research on Thunder Bay, especially in the area of economic development. He acknowledges the prevalence of natural resources in the area,

“In some respects Nature was kind to the early Lakehead, blessing it with a sheltered, deep-water harbour, a central location and a temperate climate. Nearby lakes and rivers teemed with fish and the forests with animals; the Precambrian Shield yielded minerals in abundance.”⁸

The geography, climate, and resources have contributed to the abundance of recreational activities and outdoor enthusiasts in the area. The notion of outdoor recreation is pre-dated by the livelihood of the original inhabitants of the area, the Ojibwa Indians, who survived on the land and adapted to the seasons through their knowledge of the resources, and ingenious use of local, natural, and renewable materials.

1.2 FIRST INHABITANTS



Figure 8. Fort William, from the Hudson's Bay Company Burying Ground (Thunder Bay, Ontario), 1871.

The earliest inhabitants of the area were the Palaeo-Indians who settled in Thunder Bay over 9,000 years ago.⁹ The Ojibwa people (also known as the Chippewa, Anishnabek, or Ojibway) are the ancestors of the Paleo-Indians and the original inhabitants of the area when it was contacted by 17th century settlers. At this time, it has been documented that they lived communally in villages and led a hunter-gatherer existence that was dependent on the seasons, availability of resources, and most importantly, co-operation.

Knowledge of the land and resources surrounding Lake Superior (*Kitchigami*) was essential for survival. In 1979, Edmund Jefferson Danziger Jr. wrote *The Chippewas of Lake Superior* which includes a thorough account of the traditional culture of these people. Here he states,

*“Governed largely by the ecology of Kitchigami land, the lake Chippewas evolved a culture that gave them a reasonably satisfying life. Traditional activities, institutions, and beliefs were family centred and tied to the rhythms of the seasons. Self-sufficient households, often isolated, lived in a loosely related political and social world of villages, clans, bands, and tribes.”*¹⁰



Figure 9. Archival photo of an Ojibwe family in a Birch bark canoe, circa 1880s.

Every resource harvested was used in its entirety and was not taken in abundance of what was needed. Every part of an animal that was hunted had a purpose; the meat was eaten, bones were used for tools, fat was rendered for cooking, and the hides and furs were sewn into clothing and blankets. This also included materials used to construct dwellings, canoes, and domestic objects such as baskets, tools, and utensils. It is reasonable to suggest that it was the introduction of trade with European settlers that drastically changed life for the Ojibwa people, and forever transformed their relationship with the natural environment.

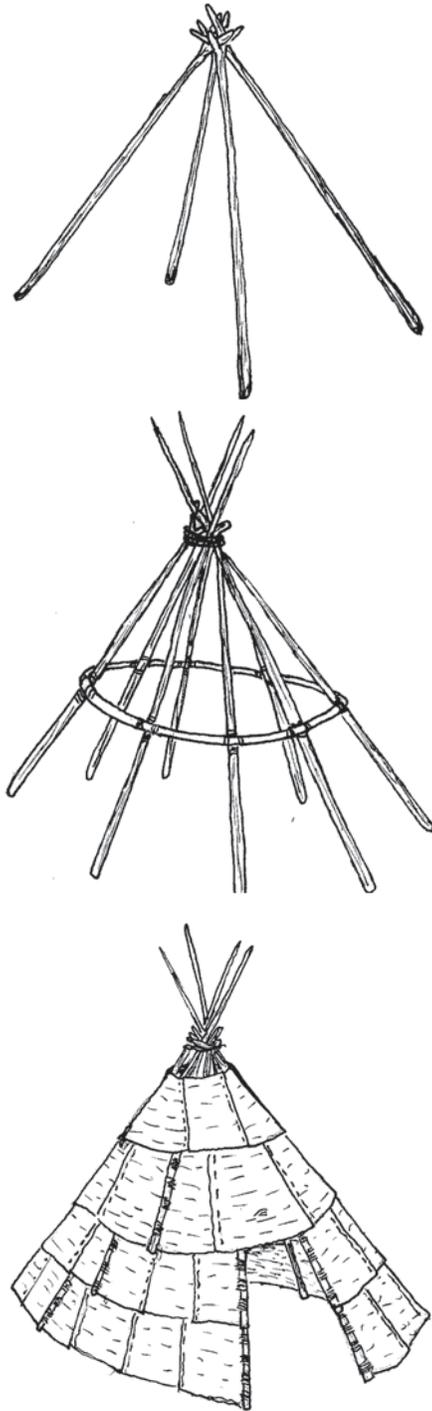
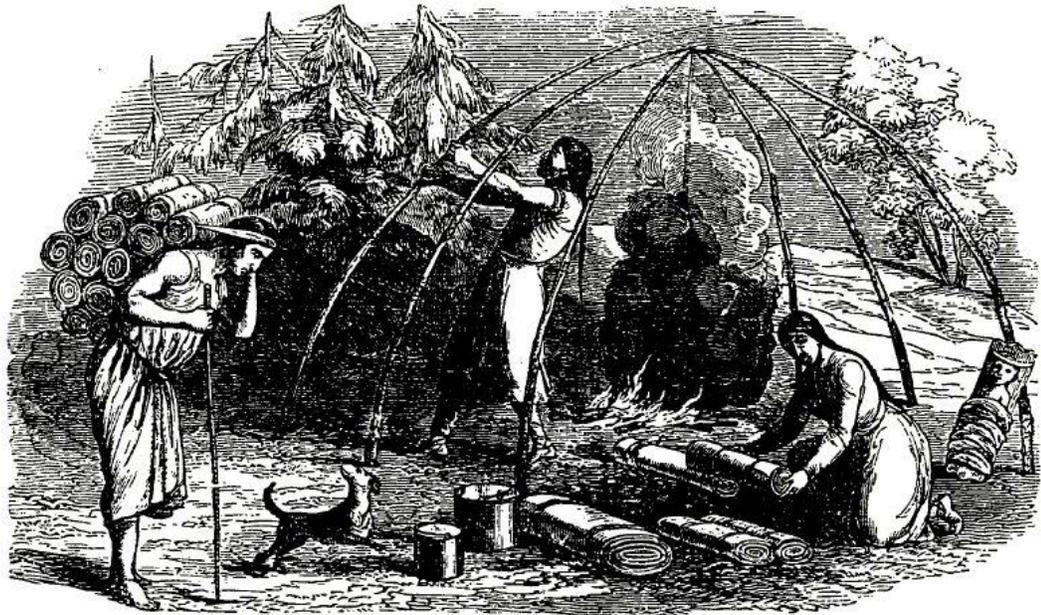


Figure 10. Ojibwe Wigwam Three Pole Construction.

.1 WIGWAMS & VILLAGES

Dwellings in the Ojibwa culture are called wigwams, the term is rooted in the word *wigiw* which means “to dwell”. Homes were suitable to sleep an average of eight people, and accommodated adults, children, and elders. The construction process of a conical wigwam or ‘peaked lodge’ began by collecting and preparing materials. The outer covering could be of either birch, elm or cedar bark; birch being the preferred material because it is easily harvested, light, durable, and waterproof.

Trees used for the structure needed to be stripped of their bark, dug into the ground to form a foundation, and fastened at the peak with raw animal hide. The women would peel and split the spruce root which was a durable and flexible natural thread used to sew birch bark together. The completed panels were then adhered to the frame with rawhide starting at the bottom and overlapping like shingles towards the top where a hole for smoke was left open. This construction method demonstrates the knowledge of local materials and how they were used to suit specific functions.



OJIBWAYS BUILDING A WIGWAM.



INTERIOR OF AN OJIBWAY WIGWAM.

Figure 11. "Interior of an Ojibway Wigwam".
G. T. Sproat, American Penny Magazine and Family
Newspaper, New York, Saturday August 1, 1846, vol. 2
no. 26, pp. 401-403

[1] **semi-nomad** : a member of a people living usually in portable or temporary dwellings and practicing seasonal migration but having a base camp at which some crops are cultivated (Merriam-Webster)

[2] **Frances Densmore** was an American anthropologist, known for her extensive research and writing on Native American culture. Written in 1929, *Chippewa Customs* is a chronicle of Ojibwa life as Densmore observed and documented from her first hand accounts living among different Ojibwa villages on the North shore of Lake Superior.



Figure 12. Indian encampment on Lake Huron, 1848-50.

This Ojibwa tribe was historically a **semi-nomadic**[1] group, moving between separate summer and winter camps. Birch bark panels and woven cattail mats could be carried between the seasonal camps, but the frames remained.¹¹

Frances Densmore[2] notes, “The rolls of birch bark were carried by the women and it was often more convenient to use them than to take time for gathering the heavy sheets of elm or cedar bark.”¹² The winter dwelling would include an additional layer of birch bark on the inside of the structure, creating a cavity into which moss was added for insulation.

The summer village would form on the shore of a lake or river, enabling the community easy access to transportation and fishing.¹³ Each time this tribe relocated due to seasonal changes and in pursuit of new resources, a new dwelling would be constructed. In the summer, homes were primarily for sleeping, while most of the daily activities took place outdoors. In contrast to this, Danziger notes that during the winter, freezing temperatures forced families to spend most of their time in the wigwam. He states,

“when not out on the hunt, menfolk passed the daylight hours making and repairing snowshoes, traps, and other wooden implements; youngsters



Figure 13. “Ojibwe Wigwam at Grand Portage” by Eastman Johnson, c. 1906

played in the centre of the bark lodge so that adults could supervise their constant comings and goings; wives wove fishnets and mats or fashioned birch-bark containers (makuks) used each spring for collecting maple sap.”¹⁴

The Ojibwa wigwam is an example of ingenuity in natural materials and construction and functioned as a shelter to sustain their seasonal hunter-gatherer livelihood.



Figure 14. Ojibwa mothers.



Figure 15. Ojibwa women stretching hides.



Figure 16. Ojibwa Fisherman.

.2 LIVELIHOOD

The area surrounding Lake Superior provided the Ojibwa with everything they needed for sustenance and survival. Danziger says, “Kitchigami land was nature’s cornucopia: woods rustling with game, marsh grasses heavy with rice, waters alive with fish and wildfowl...”¹⁵ These resources were harvested and hunted at different times throughout the year, and this seasonality was important for Ojibwa livelihood.

In the village, everyone had a role and specific purpose. The women would take care of the home and children, make clothing and baskets, gather food and resources, and tan hides.

Danziger adds,

“To make wigwams and other furnishings, to chop wood and gather berries and rice and medicinal herbs, to make birch-bark vessels and maple sugar, to dress skins and sew them into clothing, to bear children and cook meals—this was woman’s role.”¹⁶

The men were responsible for hunting large game, but both men and women hunted small animals and fished. While fish could be harvested year round, the bulk of it was caught in the fall was preserved for the winter months.¹⁷



Figure 17. “Gathering Wild Rice”, from the American Aboriginal Portfolio. Mary H. Eastman, 1853.



Figure 18. “Two Ojibwe women cooking maple sap at a sugar camp, possibly at the Mille Lacs Reservation, 1915”. Photo by Frances Densmore, courtesy of the Minnesota Historical Society

Villages were strategically located where they had access to resources, which when the seasons changed, prompted movement to new areas in pursuit of food.

Fall signalled the harvest of a years supply of wild rice where tribes would travel to the nearest rice field.¹⁸ When winter approached, the village would reduce in size to their smaller family units and head to their game fields. Danziger states,

“The winter hunt began in November (Lake Freezing Moon). Hunters brought down plump waterfowl with blunt arrow; small animals such as mink, otter, muskrat, rabbit, fox, and beaver were trapped or snared. . . .As the source of essential food as well as clothing, the chase was a chief occupation of Chippewa men throughout the year.”¹⁹

When winter came to it’s end, the tribe would relocate to the sugar bush where maple sap was harvested and turned into syrup. As summer approached, another shift in location occurred, as families congregated by a body of water suitable for fishing.²⁰ It is evident that staying in one place was not beneficial to the livelihood of the Ojibwa.



Figure 19. "Ojibwa woman collecting maple syrup in birch bark baskets". Roland Reed, 1908.

“If a lucky family had more food than it could consume, the surplus was shared with the needy. A second notable feature of Chippewa economics was tribal self-sufficiency. Members fashioned all essential articles themselves: wooden ladles and bowls, containers of bark, large and small pottery vessels, and tools of chipped flint, bone, and stone...Finally, prior to the white man’s arrival, the Chippewas had no such practice as individual ownership of land.”

Edmund Jefferson Danziger, Jr.

1938

The combined knowledge and effort of every individual ensured self-preservation and, above all, a prosperous community. Bogue states,

“At the time of European contact, Great Lakes Indians fished cooperatively within families, bands, and clans. The work roles were clearly defined: women gathered the nettles and hemp to make fibres into fine cord for netting by spinning and twisting it “on their bare thighs”, and men apparently made the gill nets; men fished, and women preserved and stored the catch. Indians fished primarily for food and, to some extent, used fish for barter.”²¹

Preserving large quantities of food throughout the winter was not feasible, so survival was often dependant on sharing. There was no such thing as ‘private property’ in this culture as everyone had equal right to the land and it’s resources.²² Community and cooperation was integral to the success of Ojibwa society.



[1] **Birch bark scroll** : Ojibwa on birch bark, Western Great Lakes. The Mide roll can be said to represent the transmission of totems or social structures with name glyphs. U.S.A. mid 19th c.



Figure 20. “Inside of the Hudson’s Bay Company trading post at Fort William”, Ontario ca1860-70, watercolour by William Wallace Armstrong. Fort William was the old headquarters for the Northwest Company until 1821.

4 TRADE

Dr. Victor Lytwyn is an expert and private consultant on Aboriginal and treaty rights and traditional knowledge. His research states that local oral traditions and depictions on **birch bark scrolls**[1] have confirmed that commerce in the area had been occurring between indigenous peoples for centuries before European contact.²³ This knowledge emphasizes the ability and willingness of the Ojibwa to travel long distances in pursuit of resources and food that they did not have immediate access to.

In the fur trade era, Fort William was an important gateway for the storage and transportation of furs and European trade goods. Lytwyn states, “After 1701 the economy of the Great Lakes region expanded rapidly, and the Thunder Bay Anishinabeg were situated in a strategic hub of the fur trade that expanded into the western interior of North America.”²⁴ These early ventures in the area proved to be prosperous for European companies. In return for furs, food, and supplies gathered from the forest, the Ojibwa received European trade goods such as aluminum pots, cast iron pans, rifles, steel traps, cotton, and wool blankets, all of which changed their traditional (pre-contact)



Figure 21. "Trading at a Hudson's Bay Company trading post". Unknown Artist.

existence. They no longer needed to source materials from the forest for their own survival, but could supplement their livelihood by trading for items that were lighter, more efficient, less labour intensive, and cheaper.

In *The Northern Ojibwa and the Fur Trade*, the author, Charles Bishop notes that by 1820, the Ojibwa were completely dependent on the fur trade for survival. He says, "Survival was precariously balanced between trapping, the primary means of obtaining essential trade supplies, and hunting for food."²⁵ It was not long after contact that Europeans settled permanently in the area. Natural resource extraction would continue to promote immigration and support industry, but threaten the traditional culture and livelihood of the Ojibwa and the resources they relied on.

The history and culture of the Ojibwa has demonstrated that living off the land in Northern Ontario is a viable means of securing a livelihood. How can we learn from this traditional livelihood to propose a new dwelling type for a hunter-gatherer community?

1.3 FROM LIVELIHOOD TO RECREATION



Figure 22. Mounted walleye.

The traditional hunter-gatherer livelihood of the Ojibwa changed drastically when the European fur trade introduced new technologies and tools. Throughout time, this livelihood has transitioned to recreation through the use of these new technologies, alternative means of securing livelihood, and through the establishment of regulations. While many hunters and anglers do so for sustenance, an equal proportion take part simply for pleasure or sport.

Since regulations have banned commercial fishing, the once threatened populations of fish have, for the most part, been replenished. By looking at the conditions that support a sustainable livelihood, the historical evolution of resource extraction, and the influence of governance on natural resources, we can begin to rethink the parameters for a new livelihood in Thunder Bay.



Figure 23. The grain berth, Lakehead, Thunder Bay, Lake Superior, May 1961. This image depicts the prevalence of logging, shipping, and storage industries in the area.



Figure 24. A mechanized drop-loader puts logs onto a truck, replacing the work of a team of horses. 1944 Thunder Bay, Ontario

.1 INDUSTRY

Industry in Thunder Bay has been based on the city's central location and abundant natural resources. Tronrud notes,

*“For more than a century, Thunder Bay’s economy has been based upon two interlocking functions: 1) the extraction of natural resources; what economists call staples—fish, furs, logs, minerals, etc.—and what we normally refer to as the products of primary industries; and 2) transportation, or, more precisely, the export of those raw materials to processors elsewhere and the transshipment of finished goods and people between east and west.”*²⁶

As industries surrounding natural resource extraction and transportation began in Thunder Bay, many people migrated to the area for employment in commercial fisheries, mining, and logging industries. In *The Culture of Hunting in Canada*, Edward Hanna, a specialist in natural resource management states,

*“With open access to natural resources in North America during the period of European colonization, great pressure on the resource base was experienced. This pressure was heightened significantly by commercial exploitation of fish and wildlife.”*²⁷



Figure 25. Finnish Immigrants in Thunder Bay with hunted bear.

In addition, the majority of immigrants were coming from Europe, where there was a very different hunting culture. Hanna notes,

“A key distinction, however, between North American and European hunting traditions relates to the ownership of fish and wildlife. Unlike the situation in many European countries, fish and wildlife were declared a public resource in North America with equal access being enjoyed by all citizens. Fish and wildlife were not the exclusive property of an elite minority (e.g., nobility or the landed gentry).”²⁸

Europeans coming to North America took advantage of their new found freedom regarding hunting and fishing.

As the population increased in the early 1900’s, a demand for more food and employment put increasing pressure on these industries. These resources quickly began to grow scarce, so new technologies were developed to yield more quantities. Hanna continues,

“As the continental human population grew, transportation systems improved (i.e., increased access to distant markets), and more efficient hunting technologies (e.g., repeating guns) were introduced, the limits of the resource base were reached and exceeded.”²⁹

Concerns arose over how the health and well-being of society were being affected by technological advancements and industrialization. Jean L. Manore is a history professor and a contributor in *The Culture of Hunting in Canada*. She notes,

“The other manifestation of the anti modern ideology was a concern that the techniques of industrialization were becoming too powerful. Mastery of the environment, which industrialization purportedly allowed, was also leading to its destruction and, as already noted, to the ill health of both the individual and the nation. Wilderness therefore had to be saved from industrialization if the society could be saved as well.”³⁰

Regulations began to be implemented and enforced as the society and government became weary of industrialization, the loss of natural resources, and destroying landscapes and habitats.

Industries that involved resource extraction began to collapse due to increasing legislation regarding unsustainable practices. The current society in Thunder Bay has become dependent upon these aforementioned unsustainable industries to support local economy, growth, and development. Bruce Muirhead from Lakehead

University in Thunder Bay states,

“Thunder Bay has been dependent on a limited number of resources which, as they declined in importance or were obtained or shipped elsewhere, left the city unable to respond adequately to its declining economic base.”³¹

The instability of the industry and economy of the area affects the access, availability, and affordability of food, homes, and transportation. A resurgence in sustainable wild food foraging can provide a solution to those affected by job cuts, layoffs, and changes in industries, enabling them to become self-sufficient.

.2 REGULATION & RECREATION

As regulations were passed in response to trends regarding industrialization and depletion of resources, outdoor recreation was recommended to urban dwellers as a refuge from the city.

Manore adds,

*“As a result of these reasons, it became apparent that ‘wilderness’ was a vital part of Canadian living, at least according to urban, middle-class views. It was tied to national identity and development, it was a cure for physical and mental ills, and it provided an opportunity for civilized citizens to reestablish connections with the environment.”*³²

As hunting became more popular it became apparent that this activity would have to be regulated more strictly. But this did not happen right away, as Louis Bird and Roland Bohr claim,

*“It was not until the late nineteenth century, when independent businesspeople began to operate hunting lodges, run guiding outfits, and build summer camps for urban men, that strict regulation of wildlife became a necessity.”*³³

Once again populations of animals were under threat, but this time by recreational technologies leading to over extraction. Hanna notes, “As

recognition of this decline spread, changes in laws were made, eliminating market hunting, restricting hunting technologies, and introducing limitation such as bag limits and seasons.”³⁴

Individuals who do not have a licence or disobey laws on limits and seasons are subject to fines and suspensions.

More recently, as of 1972, the Ministry of Natural Resources was established as a governing force in Ontario. The ministry is responsible for fish and wildlife management, land and waters management, forest management, Ontario Parks, protection from forest fires, floods, and droughts, and finally, developing geographical information to manage the resources. Their mission statement is “The Ministry of Natural Resources and Forestry protects Ontario’s biodiversity while promoting economic opportunities in the resource sector and supporting outdoor recreation opportunities.”³⁵

They are responsible for issuing regulations, licensing, and enforcing the regulations of extracting resources. Boulet reports,

“Since 1996, Ontario has put licence fees, royalties and fines collected under the Fish and

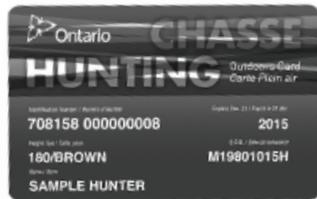


Figure 26. Sample Ontario hunting and fishing Outdoor Cards.

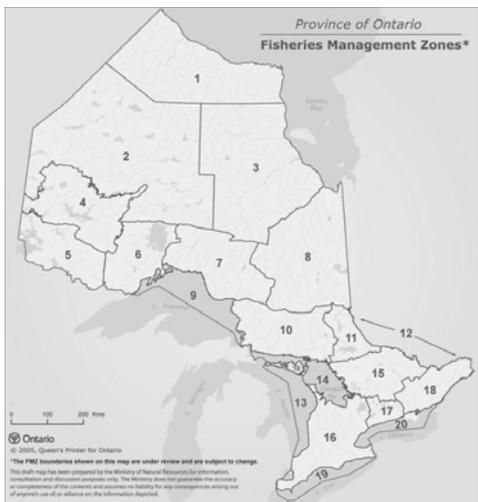


Figure 27. Province of Ontario Fisheries Management Zones

*Wildlife Conservation Act, 1997 into a special account used exclusively for fish and wildlife management... This is an excellent example of the way in which hunting and fishing activities, which depend directly on forest and freshwater food systems, can generate economic value that can be used to ensure the long-term sustainability of these systems.*³⁶

Current initiatives involve the maintenance of healthy levels of species populations and control of invasive species. These systems will ensure that there are enough fish to support a balanced freshwater ecosystem and promote food security for individuals that rely on freshwater food for their livelihood.

But it is not solely the governments responsibility to monitor and protect the resources. The Heritage Hunting and Fishing Act of 2002 acknowledges,

“Recreational hunting and fishing have played important roles in shaping Ontario’s social, cultural and economic heritage. Recreational hunters and anglers have made important contributions to the understanding, conservation, restoration and management of Ontario’s fish and wildlife resources. The best traditions of recreational hunting and fishing should be valued by future generations.”³⁷

[1] **rights** : "These rights often address the creation of reserves for the exclusive use of First Nations, and their rights to hunt, to fish and to trap on provincial Crown lands. Treaty rights are protected by subsection 35(1) of the Constitution Act, 1982."

Within this document, the rights, regulations, and responsibilities of anglers and hunters are detailed.

Certain restrictions on hunting and fishing do not apply to the local aboriginal population of Thunder Bay and across Canada. Aboriginal communities and individuals retain their **rights**[1] and do not require licences to hunt and fish for personal, communal, or ceremonial purposes within their traditional treaty areas.³⁸ These treaties were established between the Crown and First Nation communities to protect their rights to carry out their traditional livelihood.

Beyond recreation, the sustainable practice of local food foraging, fishing, and hunting has the potential to create self-sufficient communities with a strong sense of culture, identity, and respect for the environment. By rethinking the recreational activities of the area, the resources it depends on, and the architecture that supports it, we can begin to envision a new livelihood for Thunder Bay.



PART 2

Alternative Livelihood

2.1 ALTERNATIVE LIVELIHOOD

The practice of hunting fishing, and food foraging in Thunder Bay is bound by tradition, evolution, and common practices. It is affected by numerous factors such as climate, geography, culture, regulation, and availability of resources. As these primitive survival activities transitioned to recreation, new philosophies, perspectives, technologies, and practices developed. Most recently, in Thunder Bay, the concepts of “going local” and self-sufficiency through food foraging are being highlighted through numerous studies, reports, and community awareness workshops. We will now go onto discuss personal and philosophical motives for hunting and fishing and the current initiatives that promote the practice of food foraging.

.1 PHILOSOPHY

People hunt, fish, and forage for a variety of personal reasons. Generally greater than the act itself, the motives extend to social, spiritual, and psychological benefits. Edward Reid is a hunter and naturalist who is committed to the conservation of the natural and cultural history of Canada. Noting on the different motivations of hunters for the following reasons,

“[For] the procurement of healthy natural meat, ‘sport’ (the advancement of personal physical and mental goals), social benefits (participation in a community of like-minded individuals), recreation in nature (including re-creation of our ancestral place in nature), and spiritual and psychological benefits.”³⁹

Whatever the motive, for many, the act of hunting and fishing is a sacred practice.

These practices have been associated with a quietness and time for reflection while representing a deliberate choice to withdraw from society in exchange for a deeper connection with nature. John Ehrenfeld, the author of *Flourishing: A Frank Conversation About Sustainability*, speaks of his passion for fishing:

“The purpose of my fishing is to catch fish, but that’s not the real story. I fish to find a quietness,

to learn more about the world as it exists without human intervention, to sharpen my powers of observation, all of which are difficult to work on in the busy, noisy world I spend most my life occupying...I believe that fishing involves love... When we love the world, we take care of it, not merely use it. Life requires interacting with it. Fishing brings me closer to the world so that I may discover its essential values and be more careful in all of my actions that involve it. Not just the non-built world, but also other people and even myself.”⁴⁰

Hunters and anglers often define themselves by their participation in these activities. Manore believes, “In Canada, hunting is a human activity often associated with the primeval, yet to many it remains as fundamental to their identity and their way of life as any manifestation of our ‘modern’ existence.”⁴¹ In addition to developing personal identity, hunting and fishing instills a sense of belonging to a larger community. Many people engage in these activities to belong to these communities who share similar set of beliefs, values, and lifestyles. Manore continues,

“Hunting is, by and large, a social activity. It is often done in groups of family or friends; it is a shared activity and consequently helps to support or build communities. It also transmits culture through stories and repetitive, if not ritualized, behaviours. To many, hunting is a traditional to some, it is a religion.”⁴²

Others find refuge in the practice of hunting and fishing for reasons which speak to an intrinsic nature of the human race to be hunter-gatherers. Leigh Clarke is a contributor in the book *The Culture of Hunting in Canada*. He speaks of his perspective on hunting which he shares with his father,

*“[H]unting and gathering, with the intimate understanding of nature that these activities require, were the original occupations of humankind and therefore something intrinsic to our own humanity. The shift to agrarian and then urban societies has shifted the bulk of our kind away from our roots.”*⁴³

Similarly, some hunters and gatherers maintain the idea that through hunting, one can honour a connection to their history and the natural world. Robert Sopuck, an environmental activist tells of his personal connection to hunting, “to me, hunting is an eternal connection to my family and its history, to my hunting and gathering ancestors, and to the land.”⁴⁴

Throughout history, traditional hunting methods, techniques, and technologies have been developed. But does technology always change traditions? Rituals are formed by the process of doing something repeatedly and when a

community works together towards a common goal. Hanna notes,

“Hunting and gathering have been an integral part of human society for millennia. As a result of this long history, hunting traditions form a cornerstone of the cultural foundations for many societies...As is common with many higher-level species (including humans), behaviours having important survival implications and involving interactions along multiple individuals of the species become highly ritualized.”⁴⁵

These rituals are unique to each group and culture but often involve practices for the catch, preparation, and cooking and, on a larger scale, translate to a great appreciation for the animal being hunted or fish being caught. Hanna acknowledges this,

“Many subsistence hunting cultures involve great respect for their prey. These hunters are guided by deep-rooted spiritual and cultural rituals designed to reinforce what in some cases is a religious reverence for the hunted.”⁴⁶

This notion is also seen in the Ojibwa traditional livelihood which was bounded by respect and appreciation to the Creator for the resources which enabled them to survive.

Manore believes,

“Hunters care deeply about their hunting activities and feel threatened when those activities are criticized or curtailed. Hunting is, for many of them, a deeply rooted cultural tradition at the core of their identities as individuals and members of communities. For others, hunting is a means of finding an identity that is rooted in a love of or respect for the natural world and one that, once found, is not to be easily or casually discarded.”²⁴⁷

Hunting and fishing are more than recreational pursuits, they have been and continue to be a lifestyle, a community, and for some, a “religion”.



Figure 28. Karen Stephenson describing nutritional benefits of plants.

.2 FOOD FORAGING INITIATIVES

Recent initiatives in Thunder Bay have been shedding light on the potential for harvesting plant-based edibles to create a community that is more food independent. Forage North is organized by the Ontario Nature's Boreal Program who's objective is to "strengthen the local food economy, community health and environmental sustainability in northern Ontario by increasing the appreciation, supply and distribution of edible wild plants."⁴⁸ Once more turning to Beyond the Fields, Alex Boulet states,

*"The forests, waterways, and wetlands of northern Ontario are home to a great number of diversity and wildlife, and contain one of the largest reservoirs of fresh water in the world. These natural systems have provided physical, cultural and spiritual sustenance for humans since time immemorial. Yet in spite of this abundance, northern communities are struggling with unemployment and economic instability... Understandably, many northerners are experiencing options for a more resilient, sustainable way forward that will foster long-term community health, prosperity, and security."*⁴⁹

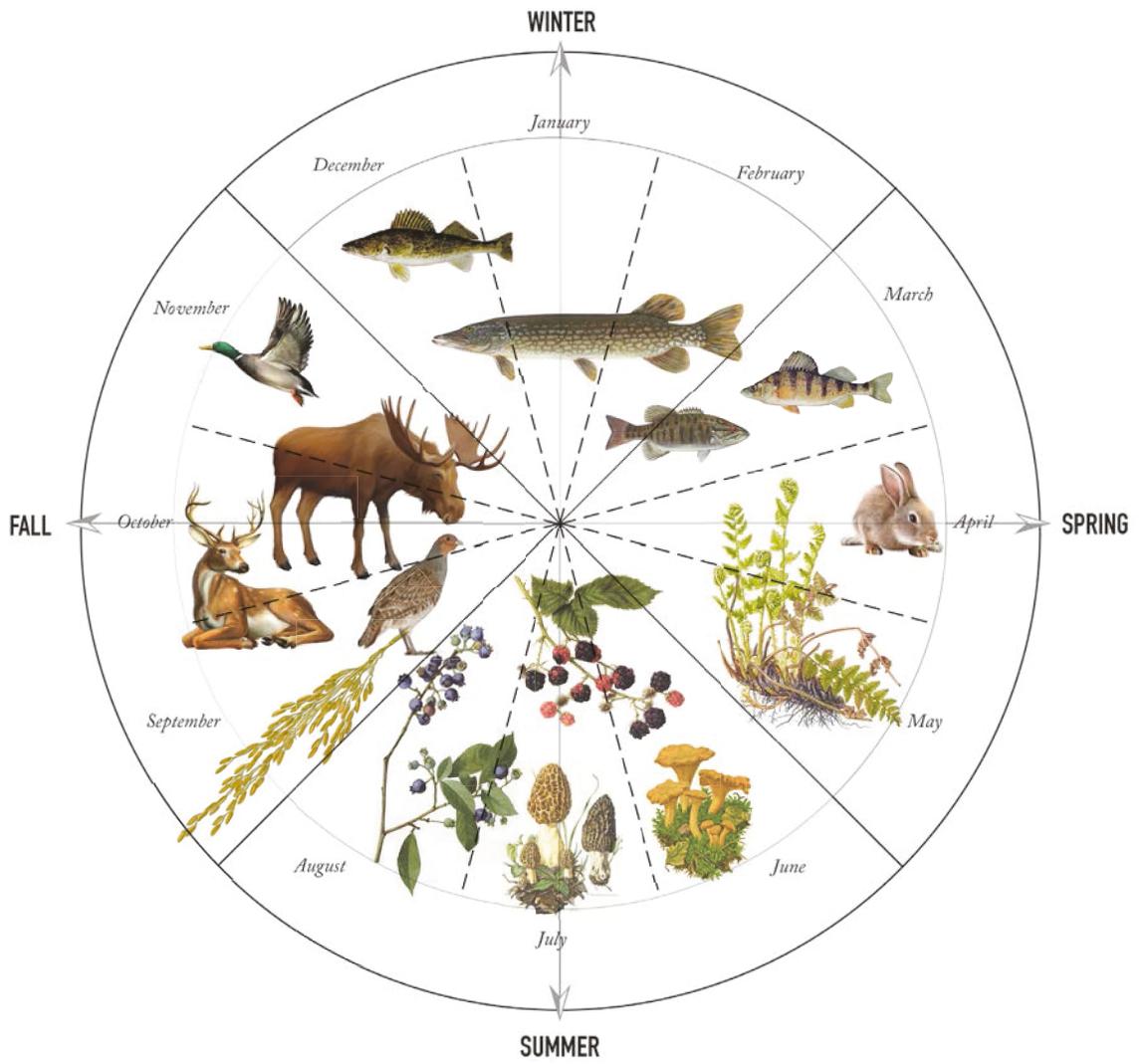
The incentives for projects like this extend beyond the ability and access to local, wild food to an inherent need to find solutions to the current condition of food security.

Conducting research and sharing information with the public is crucial to the success of any project like this which challenges the way a society will gain access to fundamental requirements. Boulet acknowledges,

“Food harvesting requires specific knowledge of the ecology and geography of the land. Northern Ontario cultures are rooted in this knowledge and heritage, whether it be the traditional ecological heritage of First Nation communities or the history of the fur trade in northern Ontario.”⁵⁰

This transfer of knowledge is also a way of ensuring traditions and practices are carried on. A livelihood focused on harvesting forest and freshwater foods will promote community wellbeing, cultural traditions, and foster a greater connection with the environment.⁵¹

By introducing new livelihoods to the area, ecological responsibility and economic sustainability are promoted. This newfound “ecological responsibility” regarding choices related to food may translate to a re-evaluation of the other elements in life such as the homes we live in and the modes of transport we choose.



SEASONAL WILD EDIBLES

2.2 PRECEDENTS

The introduction of new means of obtaining food from the wild may begin to question the traditional home and community. By introducing this new livelihood, it is reasonable to propose that a different type of shelter may suit this population better; one that adapts to the seasons and acts as a tool for hunting, fishing, and foraging. Certain shelters do exist for these purposes independently, but none are considered to be permanent year-round homes. The design of a home that supports individual food foragers will be influenced by the materials, techniques, and functions of these shelters as precedents.



Figure 29. Ice shack at Lac des Mille Lacs, Ontario.



Figure 30. Interior of ice shack pictured above.

.1 ICE FISHING SHACKS

In Thunder Bay, fishing takes place during all seasons and in the most extremes of weather.

In this particular climate, certain modifications have been made in order to continue to pursue this recreational activity in the winter. Ice fishing shacks (also referred to as shanties or huts)

function to make the pastime more comfortable during the annual six month winter.

The size of individual shacks vary; some are more elaborate than others, but most have space to fish, cook, eat, and sleep. Because shacks are transportable ‘non-permanent structures’, they do not need to comply with building codes and do not require a building permit, but the size is limited to what a pickup truck can tow, and what the ice can support. Built and designed based on specific programmatic and functional requirements, each individual ice shack is a unique reflection of the person who intends to use it.

Thunder Bay is located in the Ministry of Natural Resources Fisheries Management Zone 4, which specifies that ice shacks must be removed from the ice before ice break up. Once removed, this marks the end of ice fishing



Figure 31 & 32. Ice huts in storage for the summer.

season, and the huts built on sleds are towed to shore by way of a pick-up truck or snowmobile.

Ice shacks can be stored for the summer on a private lot at Lac des Mille Lacs, Ontario. In this location, the owner of the land charges \$300 a year to store the unoccupied shacks. Using the scale and function of an ice shack as a starting point, what changes could be made to propose a similar concept for a foragers home? What would it take for these huts be occupied year round?



Figure 33. Saunassa by Akseli Gallen-Kallela (1889)

.2 SAUNA & SWEAT LODGE

The idea of cleanliness by way of a sauna or sweat lodge is prevalent in both the Finnish and Ojibwa culture. Thunder Bay has one of the largest populations of Finnish people outside of Finland. The cultural tradition of the sauna in this culture can be seen in the local culture of Thunder Bay. The sauna not only serves to promote cleanliness, but is a place where people come for relaxation and to spend time with friends and family.

The sweat lodge in Ojibwa culture is a place for purification and healing. The dome-like structure is constructed out of branches tied together and covered with tarps or blankets. Stones are heated by a fire which is external to the sweat lodge. Once heated to an appropriate temperature, the hot stones are transported into the lodge where water will be poured on them to generate steam. This ceremony includes praying, singing, and drumming.

More than just a superficial weekend retreat or recreational shelter, the proposed buildings enable one to survive in nature, provide the necessary mechanisms to move across the varied landscape, and to exist within the seasonal climate. The relationship of the building to the external environment extends beyond the walls, roof, and floor, but exists fundamentally between the occupants and the way they physically experience, give to, and take from the land. The building in this sense becomes an instrument for living, an evolutionary tool which enhances the practices that enable one to live a more honest lifestyle.

2.3 HOME FOR A NEW LIVELIHOOD

The “Home for a New Livelihood” aims to support a food foraging community through design intervention. A series of small, transportable buildings have been designed to function as an instrument for hunting, fishing, and foraging. The project examines how one small space can be used for a multitude of functions, allowing inhabitants to not be limited by their surroundings but inspired by the potential of it.

As resource availability, and climatic conditions change, the buildings respond through movement. This migratory aspect allows one to adapt to the seasonal changes in the environment and permits one to change their location in pursuit of finding food in the wild.

The buildings are transported onto the ice in winter, where they stay until spring. Throughout the winter, when the wild edibles of the forest are frozen, the primary food sources are fish, meat, and preserves made in the fall. Fishing can be done in the comfort of one’s own home through holes in the floor that extend into the ice below.

In spring, the buildings are transported back to land. A “double walled” system has been proposed which offers warmth in the winter, and unfolds in the summer to create extra living space, ventilation, and a connection to the environment.

Each building is designed to rest lightly on the earth. Only what is needed will be extracted from the environment, and resources and facilities will be shared between members of the community. By obtaining all food and materials from the local environment, the footprint of the current model of food production and distribution is reduced.



Figure 34. Ice village at Lac des Mille Lacs, Ontario.

.1 SITE CONSIDERATIONS

There are four predominant areas within the Thunder Bay district which are considered fishing “hot spots”. In order of proximity, they are: Silver Harbour (29.6 km away), Whitefish Lake (73.6 km away), Black Bay (89.1 km away), and Lac des Mille Lacs (162 km away). All of these named areas form considerable sized ice villages in the winter. The largest and most popular is Lac des Mille Lacs, but it is also the furthest away, while Black Bay and Silver Harbour are both part of Lake Superior, closer to the city and more accessible. Any of these locations would be suitable for a proposal, and the community can migrate freely between sites if one provides to be more plentiful at different times of the year.



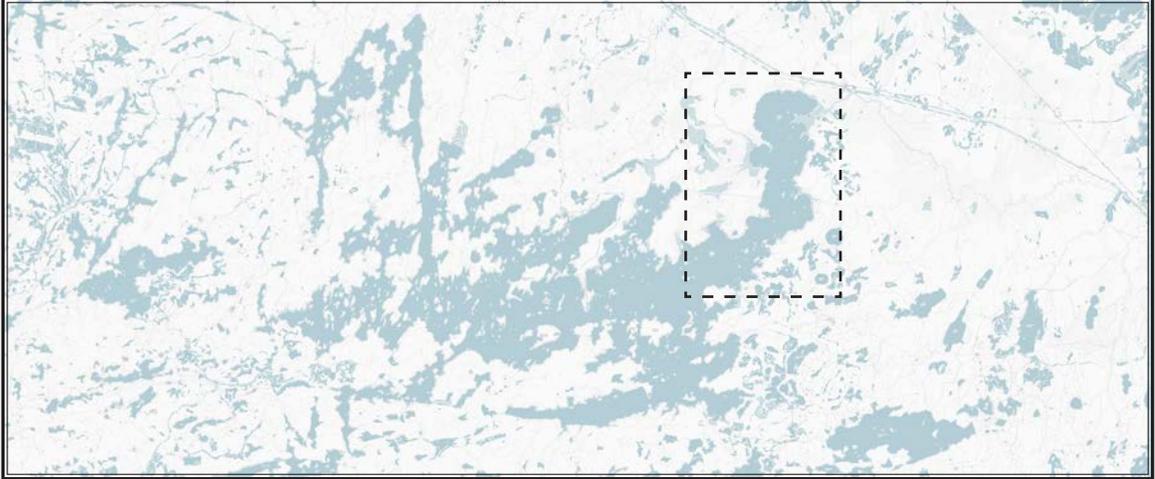
Figure 35. Site options.



PART 3

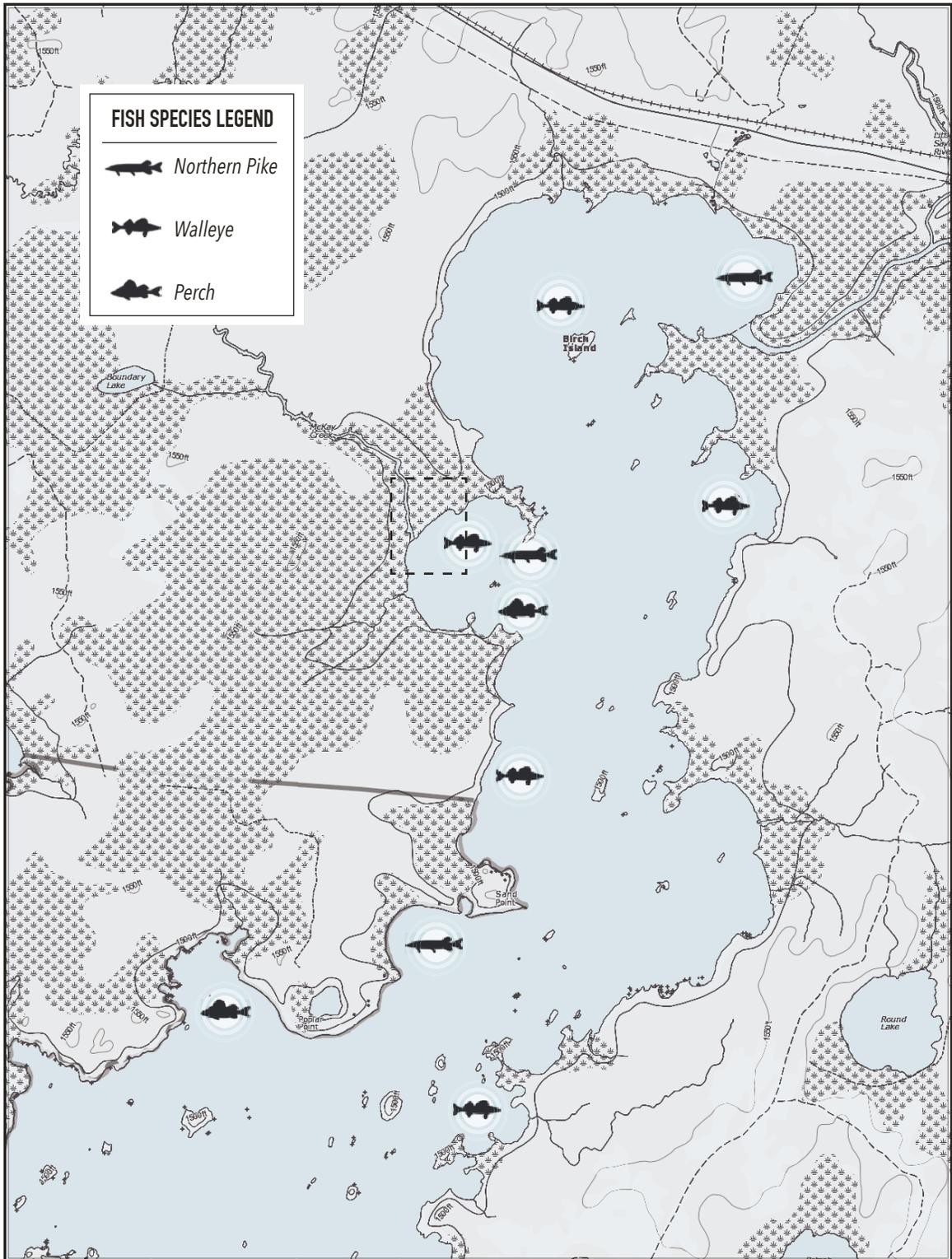
Home for a New Livelihood

3.1 DESIGN DRAWINGS



LAC DES MILLE LACS, ONTARIO

(162km FROM THUNDER BAY)

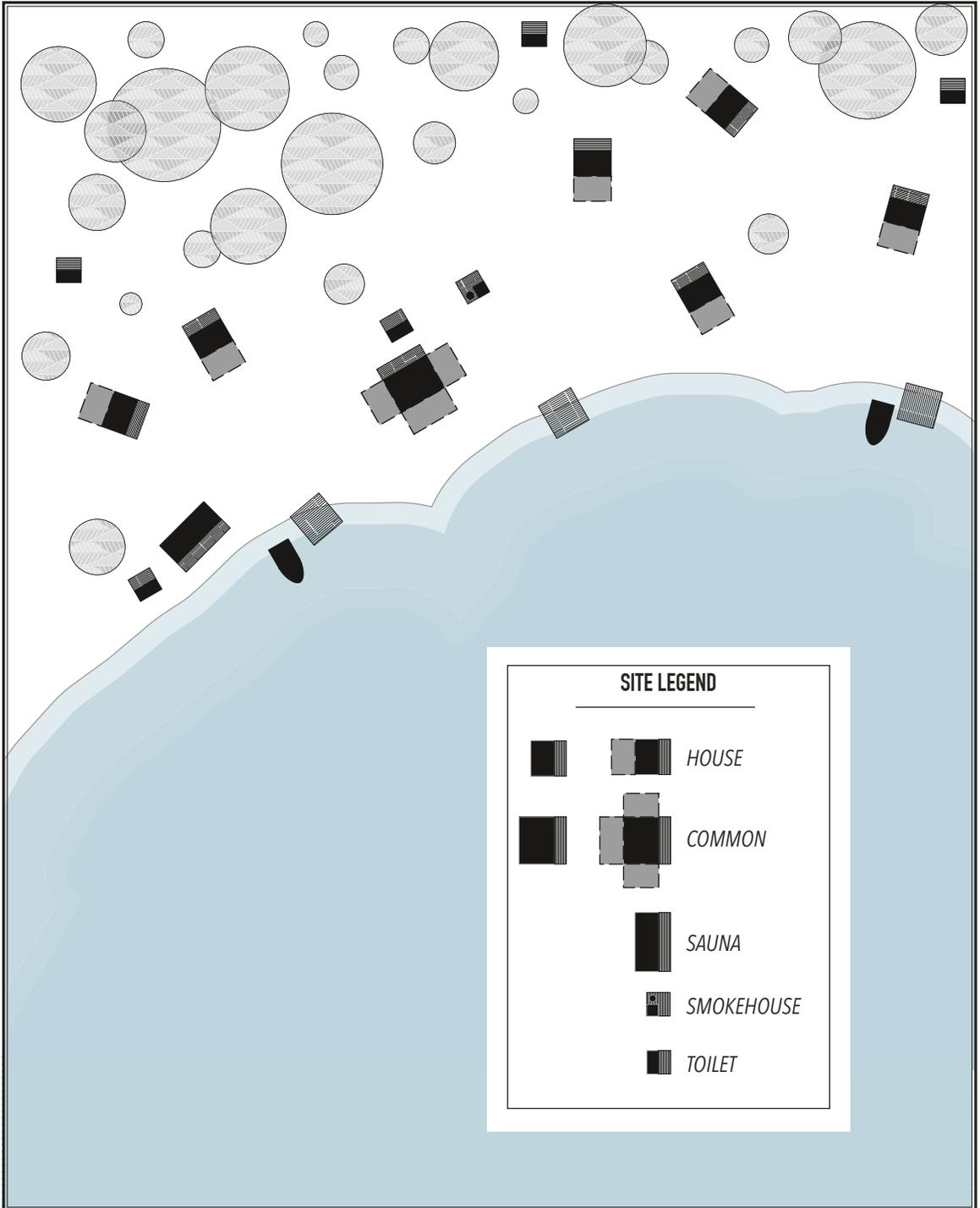


PLAN OF FISH HOT SPOTS
 (AREA OF INTEREST SHOWN DASHED)

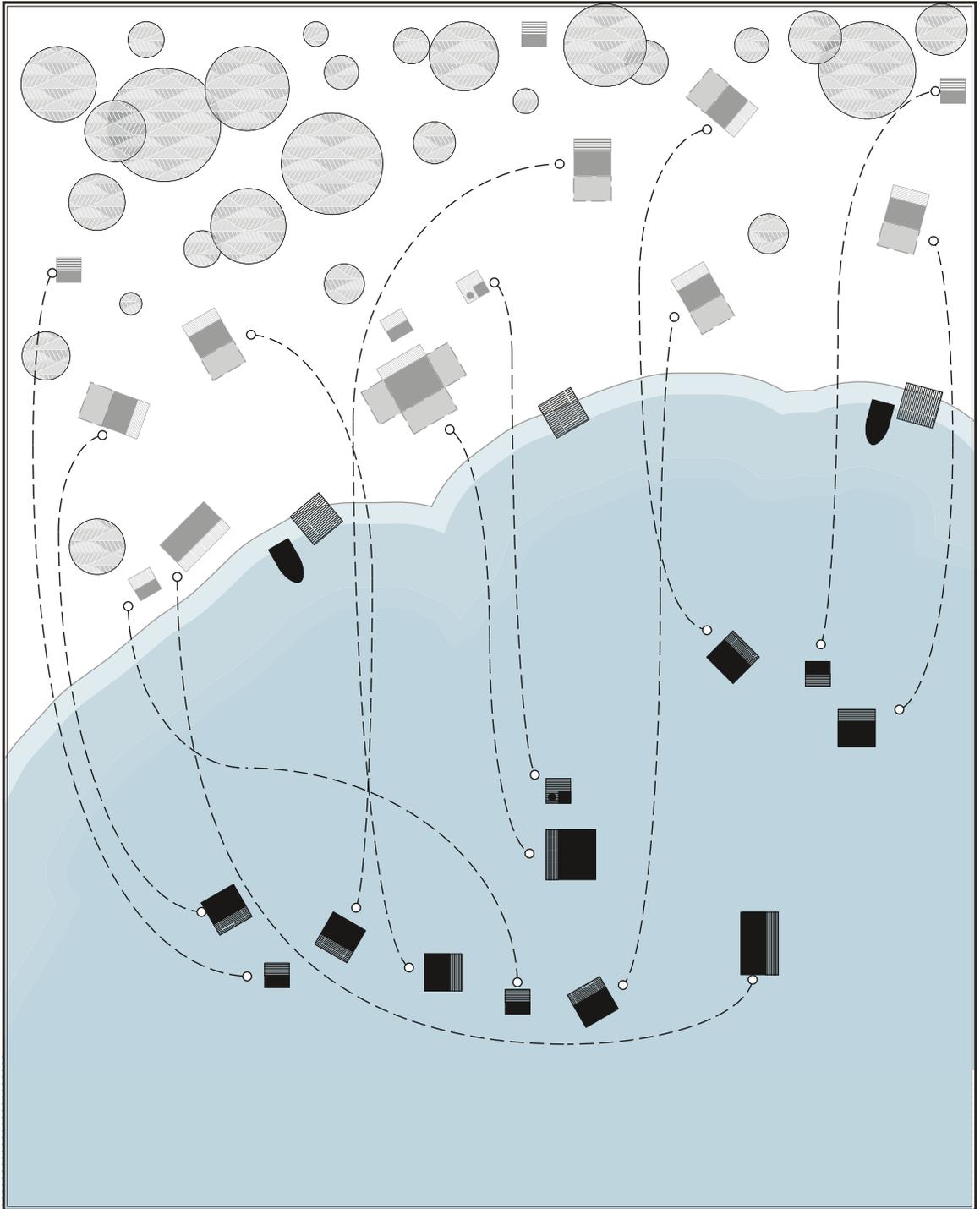
.1 SITE

The arrangement of buildings on the site varies seasonally. In winter, although the inhabitable surface area is increased, the structures would tend to take on a 'huddled' form to decrease travelling distances between individual buildings. This close proximity to each other could also serve to promote the efficient sharing of resources. In the summer, once on shore, the buildings can be further from each other. The positioning on the site in summer is limited by the density of the surrounding forest, slopes of the landscape, and bound by the incoming tides of the water.

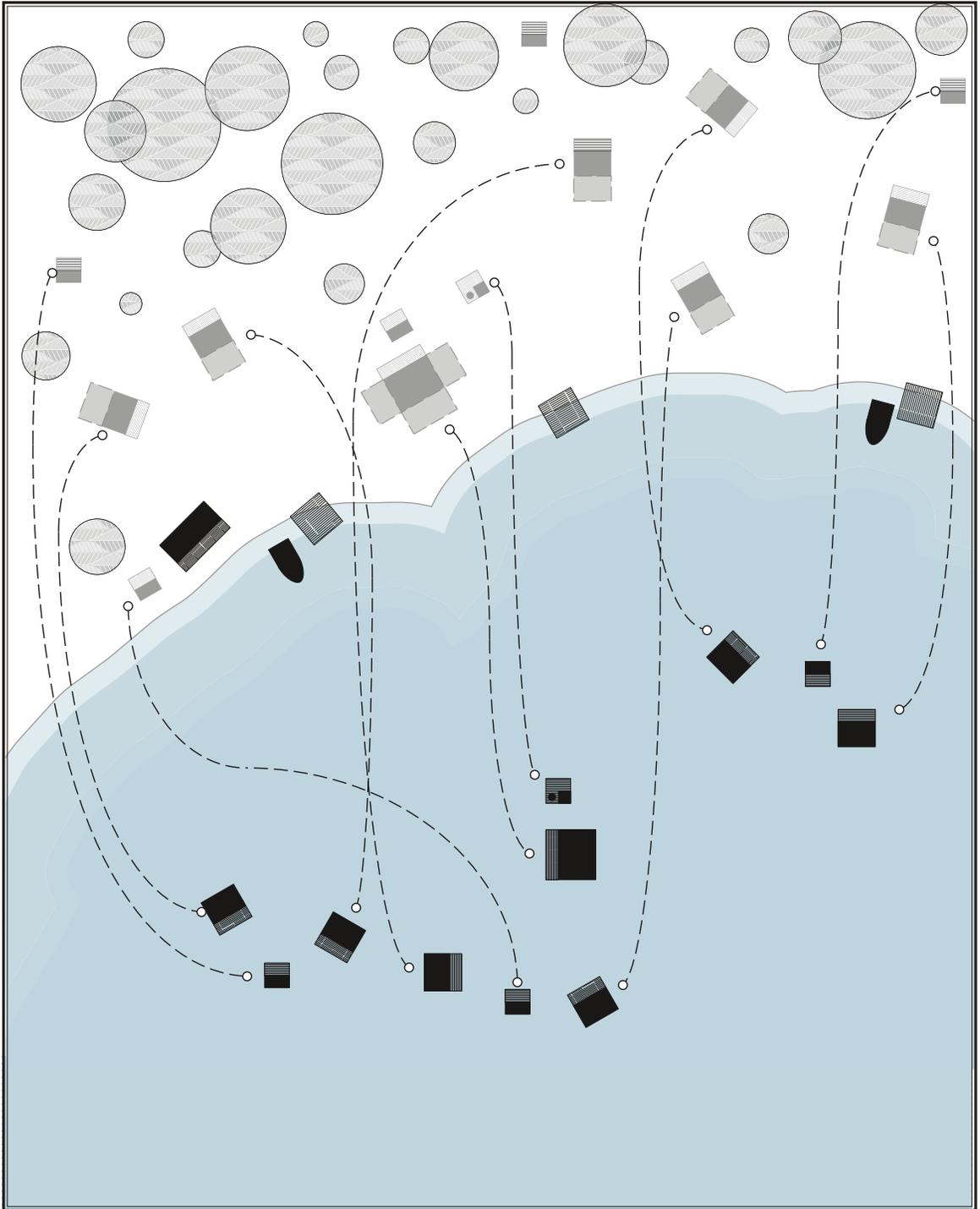
The spaces in between the buildings become important for sheltering the overflow of activities of the community. By positioning adjacent buildings appropriately in response to changing wind and sun exposure, they can function to shield outdoor space in the winter. These liminal spaces also support circulation between the buildings. Site transportation in winter can include walking, snowshoeing, snowmobiling, or dogsledding, each contributing to the network of tracks that weave through the buildings.



SITE PLAN (SUMMER)

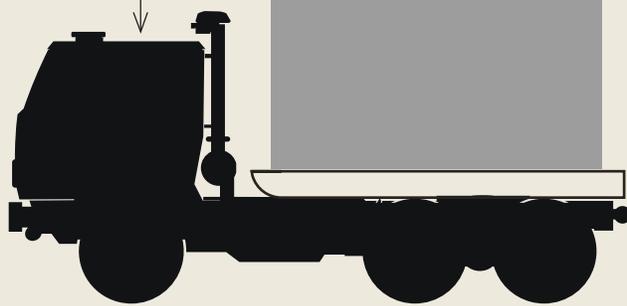


SITE PLAN
(WINTER TRANSITION)



SITE PLAN
(SAUNA AS ANCHOR FOR COMMUNITY)

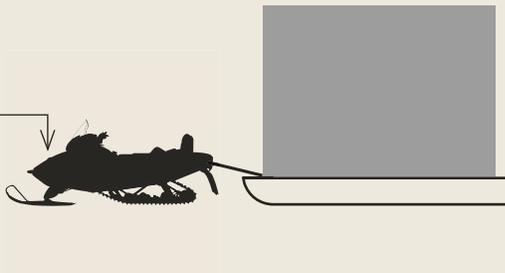
1 HALFTONNE TRUCK



2 PICK-UP TRUCK



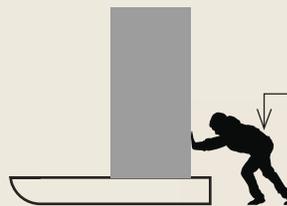
3 SNOW MACHINE



4 SLED DOG(S)



HUMAN(S) 5



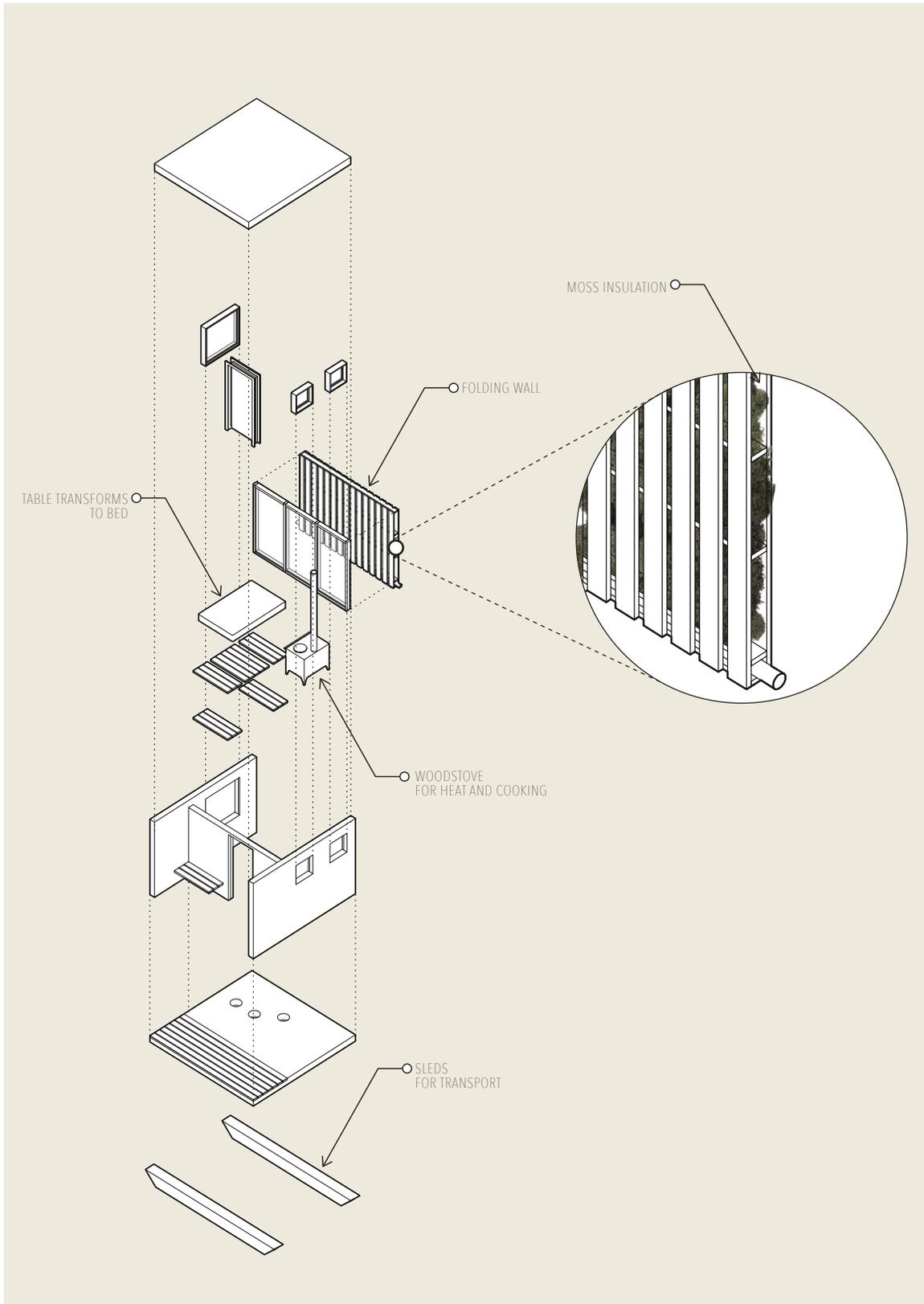
MODES OF TRANSPORTATION

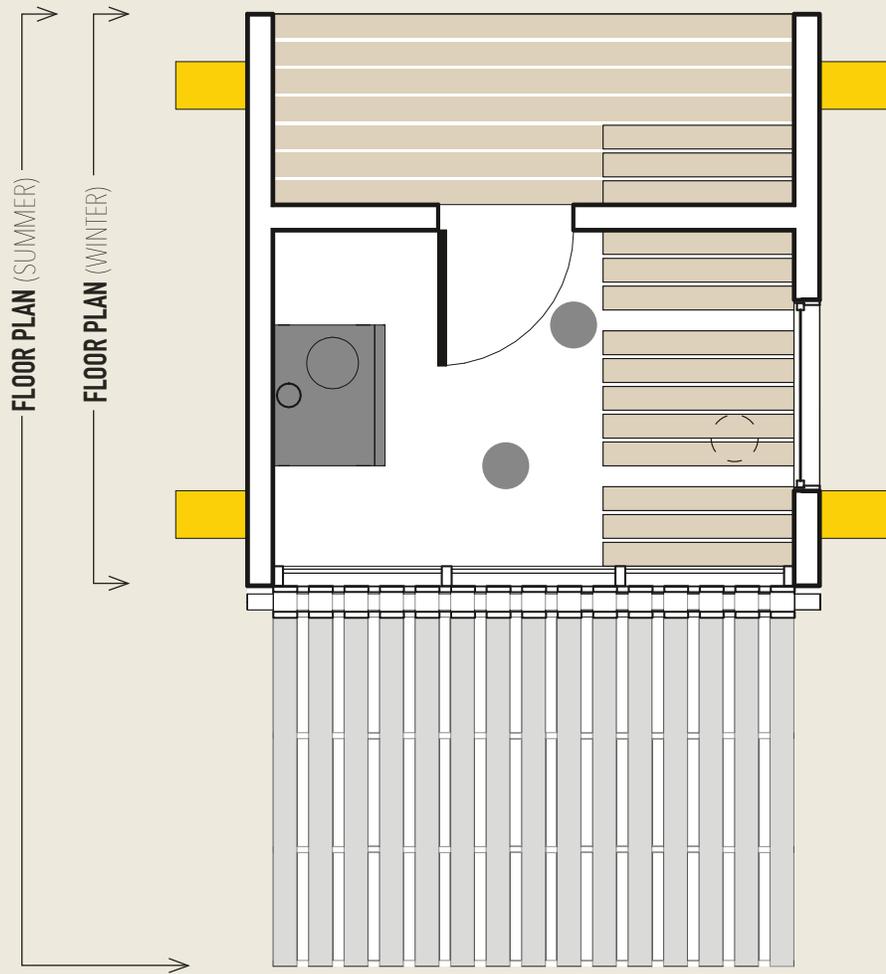
.2 HOUSE

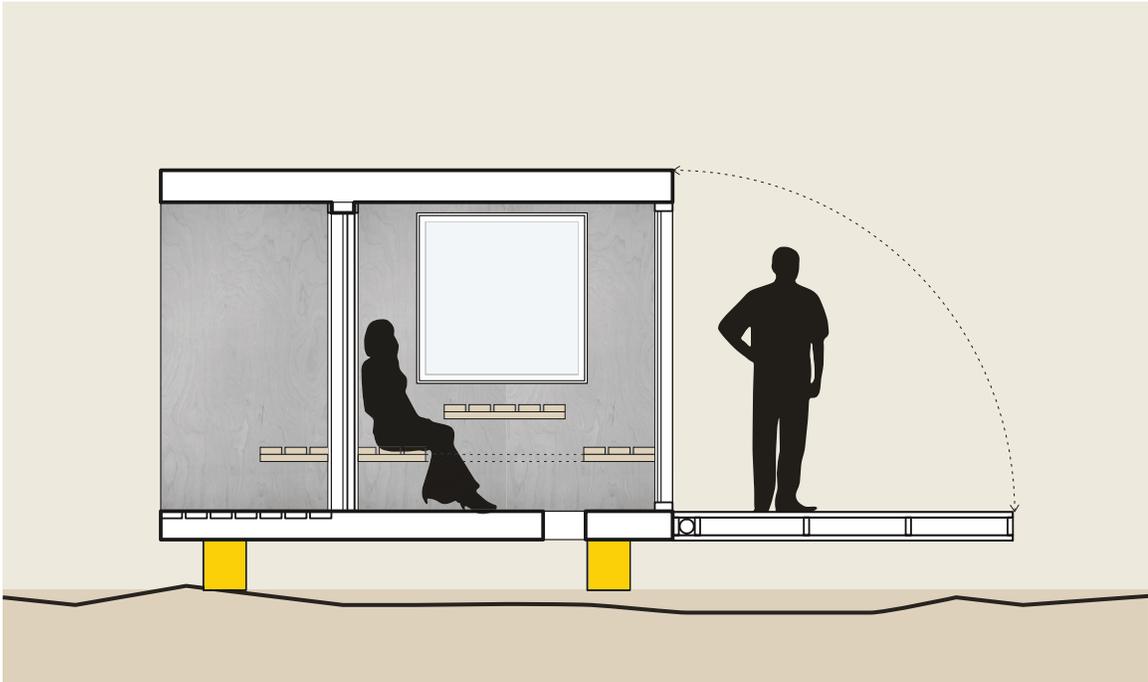
This house accommodates all domestic functions: cooking, dining, and sleeping. The interior space measures 8' x 12'. The dimensions of the design have been considered to optimize use of materials to minimize waste (i.e. plywood, and wood for framing). It is built on sleds to facilitate transportation on and off the ice.

Due to the limited liveable floor space, certain design considerations have been made to optimize and expand the use of space:

1. The rear wall of the house can be folded down in the summer to reveal a glazed wall. This act doubles the square footage and creates a more permeable relationship to the outdoors.
2. The dining table can fold away when not in use and comes together to for a bed in the evening.
3. The dining seats also function to provide comfort when one is fishing within the home in winter.



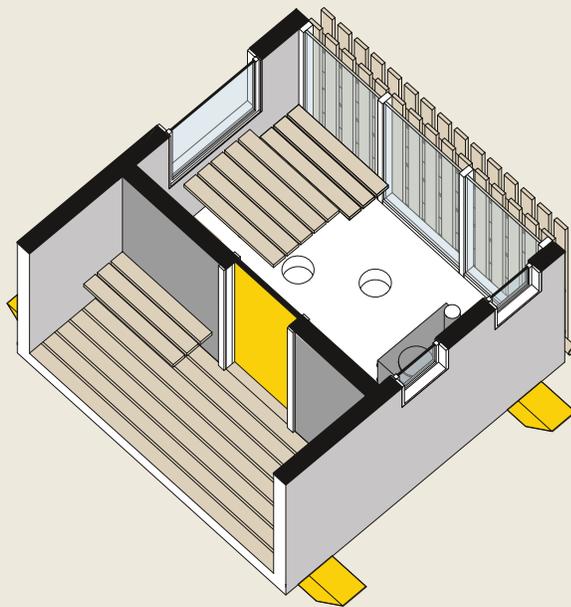




↑ EAST SECTION (SUMMER) ↑

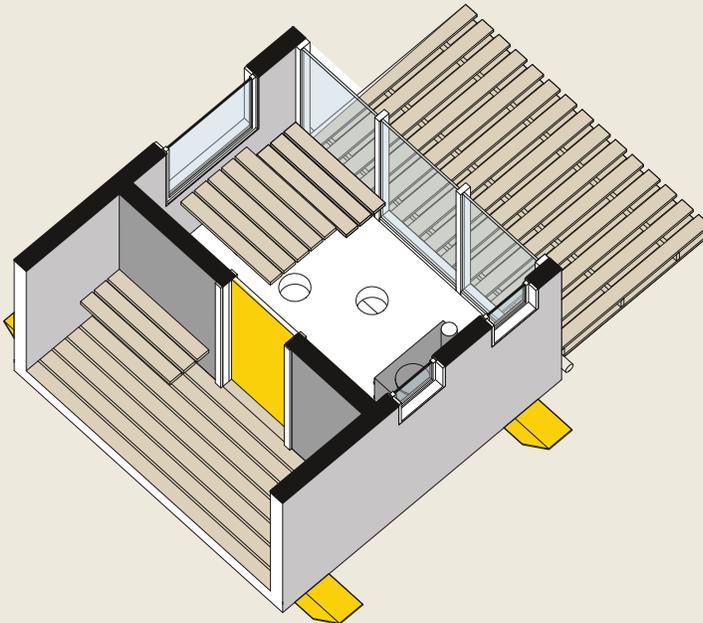
↓ WEST SECTION (WINTER) ↓





↑
AXONOMETRIC SECTION (WINTER)
↑

↓
AXONOMETRIC SECTION (SUMMER)
↓



.3 COMMON HOUSE

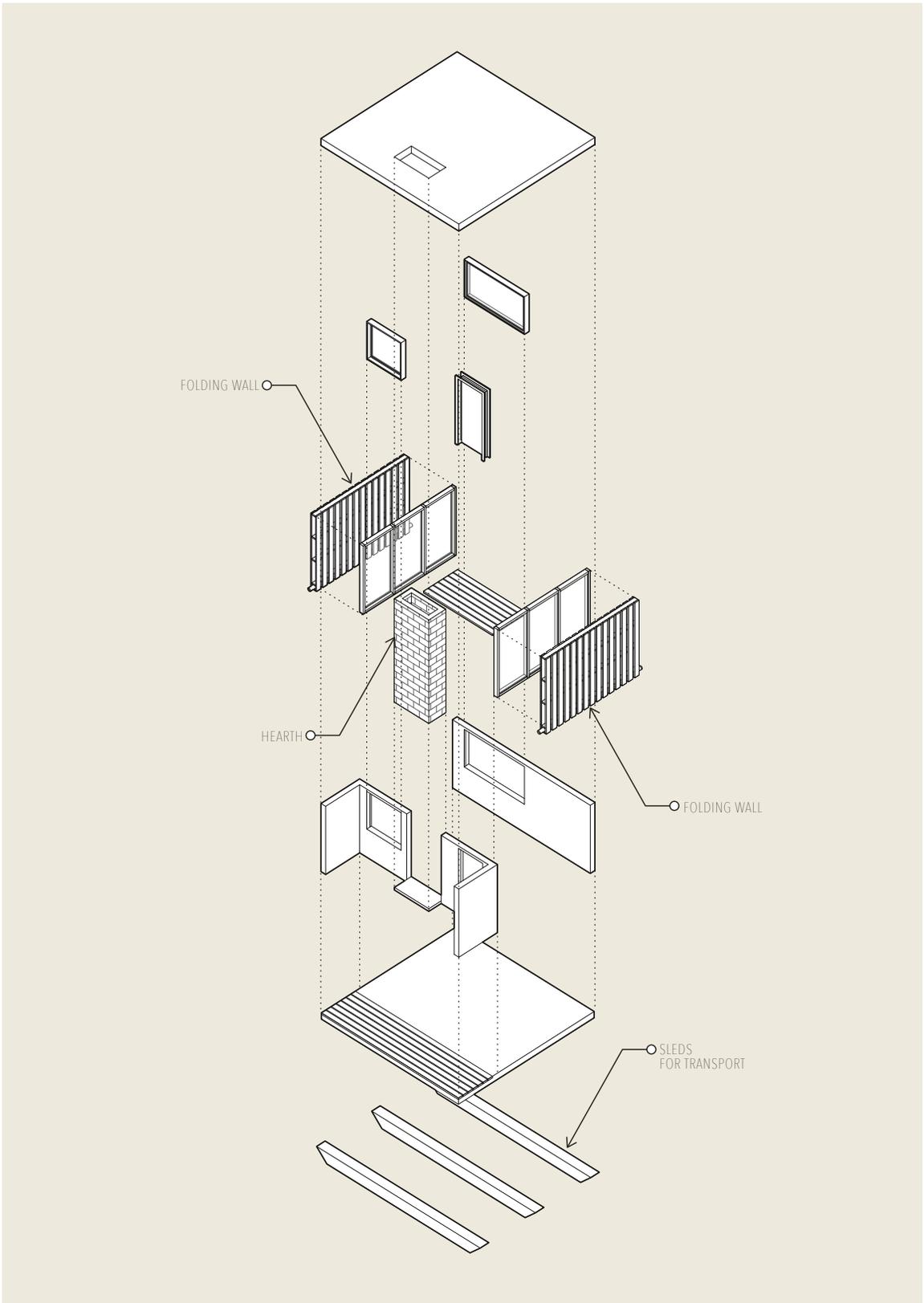
This building has been designed to accommodate the overflow of activities that will take place in a community. Its primary function is shelter and community engagement. Program suggestions include: meeting place, large dinners, yoga room, dance hall, community kitchen, theatre, etc.

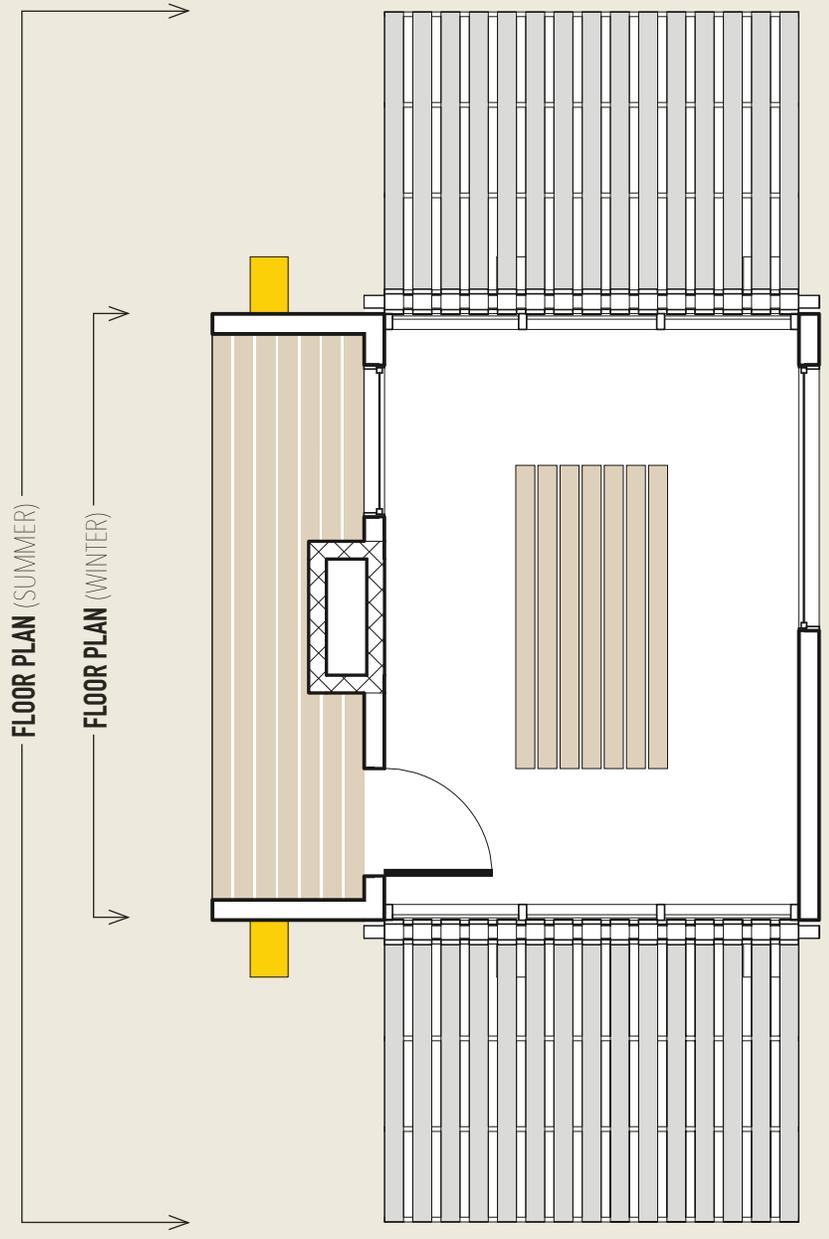
This is a building for gathering so it has been outfitted with that in mind. Similar to the house, this building features:

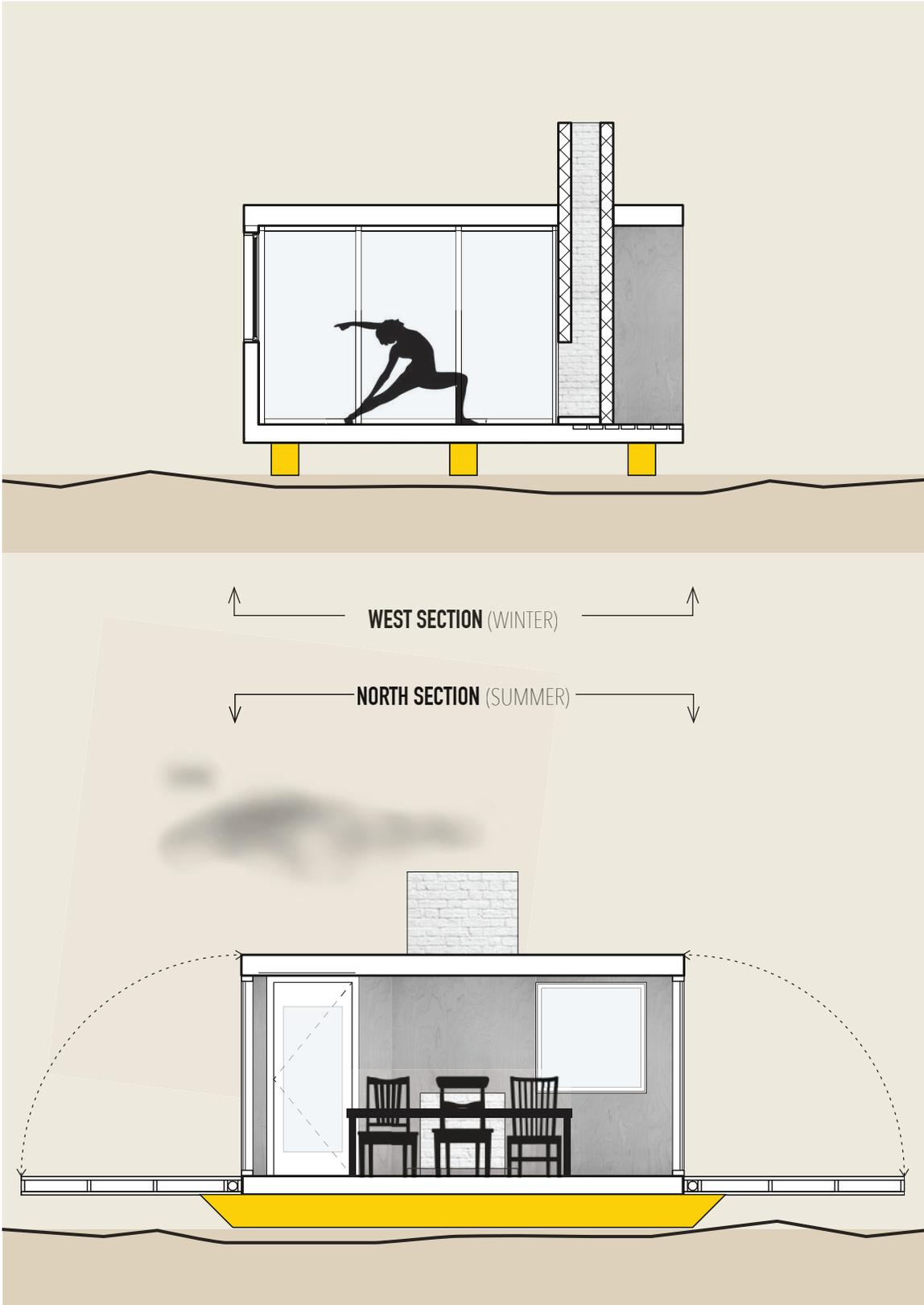
1. Two folding walls which create one large linear space in the summer.

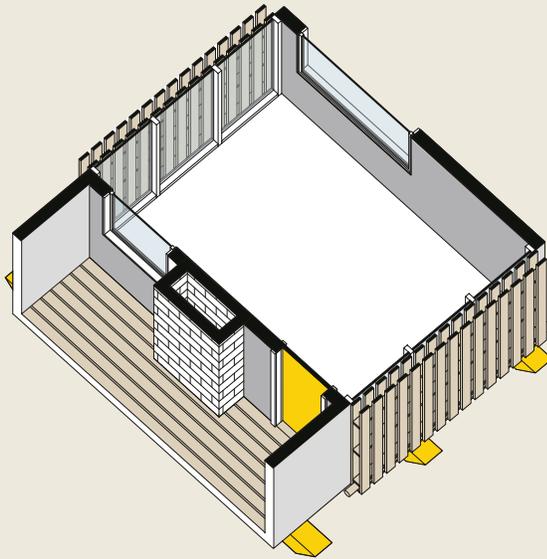
Specific design elements include:

1. A dining table that can raise and lower when not in use. It also functions as a counter when the space is functioning as a kitchen.
2. A central hearth.



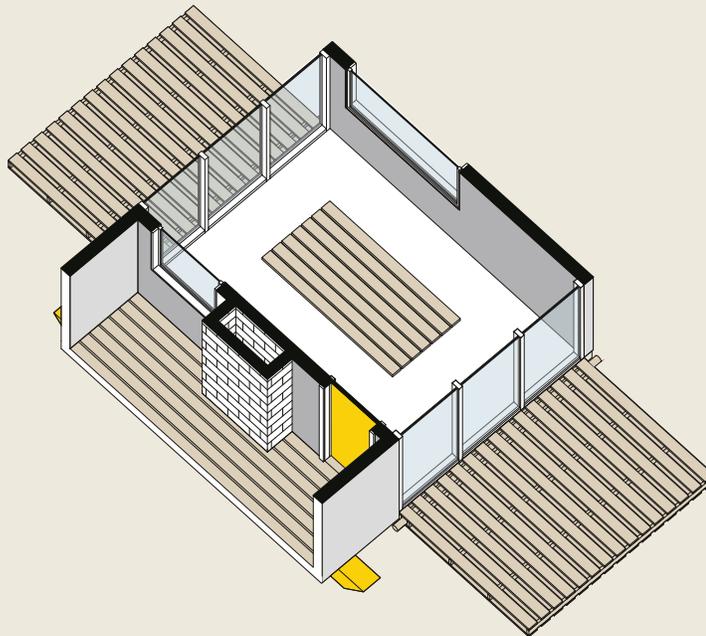






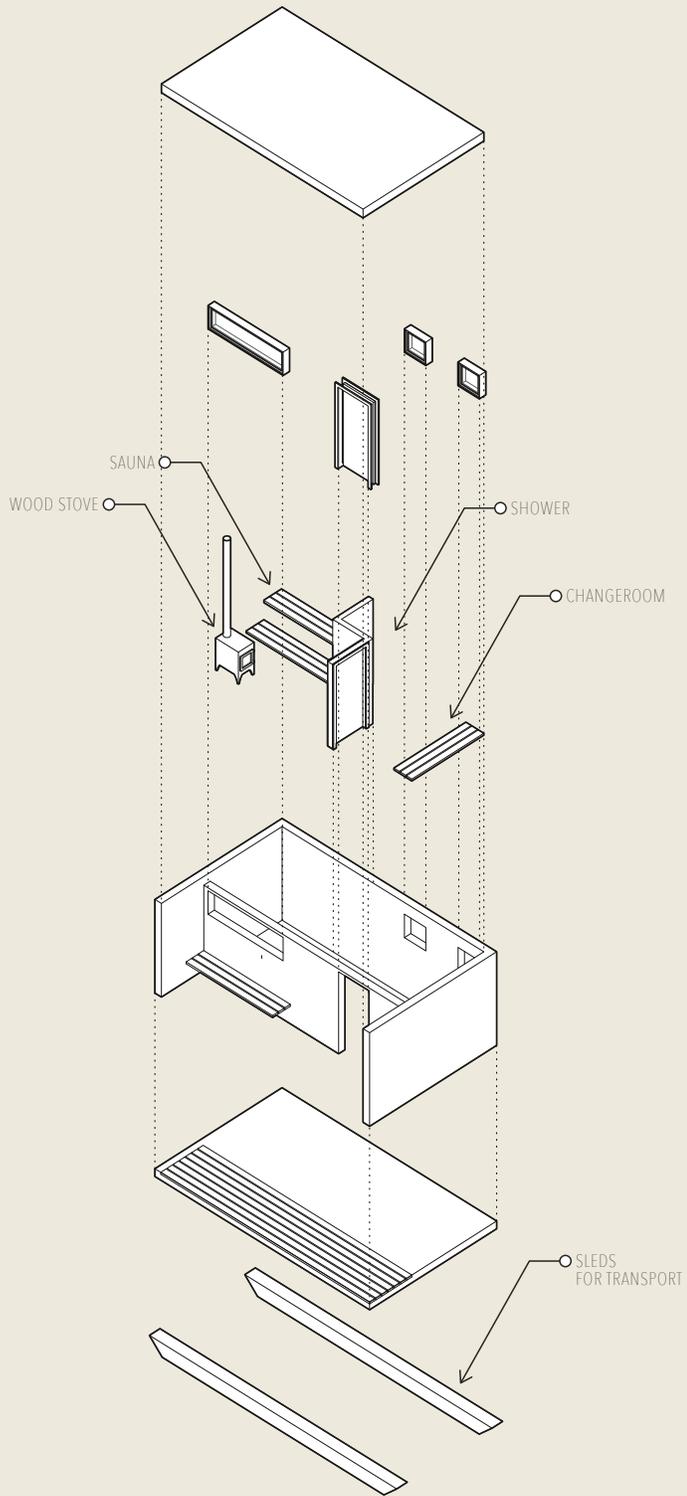
↑ AXONOMETRIC SECTION (WINTER) ↓

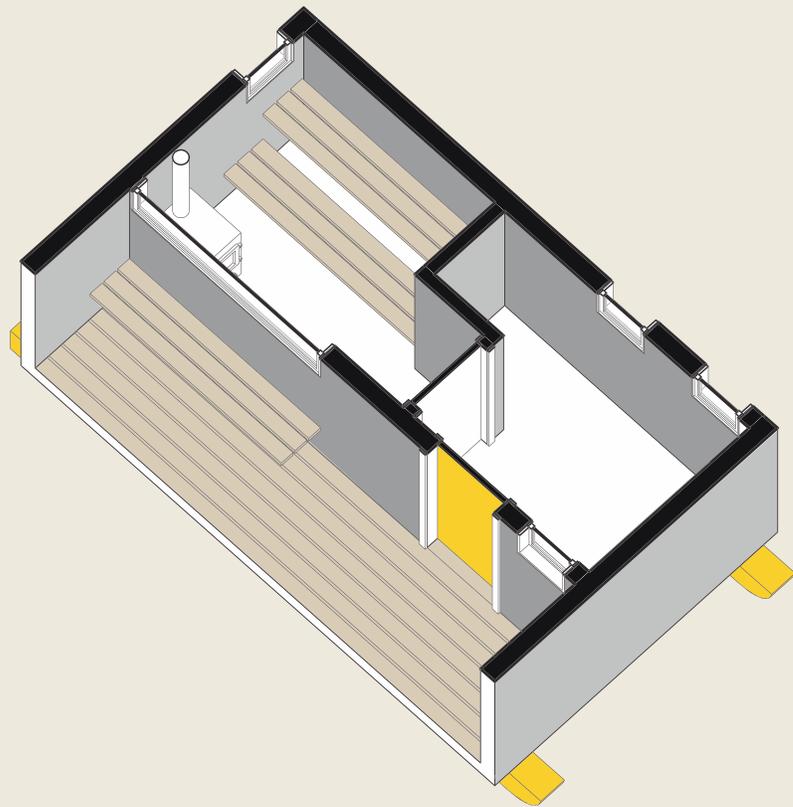
↓ AXONOMETRIC SECTION (SUMMER) ↓



.4 SAUNA

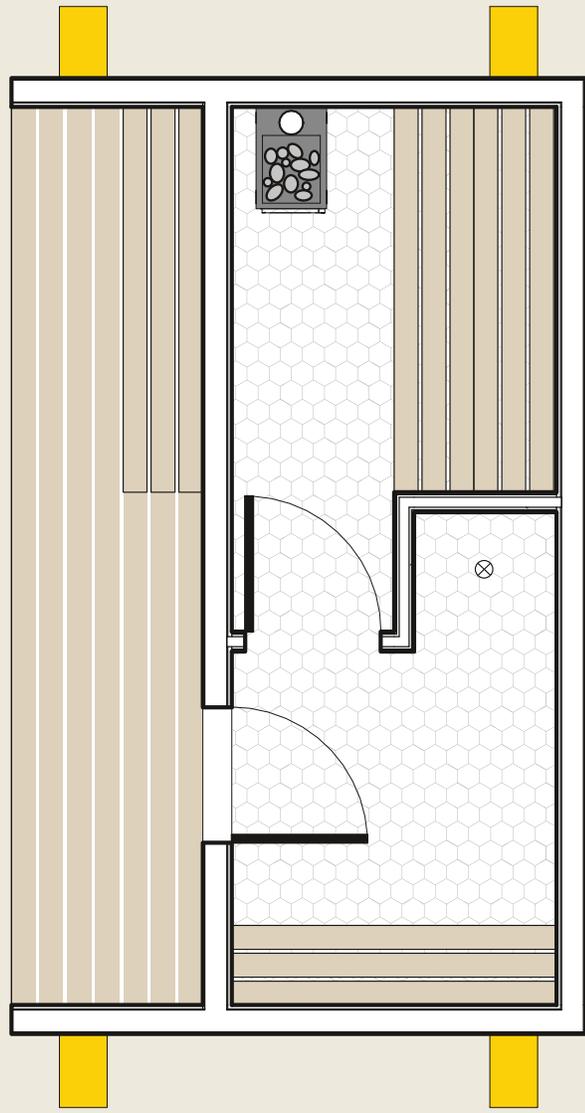
Inspired by the Finnish sauna and Ojibwa sweat lodge, the primary function of this building is to provide a space for personal cleansing. Secondary benefits include community bonding and relaxation. While most space has been lent to the sauna portion, this building also includes a shower and change room facility. The porch becomes especially suitable for cooling off and observing the beautiful scenery.

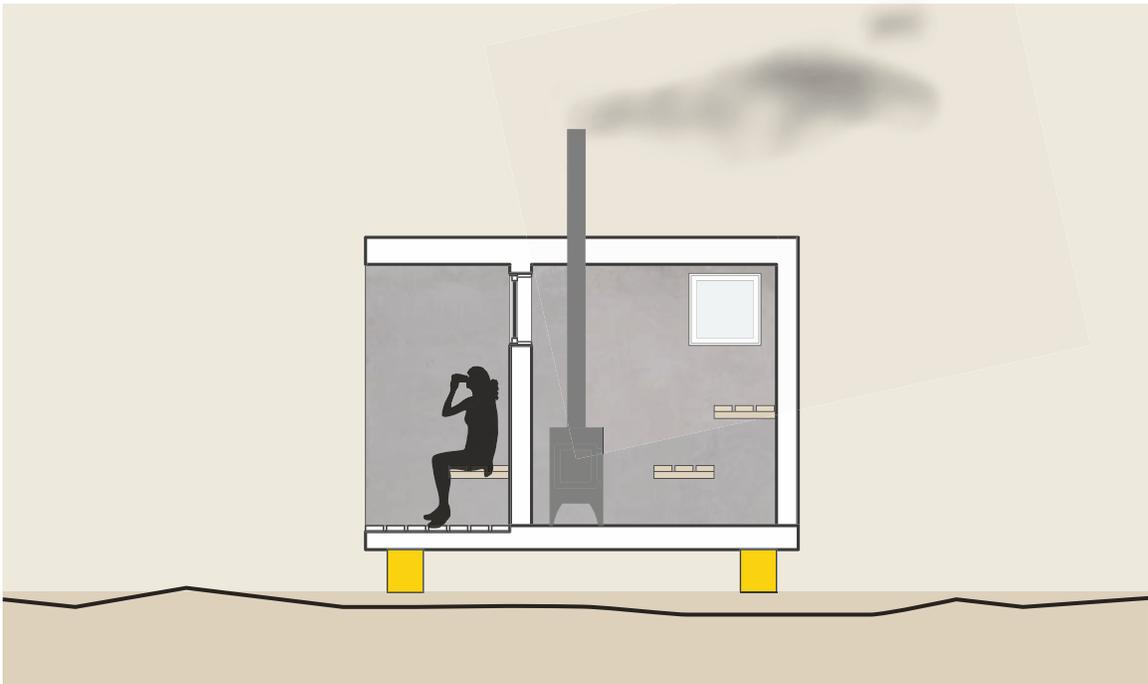




↑ ————— AXONOMETRIC SECTION ————— ↑

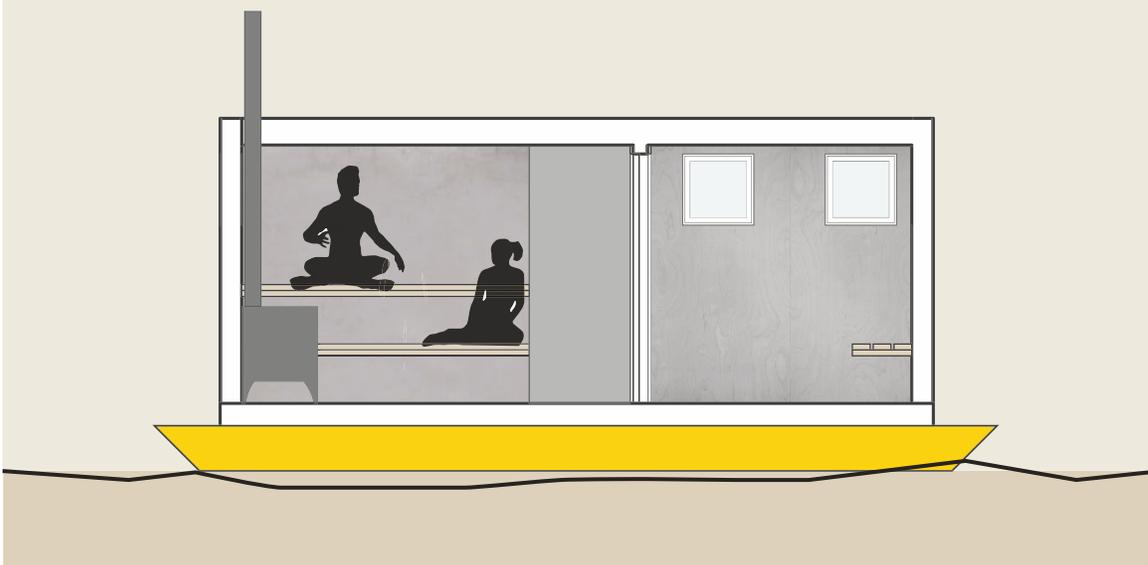
PLAN





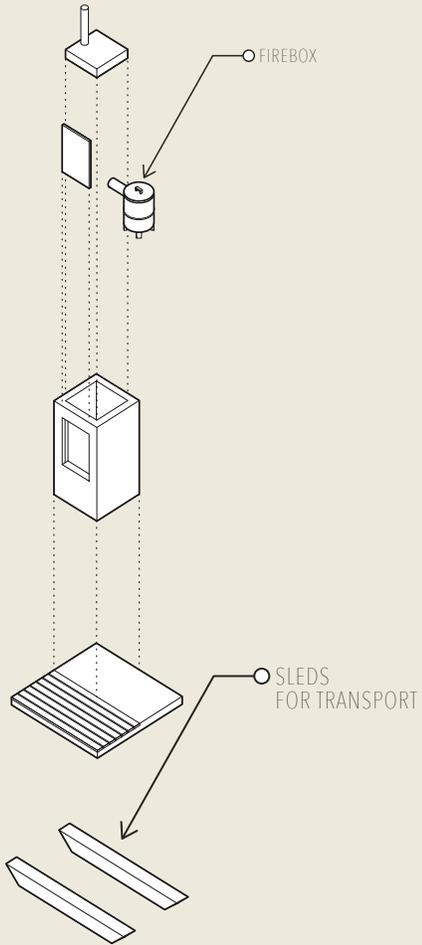
↑ ————— **EAST SECTION** (SAUNA & PORCH) ————— ↑

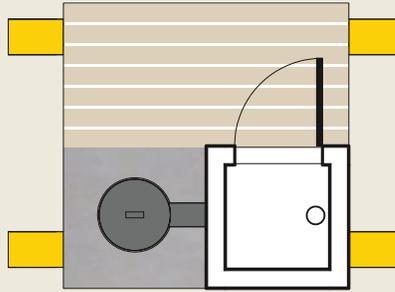
↓ ————— **SOUTH SECTION** (SAUNA & CHANGEROOM) ————— ↓



.5 SMOKEHOUSE

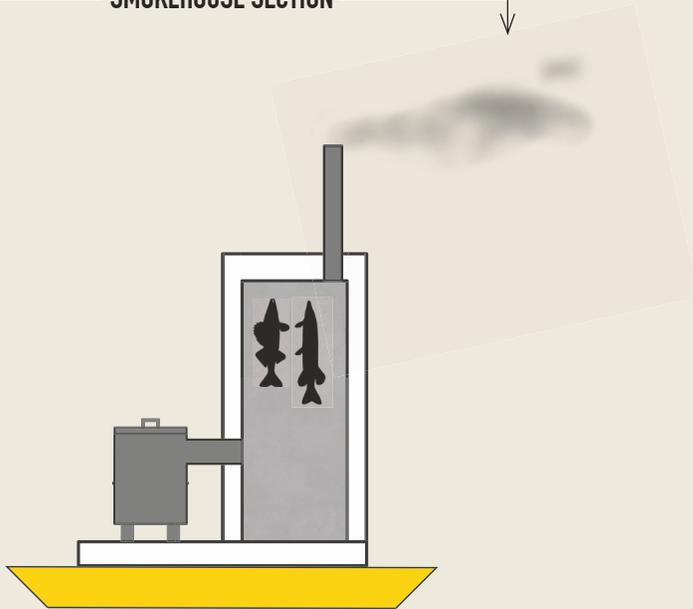
An essential tool for survival, a smokehouse was incorporated into this proposal for the process and preservation of fish and game. Inspired by the Ojibwa tradition to preserve quantities of food for the winter, it is simply constructed and based off of traditional designs. A fire is started in the canister on the side which funnels smoke into the main chamber of the unit. The smoke slowly cures the meat and excess is exhausted from the top.





↑ **SMOKEHOUSE PLAN** ↓

↓ **SMOKEHOUSE SECTION** ↓



3.2 MODEL PHOTOS





HOUSE
(FRONT ELEVATION)



HOUSE
(SIDE ELEVATION)



COMMON HOUSE

(FRONT ELEVATION)



COMMON HOUSE

(SIDE ELEVATION)



SAUNA

(FRONT & BACK ELEVATION)



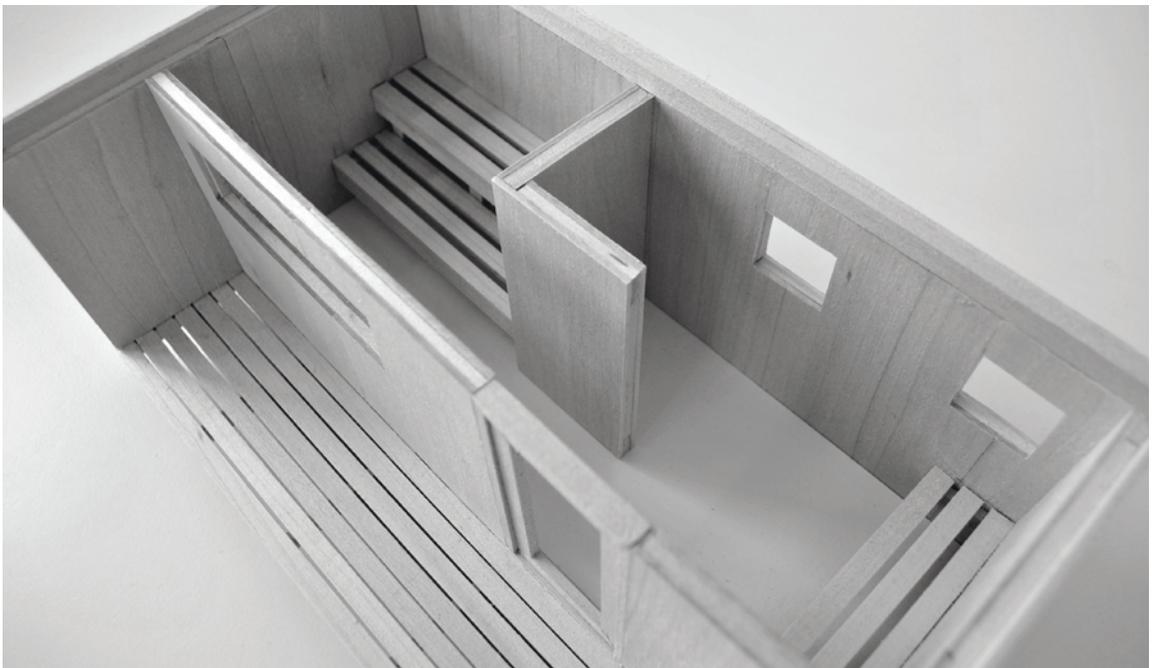
SMOKEHOUSE

(FRONT & SIDE ELEVATION)



COMMON HOUSE

(DETAILS)



HOUSE (ABOVE) & SAUNA (BELOW)

(DETAILS)

3.3 CONCLUSION

The food security of Thunder Bay is challenged by the city's geographical location, climate, and management of resources. This thesis has been an investigation into the traditional ways of living off the land, what led to its demise, how it transitioned into a recreation, and what can be done to reestablish this connection with our environment. The architectural proposition has combined design features from traditional indigenous architecture and modern recreational shelters to suggest new possibilities for living in a community that is sustained by food harvested from the natural surroundings of Thunder Bay, Ontario.

POSTSCRIPT

The initial design for this project drew heavily on the ice fishing shack and how to engage the structure in the summer. The investigation was focused on how the building could transform with the welcome of new seasons and lend itself better to the changes in seasonal hunting and gathering. The end result can be seen as a “glorified ice shack” which undoubtedly stems from its beginnings as an ice shack. Although not explored in depth, there is potential for the individual buildings to be arranged in interesting configurations. By separating all of the individual functions of a house into separate small buildings, one can envision components being clipped on and customizable which could then be detached for transportation.

This thesis has themes rooted in the economic, environmental, historical, social and cultural incentives of food foraging. Ideas about self-sufficiency, back-to-basics, and pared down lifestyles have been engrained throughout process. It should also be noted that this proposal does not intend to standardize the designs of ice shacks. One of the most endearing features of ice shacks in their current state is their individuality and freedom of expression.

PART 4

Appendix

A. NOTES

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- 6 Boulet, *Beyond the Fields*, 40.
- 7 Ibid., 9.
- 8 Tronrud, Thorold. *Thunder Bay: From Rivalry to Unity*. (Thunder Bay, Ont: Thunder Bay Historical Museum Society, 1995), 101.
- 9 The City of Thunder Bay. *Culture and Heritage*.
- 10 Danziger, Edmund Jefferson. *The Chippewas of Lake Superior*. (148 Vol. Norman: U. of Oklahoma P, 1979), 25.
- 11 Ibid., 9.
- 12 Densmore, Frances. *Chippewa Customs*. (New York: Johnson, 1970), 27.
- 13 Ibid., 120.
- 14 Danziger, *The Chippewas of Lake Superior*, 9.
- 15 Ibid., 18.
- 16 Ibid., 14.
- 17 Densmore, *Chippewa Customs*, 124.
- 18 Ibid., 128.
- 19 Danziger, *The Chippewas of Lake Superior*, 13.
- 20 Ibid., 12.
- 21 Bogue, Margaret Beattie. *Fishing the Great Lakes : an Environmental History, 1783-1933*. (Madison, Wis.: University of Wisconsin Press, c2000), 7.
- 22 Danziger, *The Chippewas of Lake Superior*, 11.
- 23 Tronrud, *Thunder Bay: From Rivalry to Unity*, 16.
- 24 Ibid., 18.
- 25 Bishop, Charles A. *Northern Ojibwa and the Fur Trade*. (Toronto: Holt, 1974), 13.
- 26 Tronrud, *Thunder Bay: From Rivalry to Unity*, 100.
- 27 Manore, Jean L. and Dale G. Miner. *The Culture of Hunting in Canada*. (Vancouver : UBC Press, c2007), 240.
- 28 Ibid., 239.
- 29 Ibid., 240.
- 30 Ibid., 127.
- 31 Ibid., 97.

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- 32 Manore, *The Culture of Hunting in Canada*, 118.
33 Ibid., 118.
34 Ibid., 240.
35 Ontario Ministry of Natural Resources.
36 Boulet, *Beyond the Fields*, 24.
37 Government of Ontario. *Heritage Hunting and Fishing Act, 2002*.
38 Government of Ontario, *Treaties*.
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