Steam? More STEAM!
Using an Architectural Approach to Preserve Cultural Knowledge in Sudbury, Ontario with a Community Sauna

by

Candice Kinnunen

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APPROVED/APPROUVÉ

Thesis Examiners/Examinateurs de thèse:

Tammy Gaber
(Thesis Advisor / Directeur(trice) de thèse)

Fred Thompson
(Thesis Second Reader / Deuxième lecteur(trice) de thèse)

Richard de la Riva
(External Examiner / Examinateur(trice) externe)

Approved for the Office of Graduate Studies
Approuvé pour le Bureau des études supérieures
Tammy Eger, PhD
Vice-President, Research (Office of Graduate Studies)
Vice-rectrice à la recherche (Bureau des études supérieures)

ACCESSIBILITY CLAUSE AND PERMISSION TO USE

Steam? More STEAM!

Using an Architectural Approach to Preserve Cultural Knowledge in Sudbury, Ontario with a Community Sauna

Sauna is a building,
A room,
A ritual,
A reason for visiting family and neighbors,
A place to cleanse the mind, body, and soul
Reflect on the day and your life.
It is a temple to our heritage and our traditions,
And a shrine to our ancestors who carried it with them to the new land.

- The Sauna,
Malba Majava Hansel[1]

1 David William Salmela, Saunas : Short Stories, Poems, Illustrations, and Photographs, (edited by David William Salmela, Minnetonka, MN: Otsa Press, 2021) 38- 39.

Abstract

In many communities, cultural knowledge of communal bathing rituals have been passed for thousands of years. One of which is Finnish cultural knowledge of the sauna bathing ritual. In the 1900s, over 250 000 single origin Finnish people moved and settled in Ontario, Canada.[2] However, with Finnish-Canadians, the gaps in the cultural knowledge has increased with subsequent generations. Today, Sudbury is still called home to over 7000 residents with Finnish heritage, however there are no community saunas operating within the city.[3] These unsettling issues thus indicated that a thoughtful approach is needed to ensure the passing of Finnish cultural knowledge of the sauna continues; one that does not require users to have Finnish heritage to benefit from the knowledge. This thesis proposes mixing architectural concepts of traditional Finnish sauna building knowledge and design with a community-built approach a design proposal that recognizes these issues and supports the cultivation of the continuity of cultural knowledge.

Key words

Cultural knowledge

Communal bathing

Sudbury

Craft

Sauna

2 Oiva W. Sarineen, Between a Rock and a Hard Place: A Historical Geography of the Finns in the Sudbury Area, (Waterloo, ON: Wilfrid Laurier University Press, 1999) 19.

3 Alex Ross, "May 2019," The Walleye, August 1, 2018, http://www.thewalleye.ca/may-2019/, 73.

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I wish to acknowledge the following people who have supported me throughout this process.

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To my friends and family, thank you for all your support through this project. I would have not made it this far without you.

To my classmates, thank you for the supportive gestures, creative atmosphere and all the late night studio laughs.

To the Finnish community of Sudbury, thank you for your generous support throughout the research process.

Land Story

I'd like to begin my Thesis Defense today by recognizing that Laurentian University McEwen School of Architecture is located on the traditional lands of the Atikameksheng Anishnawbek and that the Greater City of Sudbury also includes the traditional lands of the Wahnapitae First Nation.

I acknowledge that my grandparents and parents come from Nurmo, Finland and the Finnish traditions I have learned from them. I also acknowledge the traditional lands which I grew up on and the long-standing presence of Indigenous Peoples in this territory.

As a visitor on this land and a descendant of settlers, I extend my deepest respect to all Indigenous Peoples and their lands as a key step towards reconciliation.

Miigwech. Thank you. *Kiitos* (thank you).

Table of Contents

List of Figures

(ii) Sauna floor assembly
Image by author. Digital image. 2023.

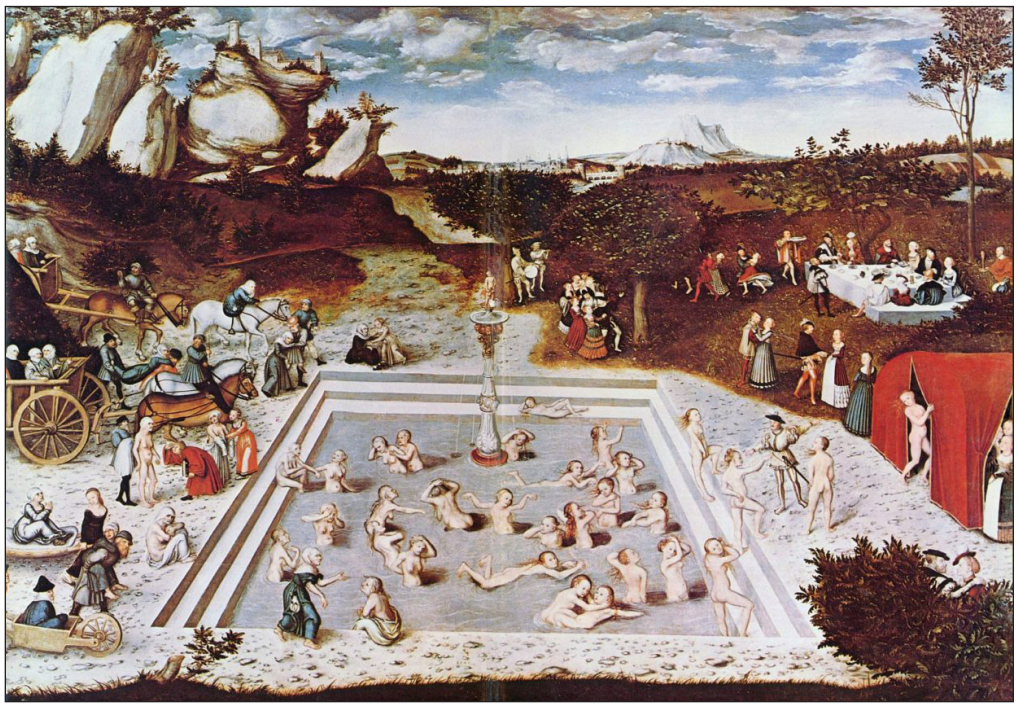
(iii) Sauna interior wall assembly
Image by author. Digital image. 2023.

(iv) Sauna roof assembly
Image by author. Digital image. 2023.

(v) Sauna window detail
Image by author. Digital image. 2023.

(vi) Dovetail connection
Image by author. Digital image. 2023.

(vii) Exterior pathway handrail
Image by author. Digital image. 2023.



[0.1] The Fountain of Youth

Lucas Cranach the Elder, 1546

Painting depicts a spring which restores the youth to all those who bathe in the waters

Introduction

There are communal cleansing processes present in many cultures globally reflective of their values and environment. The Finnish culture has been performing the sauna bathing ritual for thousands of years; usually in a forested near a body of water. The sauna process begins with the journey to the sauna where the *kiuas* (sauna stove) is lit and the bathers wait for the stones and steam room to become hot. Once the sauna is ready, the bathers rinse their bodies, enter the steam room and commence in the ritual of pouring water on the stones to create *löyly* (steam). Once the bathers are hot and perspiring, they run towards the lake and dip their steaming bodies in the cool waters. This process is repeated until the bathers feel satisfied. Traditionally, after the sauna the bathers will gather, share stories and have a meal together.

communal cleansing

kiuas (stove)

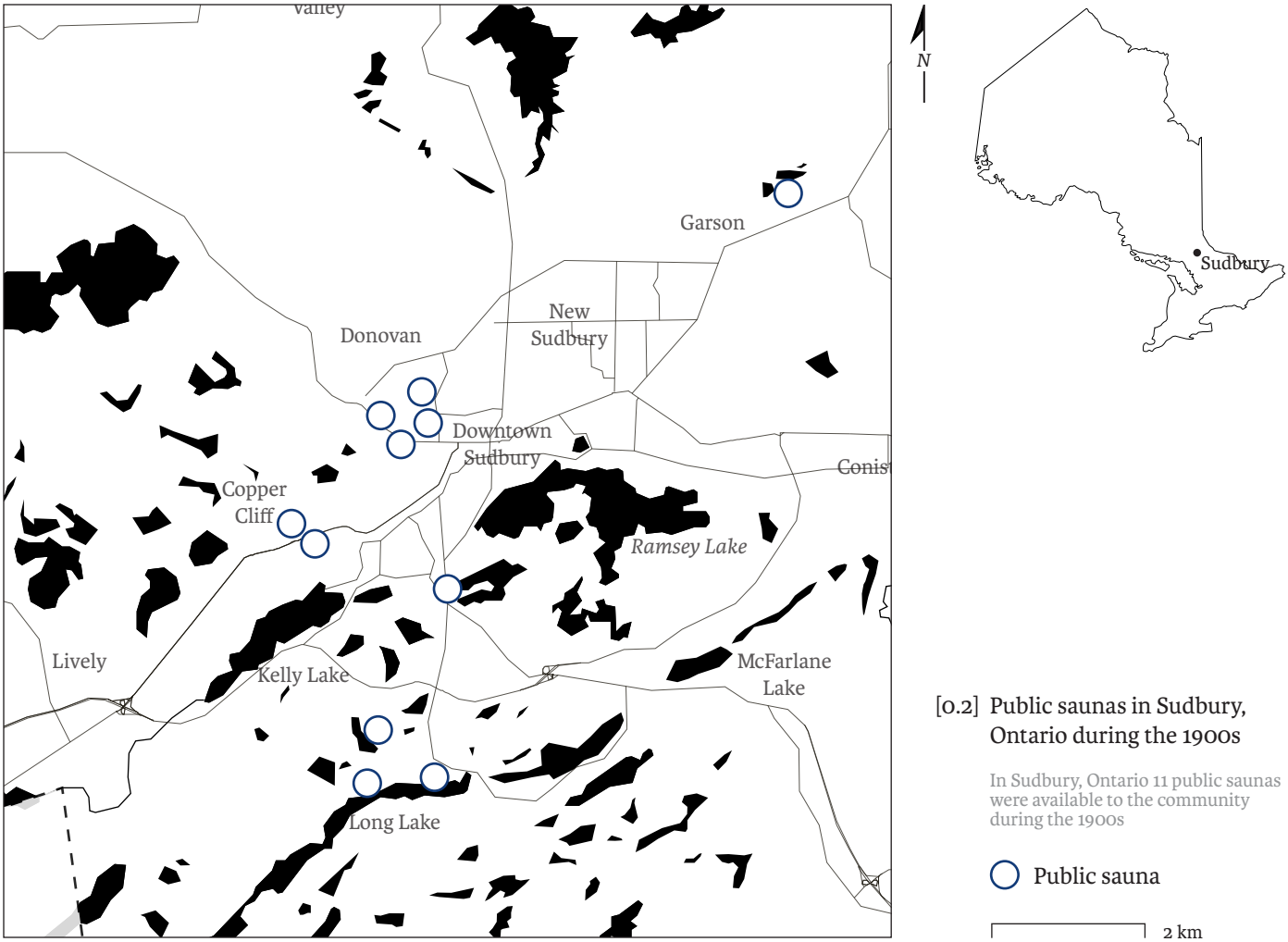
löyly (steam)

Finnish immigrants brought with them cultural knowledge of the sauna bathing ritual which would be passed down through generations. However, due to cultural assimilation, mixed marriages and a negligible number of new Finnish immigrants has led to fewer Finnish Canadian's learning the Finnish language, cooking traditional foods, celebrating Finnish holidays and taking part in the traditional Finnish sauna process. This ultimately leads to a trickle down effect of cultural knowledge, creating a gap between generations and Finnish heritage becoming an increasingly symbolic

cultural knowledge

cultural knowledge gap

symbolic ethnicity



[0.2] Public saunas in Sudbury, Ontario during the 1900s

In Sudbury, Ontario 11 public saunas were available to the community during the 1900s

ethnicity for Finnish Canadians.

The City of Sudbury in the Province of Ontario, Canada, which has a high population of Finnish immigrants, once saw several lakes with 11 public saunas (See Figure 0.2). Today, Sudbury is still called home to a significant number of residents with Finnish heritage, however there are no public saunas operating in the city. This unsettling fact made it clear that a thoughtful approach is needed to ensure that the passing of Finnish cultural knowledge of the sauna continues; one that does not require users to have Finnish heritage to gain and benefit from the knowledge. By mixing architectural concepts of traditional Finnish sauna building knowledge and design with community-built approach to form the design process - this thesis project aims to contribute to the preservation and sharing of Finnish cultural knowledge for the community of Sudbury and next generation Finnish Canadians.

City of Sudbury

public saunas

knowledge preservation

This thesis explores the potential roles traditional sauna building and heating methods could have in preserving the tangible and intangible cultural knowledge associated with the sauna bathing ritual in a publicly accessible sauna. Architecture has the potential to preserve Finnish cultural knowledge by sharing the traditional Finnish sauna building methods with the community. Supported

traditional sauna building method

by the concept of sharing knowledge in order to preserve knowledge, community-built architecture can be used as it offers a method of preserving cultural knowledge by sharing which is not readily available to the public.

share cultural knowledge

It is worth mentioning that extensive efforts have been made by members of the Finnish community to record, gather and preserve quantitative and qualitative data of Finnish Canadian's history and the positive impact they have made on their communities. The proposed response to the Finnish cultural knowledge gap consists of an architectural approach to preserve the Finnish cultural knowledge with a design that envisions a community built traditional sauna as a shared resources to inspire more of these institutions. By working through design, this research directly approaches the desperate need to preserve the Finnish cultural knowledge of the traditional sauna building methods and ritual within the community of Sudbury.

cultural knowledge sharing institutions

This architectural response to fading Finnish cultural knowledge has been expressed by synthesizing existing artistic works of paintings, songs, poems, and stories. The unique and personal perspectives illustrated through these art forms has created a cultural experience archive in which knowledge preservation theory can be applied to its utmost potential. The architectural proposal has been grounded in an understanding of the existing Finnish traditions and sauna ritual knowledge, which was experienced during my Finnish-Canadian upbringing. Finally, the two aspects of this design were ignited by an appreciation of cultural knowledge sharing and an understanding that these types of spaces must involve the community in order to continue the passing of this cultural knowledge through generations.

artistic works

architectural response

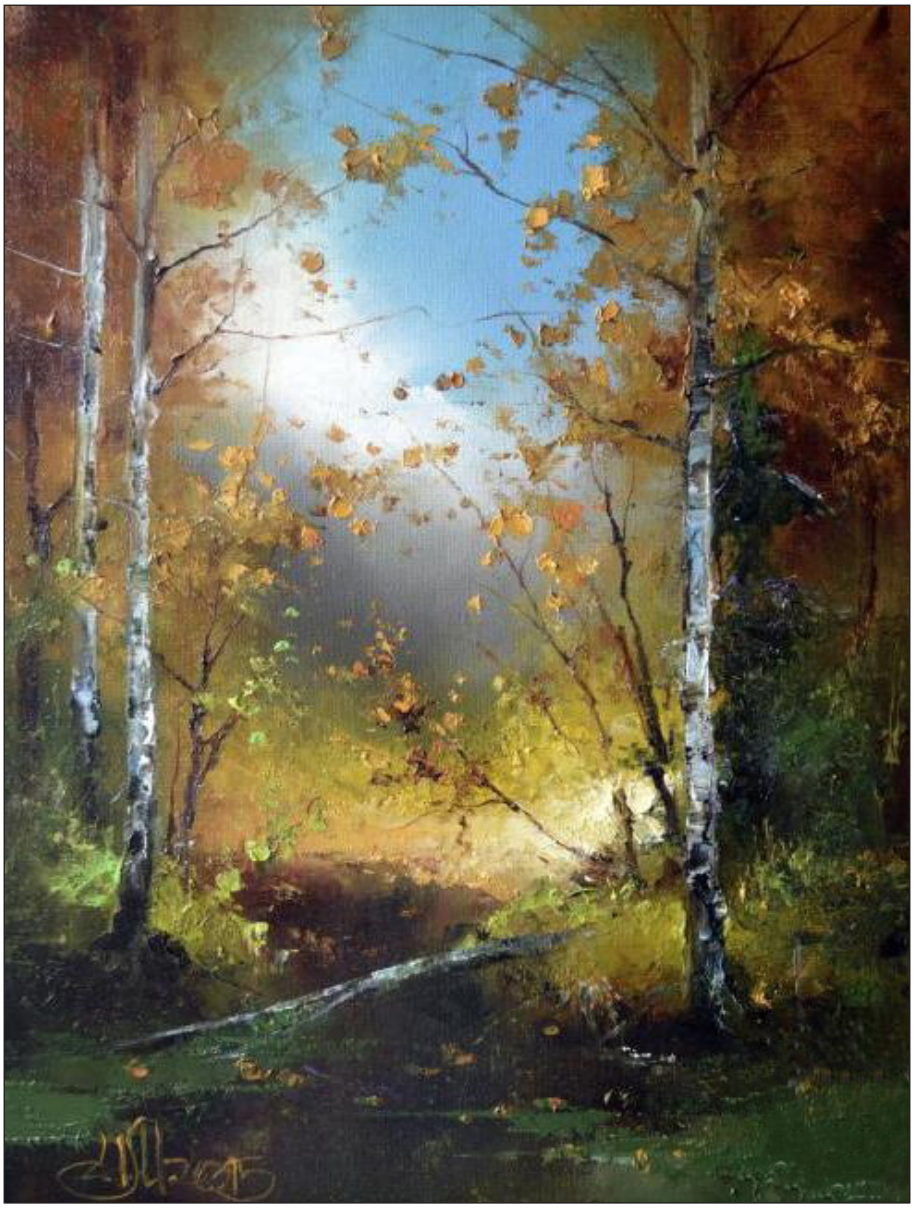
The architectural proposal is pictured as a journey within the ritual as the string and the moments along the way as the stones. The project, *Kokoontua Sauna* (Gather in the Sauna), highlights the elements of the Finnish sauna ritual through architecture. The design encompasses a journey through the forest, a secluded changing area, wood fired sauna nestled among the trees on top of a sandstone outcrop, and a pier providing access to the steel-blue waters of Ramsey Lake; for the users to perform the Finnish sauna bathing ritual. This project proposes the building materials are acquired from the site as it would be for a traditional Finnish sauna.

Kokoontua Sauna (Gather in the Sauna)

traditional building methods

This architectural approach to Finnish cultural knowledge preservation can aid in knowledge sharing; it can also inspire a motion towards the preservation and sharing of cultural knowledge for communities. *The Kokoontua Sauna* concept is rooted in cultural knowledge sharing and preserving design and research, but it also aims to support those who have accomplished great work in their efforts to preserve Finnish cultural knowledge in the City of Sudbury.

preserve cultural knowledge



[1.1] Autumn time

Medvedev Igor, 2015

Journey: What it means to bathe as community

The custom of communal bathing among ethnic cultures is largely considered a rite which is shared and enjoyed with friends and family. Historically, the dynamic, social spaces of bathhouses have strengthened social bonds within communities. Christie Pearson states in her book The Architecture of Bathing: Body, Landscape, Art: "a public bath can offer physical hygiene, spiritual cleansing, relaxation, socializing, sensual pleasure, ritual, connection to nature and a sense of group belonging."[1] A few of the most common and pleasurable communal bathing rituals include the Finnish sauna, ancient Roman bath, Turkish *hammam*, Japanese *onsen*, Russian *bania* and Lakota Sioux *inipi*. An analysis of these spaces and ritual process shows that although these spaces and rituals are vastly different they all have the same purpose: cleansing as community. Cleansing and the architecture associated with it means something different in every culture, however, consistently the act of bathing brings communities together as an equalizer. This chapter will analysis the six communal bathing rituals by examining their history, bathing sequence and program outline and an analysis of a typical existing floor plan.

[1.2] Painting of a Finnish sauna

Shows three men partaking in a sauna bathing ritual

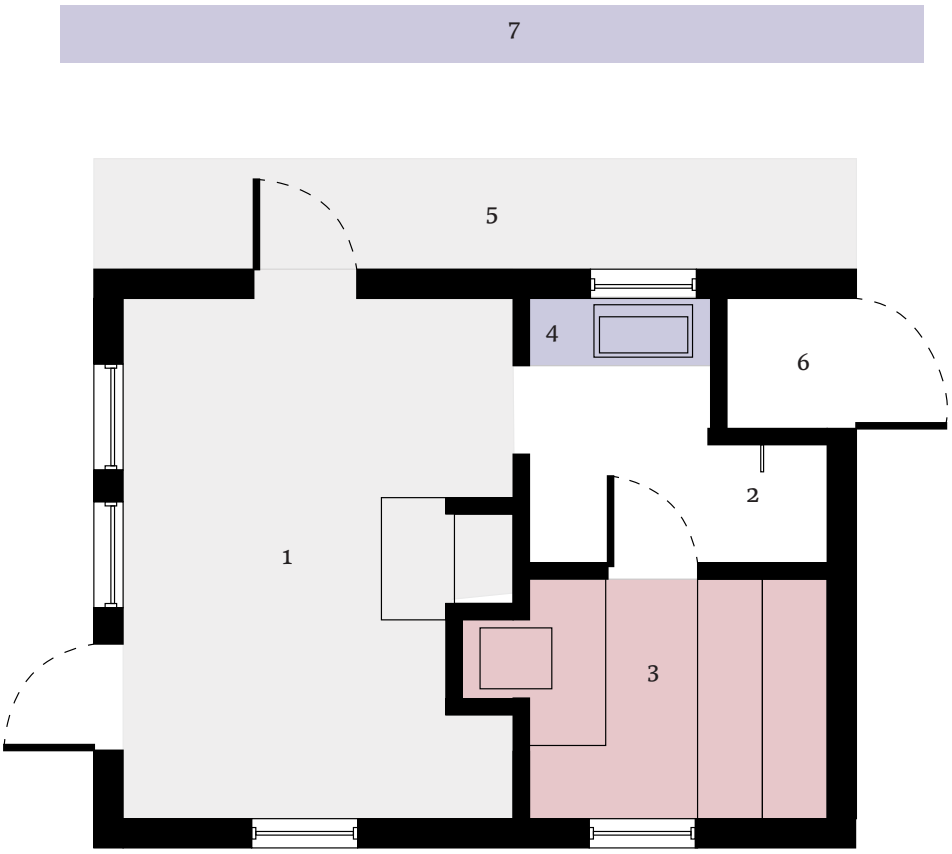
Finnish Sauna

The traditional Finnish sauna was built using log construction and was situated in a forested area near a body of water. A typical layout requires three rooms which include the washing/ rinsing room, steam room and a room for the purpose of the bathers to gather and rest once the sauna ritual is complete. The steam room is often dimly lit with a small window which usually faces a body of water. Originally, the sauna was heated with a stove built from piled stones to create a hearth where a fire would be lit inside. Prior to the chimney being incorporated into the stove design, the smoke from the fire would fill the steam room leaving a layer of soot on the interior surfaces. Thus, the interior surfaces would require cleaning before the bathing ritual could begin.[2]

[1.3] Vihta (birch whisk)

Used to beat the skin during a sauna

The sequence of the traditional Finnish sauna is simple yet unique to every individual bather. It is important the bathers feel physically well during and after the sauna as not to exhaust themselves. The bather begins the sequence by rinsing the body then enters the steam room. Once the bather has begun to perspire, a *vihta* (birch whisk) (Figure 1.3) is used to beat their skin promoting perspiration, blood circulation, massages the muscles and tones the skin.[3] When the bather feels hot enough they cool down outside or by immersing themselves in water. Afterwards, the bather will rest while they dry off.[4] The hot and cool cycle is completed when the bather feels they have completed their required number of cycles. Afterwards, the bather would wash themselves in the washing room followed by a quick warm up and thorough cool down. Once the bathing sequence is complete, traditionally the bathers would gather to eat, drink and socialize together. This period of gathering and socializing after the



[1.4] Finnish sauna program analysis

Typical Finnish sauna floor plan highlighting the hot, cool and rest spaces

1 Entry/ Rest area
2 Shower
3 Steam room
4 Cold water bath
5 Outdoor rest area
6 Mechanical room
7 Body of water

Hot space
Cool space
Rest Space

1 m

sauna is vital to the Finnish sauna experience.[5]

The analysis of a typical Finnish sauna, (Figure 1.4) shows the cyclical nature of the sauna ritual in floor plan form. The bathers begin the ritual by entering the entry/rest area which has a fireplace. Directly off this room is the change room used to remove ones clothing and rinse the body. This particular change room also provides a plunge bath for users to cool down. From here, the users enter the steam room which has two levels of benches and the sauna stove. This sauna uses a wood fired sauna stove with a flue which is fed from inside the sauna. Once users are thoroughly heated, they are the option to cool down in the plunge bath, near by body of water or outside in the exterior resting area. The entry area acts as a final gathering and resting space for the bathers once they have finished the sauna process.

Roman Bath

[1.5] Painting of Roman thermae

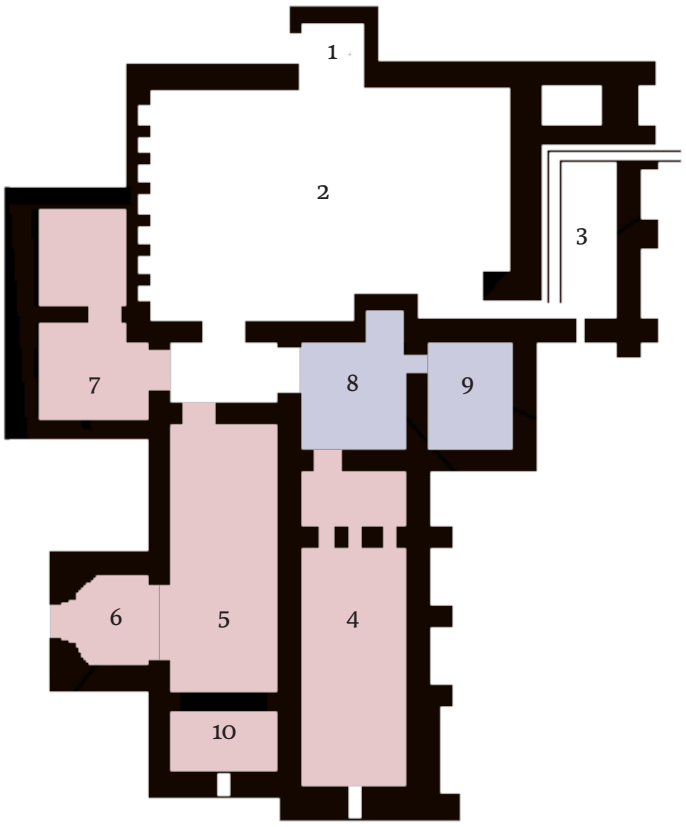
Interior or Roman thermae

During the 3rd century BCE, the Romans were inspired by the Greek process of communal bathing and established bathing facilities throughout their cities. These facilities became extremely popular for the people to enjoy as community centers in the evening before their last meal.[6] These spaces were used by users to exercise, bathe, relax, eat, read and participate in political debates. The most extravagant Roman bathhouses, *thermaes*, could be as large as 250 square meters and included stadiums, lecture areas and reading rooms.[7] *Thermaes* were decorated with bright lighting, terracotta bricks, mosaic floors, marble clad walls, sculptural statues, arched windows and domed ceilings (Figure 1.2). The much smaller *balneae* served the surrounding neighbourhoods. The were constructed with modest building materials like stucco and would be dimly lit.[8]

[1.6] Bronze bathing set

Two strigils and arybollos (oil jar) chained to ring

The sequence of the Roman bath varied between each facility and the bather due to the numerous types of rooms associated with the Roman bathhouse typology. Simply put, there are a variety of different ways one could complete the Roman bath ritual sequence. However, they all included the cycle of heating, washing and cooling the body. Often bathers would engage in strenuous exercise in the *palaestra* (open air exercise room) after entering the *apodyterium* (dressing room) to remove and store their clothing within a recessed wall niche. Occasionally, there was a specific room, *unctorium* (anointing room), available for bathers to oil their skin. There was often a *latrine* (toilet room) located off of the *apodyterium* to be used prior to entering the hot spaces. Once ready, bathers would rotate through various types of hot rooms which



[1.7] Roman balneae program analysis

Chesters balneae in Chollerford, England floor plan highlighting the hot and cool spaces

1 Porch
2 Apodyterium
3 Latrine
4 Tepidarium
5 Calderium
6 Calveus
7 Sudatorium
8 Fridiarium
9 Cold Plunge
10 Boiler

Hot space
Cool space

5 m

could include a *tepidarium* (warming room), *caldarium* (hot room), *calveus* (hot bath) *sudatorium* (steam room), and/or *laconicum* (sweating room). The rooms and associated pools were heated by a furnace with hypocaust to various temperatures (highest temperature is approximately 40 °C). A few hot rooms would include an aperture in the domed ceiling to regulate the temperature.[9] During the hot bathing phase, the bather would exfoliate their skin by scraping the oil off with a strigil (Figure 1.3).[10] Once ready to cool down, the bather would enter the *frigidarium* (cooling room) and plunge into a cold bath or pour cold water on themselves. At this point, the bather had the option to reenter the hot rooms or move on to the *exedra* (rest room). In a *thermae*, bathers had many options to socialize with their community or rest by spending time in a common area, garden, library or other communal spaces.[11]

The analysis of the Roman *banleae* at Chesters, (Figure 1.4) illustrates the hot and cold rooms within the bathing sequence. The hot rooms are located adjacent to the boiler room which utilized a furnace and hypocaust system to heat the rooms. At this particular facility, the bathers would enter directly into the *apodyterium* which had a latrine located on the side. From here, the bathers would enter directly into a small lobby which had an entrance to a *tepidarium*, *caldarium*, *sudatorium*, and *frigidarium* with a cold bath plunge.[12]

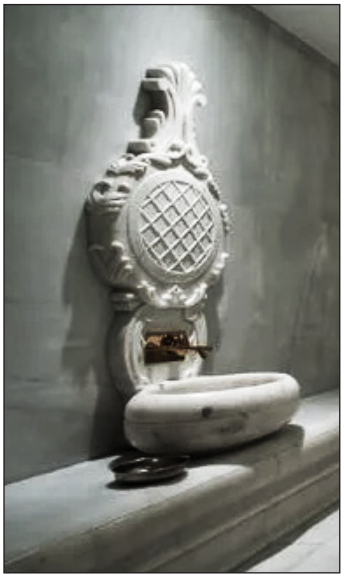
Turkish Hammam

[1.8] Turkish hammam

Painting shows the social atmosphere of a hammam

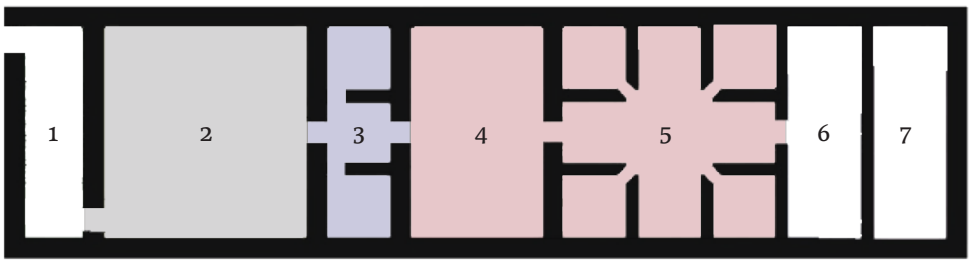
Under Ottoman Empire rule, *hammams* became associated with mosques through Muslims and the Islamic purification ritual. Undoubtedly, these facilities became very popular among communities and evolved into institutions of their own. *Hammams* became a sought after public experience, especially for women, as it was a space to gather, socialize, eat and enjoy each other's company.[13](Figure 1.5)

The *hammam* bather would begin the experience by entering the *soğukluk* (cold hall) which is used for changing clothes, resting and socializing. This space is often lined with seating and cushions for users to rest on, a cubicle for changing clothes and a central water fountain for users to cool down. Directly off of this room is the *aralık* (cold hall) which houses the water closets. Once the bathers have changed, they will enter the *ılıklık* (warm hall) which is heated to 25 °C) to help adjust the body to hot temperatures. Once warmed, the bathers enter the *sıcaklık* (hot hall), a large domed room heated to approximately 38 °C).[14] The room has a central *göbektaşı* (heated marble platform) where soap lathering and massages are performed. Several *ıwans* and/ or *halvets* (private bathrooms) with running water are located around the perimeter, unlike the pools of the Roman baths, due to importance placed on cleanliness by Islam. These spaces also have *sekıs* (benches) for bathers to sit on while they wash themselves at the marble or stone *kurnas* (water bowl) (Figure 1.6). Once the bather is done they make their way back to the *ılıklık* to acclimate their body to cooler temperatures before returning to the *soğukluk* to socialize, relax, eat and drink with friends and family.[15]



[1.9] Marble kurna and sekis

Used by the bather to sit and wash



[1.10] Turkish hammam program analysis

Sheikh Fethullah hammam Gaziantep, Turkey floor plan highlighting the hot, cool and rest spaces

1 Taşlık
2 Soğukluk
3 Aralık,
4 Ilıklık
5 Sıcaklık,
6 Su Deposu
7 Külhan

Hot space
Cool space
Rest Space

12 m

The analysis of a Sheikh Fethullah hammam, (Figure 1.7), illustrates the linear bathing sequence of the hot and cold room. The bather enters the facility through the *taşlık* (entrance) which has a staircase which leads down to the dome shaped *soğukluk*. This space is lined with benches. The bather passes through the *aralık* into the *ılıklık* . Afterwards the bather entered the *sıcaklık* with the *göbektaşı* in the centre, an ıwan on the left and right, and a *halvet* in each corner. The domed ceiling has circular light wells to bathe the users in natural light as they wash. The *su deposu* (water reservoir) and külhan (furnace and ash storage) which would warm these spaces using by funneling the steam generated from the boiler into the hot room.[16]

[1.11] Japanese onsen

Painting of women bathing in a Japanese onsen

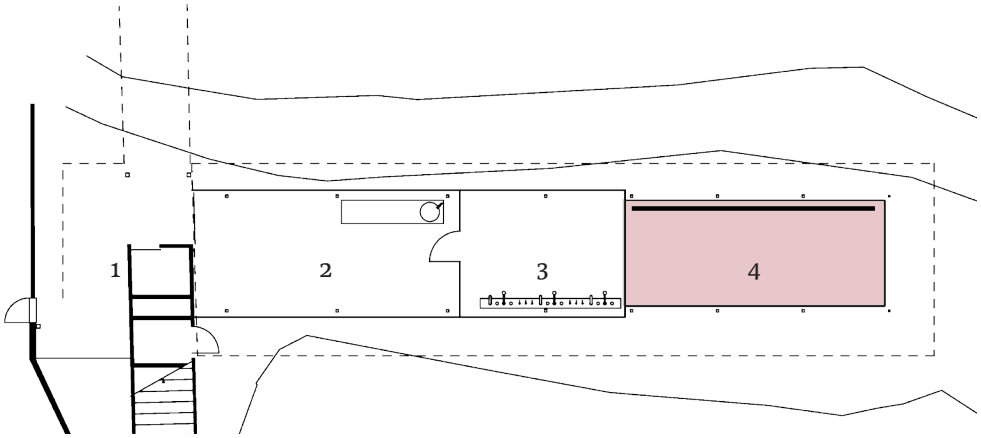
Japanese Onsen

The Japanese *onsen* bath uses hot spring water filled with natural minerals created by the large amount of volcanic activity in the landscape. The bath can be the natural landscape itself or various tubs made from wood, ceramic tiles, or other materials. The *sentō* bath is different from the *onsen* in the way that is uses heated tap water and are generally more accessible to the public.[17] Buddhism was active in Japan during the sixth century; by the eighth century Buddhist temple baths were accessible to the public and the earliest known record of a Japanese *sentō* was made during this time. Communal bathing quickly became popular and regular among communities (Figure 1.8). It is common for bathers to utilize a *sentō* every day and to know all the users.[18]

The Japanese bathing ritual of this is simple sequence which first requires the bather enter the change room and remove all clothing. Afterwards, the bather undertakes the task of vigorously cleaning themselves. This process can use showers and various types of bath made of various materials and heated to different temperatures. Once the bather is completely clean, they immerse themselves in a hot soaking bath. The water for interior tubs is heated to approximately 45 °C while exterior tubs can be as high as 50 °C. The standard maxim for hot tubs in Canada is 40 °C.[19] The soaking phase is often done with meditation, relaxing or socializing. Once the bather is done soaking, they will dry themselves off, change back into their street clothes and sit in the rest area to relax and socialize with friends and family.[20]

[1.12] Hot spring soaking bath

Yagen Valley in Shimokita, Japan



[1.13] Japanese onsen program analysis

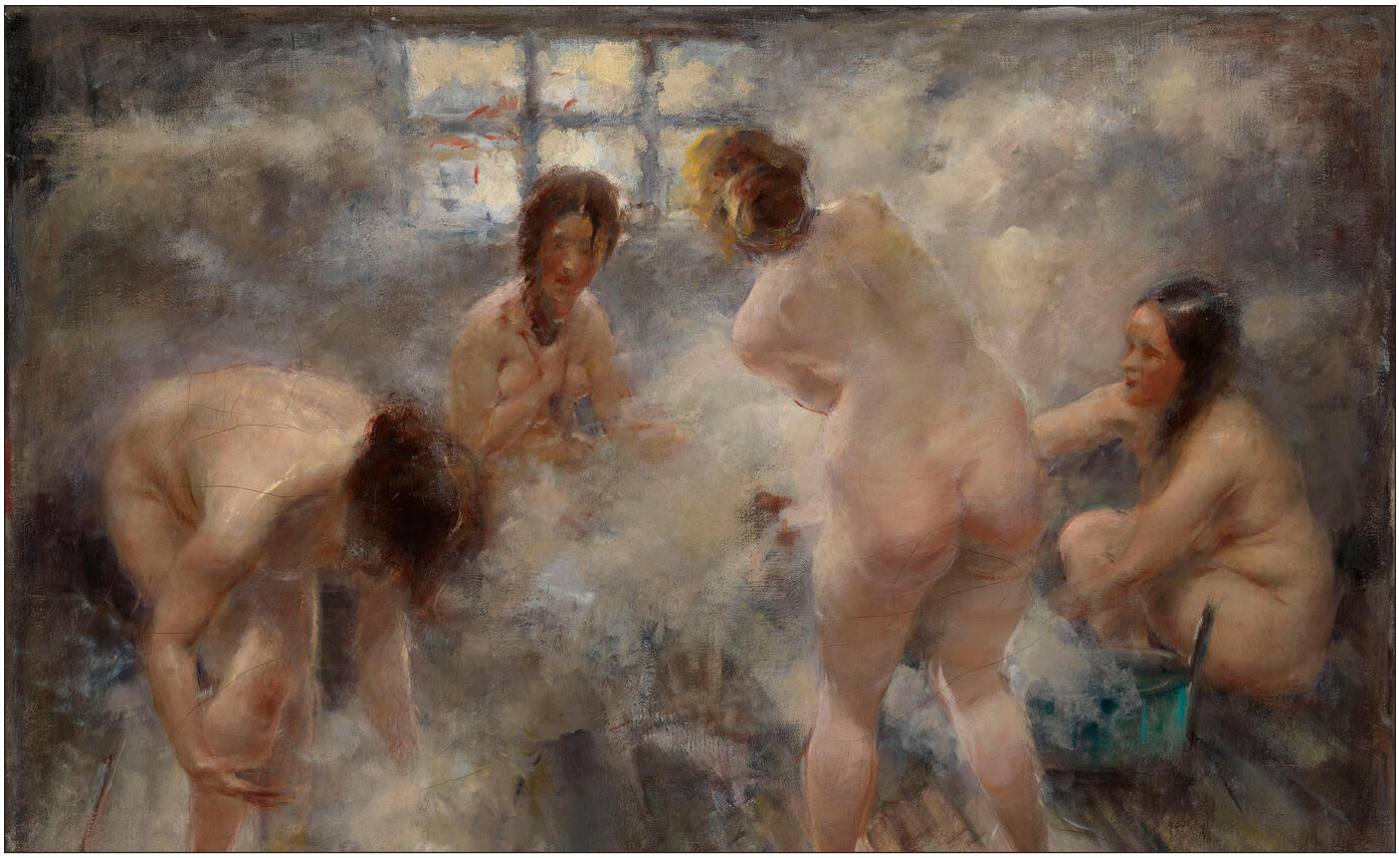
Horai Onsen in Shizuoka, Japan
floor plan highlighting hot space

1 Entry
2 Waiting/ Changing room
3 Washing room
4 Bath

Hot space

3 m

An analysis of Horai Onsen, (Figure 1.10), illustrates direct and linear bathing sequence. The bathers access the facility through an entry room with a door leading to the changing area. The Bathers remove their clothing before entering another door into the rinsing room. Here, the bathers wash thoroughly. Once cleaned, the bathers enter another door into the hot spring bath where they soak, meditate, and socialize. This particular *onsen* provides views of the rocky mountain and the treetops of the forest on the other.



[1.14] Russian bania

Painting of women bathing in a Russian bania

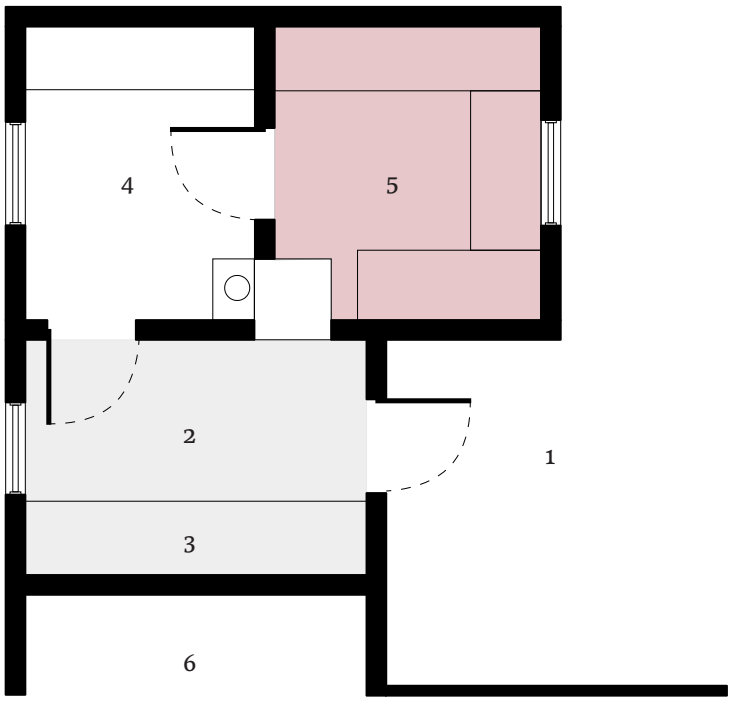
Russian Bania

The Russian *bania* gained most of its popularity during the 19th century CE as a social event, hygiene routine, casual get together and/or a facility to improve health and wellbeing. The traditional *chernaia bania* (black bania) consisted of a one room, log building with a kamenka (stove) built from a large pile of stones. [21]Traditionally, the *kamenka* had no chimney, leaving the interior layered with soot. The *chernaia bania* was used in rural areas while public banias continued to be used in urban areas. Public banias were often built out of concrete and heated by a stove with a flue. The humidity level is typically high in a public bania due to the concrete surfaces; the wooden walls of the *chernaia bania* would absorb the humidity generated by the steam. Public banias are especially popular among men in Russia; as it gives them a place to relax and meet people which gives them a sense of belonging.[22] (Figure 1.11)

A public *bania* begins with the bather entering the *predbannik* (changing room) to remove their clothing; traditionally bathers would complete the process while nude. Afterwards, the bathers enter the washing room to carefully rinse their bodies and keep their hair dry. Bathers often wear a *chapkas* (felt hat) on their head during the steam for two reasons: they believe it will protect their hair and increase their tolerance to the heat (Figure 1.12). Before entering the *parilka* (steam room), the users place their *venik* (leafy branch whisk) in a pail of water to soak during the first hot - cold cycle. Once inside the *parilka* the bather place a small towel on the bench to sit or lay on. Once the bather has perspired, they cool off by plunging into a water body, hole in the ice or by rolling in the snow. Now that the first cycle is complete,

[1.15] Chapkas

Felt hat warn by bathers in the bania



[1.16] Russian bania program analysis

Typical bania floor plan highlighting the hot, cool and rest spaces

1 Entry
2 Change/ Rest area
3 Resting bench
4 Washing room
5 Steam room
6 Wood Storage

Hot space
Rest space

1 m

the bathers begin throwing water on the stones to create steam and increase the temperature. The humidity within the *bania* is often high at approximately 90% with a heating temperature of approximately 45 °C.[23] Bathers use their *venik* by beating their exposed skin to stimulate blood circulation. Once again bathers will cool down and repeat the cycle as many times as they need. Once the bathers have finished with the hot - cool cycle they complete the bania ritual by socializing, relaxing, eating and drinking with friends and family. [24]

An analysis of a traditional bania, (Figure 1.13), depicts the straightforward hot and cold cycles of the bathing sequence. hot and cold cycles of the bathing sequence. The bathers first enter the resting room which is warmed by a fireplace and opens to the outdoors. Next, the bathers enter the *predbannik* to remove their clothing and rinse their bodies before entering the *parilka*. When bathers exit the *parilka*, there is a tub for plunging directly across from the door with a view to the exterior. Bathers also have the option to exit the building and cool down outside in the lake or snow. The *parilka* is heated by a contemporary metal *kamenka* and fueled with logs - adding to the traditional feel of the bania experience.

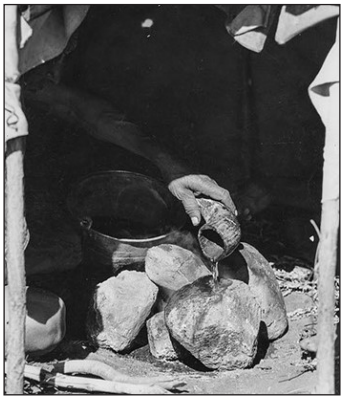
[1.17] Inipi ceremony

Painting of man and woman in Indigenous sweat lodge

Lakota Sioux inipi

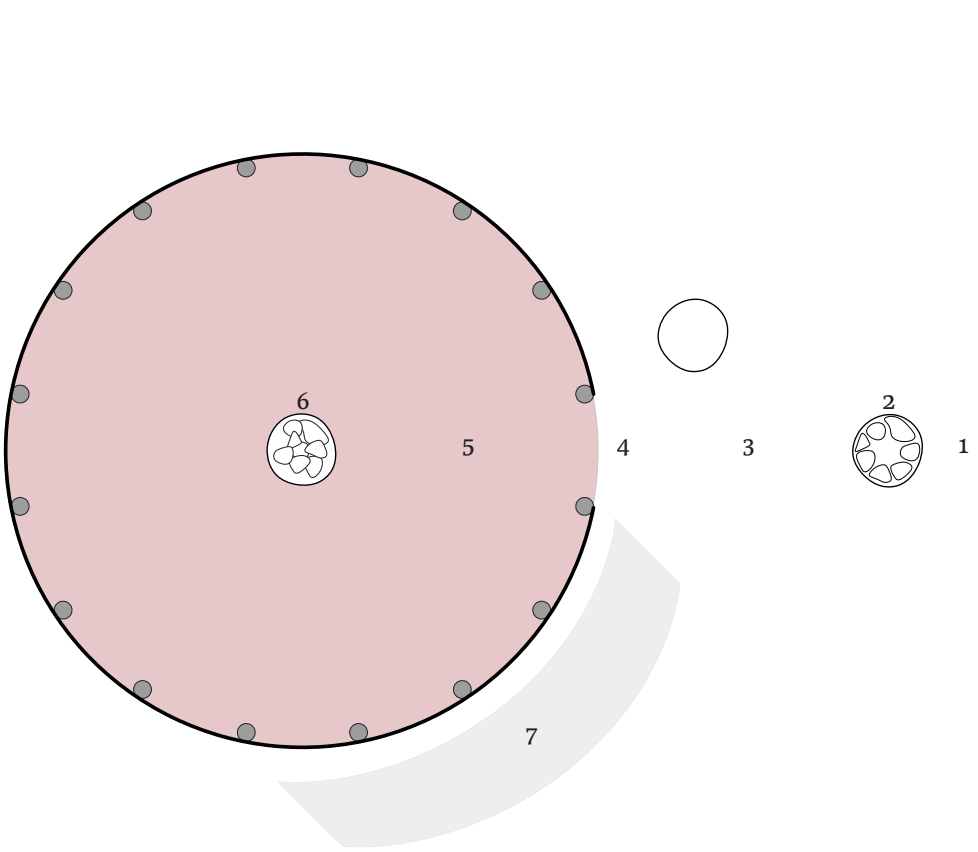
The *inipi* (sweat lodge) is a sacred tradition practiced by the American Plains Lakota Sioux and led by a qualified elder. Each *inipi* experience is unique and cannot be replicated as each session is completed for people or a particular purpose. For example, it can be used a healing ritual for the body, mind and spirit. During the ceremony, answers and guidance are sought from spiritual beings, totem helpers, the Creator, and the Earth.[25] (Figure 1.14)

The Lakota Sioux *inipi* vapour bath ceremony is a purification ritual performed to reconnect the bathers with themselves and nature. The sequence begins with the process of searching for saplings to build the bent wood structure which is then covered with birch bark, animal skins and/ or blankets. [26]The entrance is small to decrease heat loss and oriented towards the East. A sacred fire is built on the East side of the *inipi* to heat the *unci* (grandmother stones).[27] A pit is dug in the center of the *inipi* to hold the *unci* when they are red hot; the soil from the pit is moulded into a mound or alter outside of the entrance.[28] The way the rocks hiss informs the ceremony.[29] An analysis of an Lakota Sioux *inipi* (Figure 1.16), illustrates the circular hot and cool cycle.



[1.18] Buffalo horn

Photograph depicts a 75 year old Buffalo horn used to pour water on the rocks



[1.19] Indigenous inipi program analysis

Typical Lakota Sioux inipi floor plan highlighting the hot and rest spaces

1 Approach
2 Fire
3 Path
4 Purification
5 Sweat lodge
6 Pit with hot stones
7 Outdoor rest

Hot space
Rest Space

1 m

Christ Pearson, in her book The Architecture of Bathing: Body, Landscape, Art describes her experience of an sweat lodge experience in 2006:

> *Once the participants are assembled, the rocks are brought into the pit and welcomed as grandparents. Multiple cycles of discussion and throwing selected herbs and water onto the rocks the generate smoke and steam structure the sweat, led by the leader. It may be accompanied by songs, drumming, passing of a talking stick for individuals to speak, and statements of intentions and apprehensions. [...] The strong imagery of rebirthing, the intensity of immersion in heat, humidity, and smoke, can have powerful and physical and psychological effects. The group structure ritual structure holds a space for transformation, and at the close of the sweat there is a new shared feeling.*[30]

Conclusion

This analysis has reached three conclusions pertaining to the various traditional bathing cultures see globally. First, it is clear to see these bathing structures are not directly linked, but share, by the way of programs, the designed importance of communal bathing through history in various cultures. Second, the bathing structures share similar program with the purpose of users gathering to bathe and socialize as group. Third, there is a designed importance of communal bathing seen through history and various cultures globally. To conclude, communal bathing rituals are time honoured traditions rooted in cultural knowledge which can be shared with community members while partaking in the various forms bathing rituals.

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[2.1] Holy sauna

Svetlana Ruoho

Löyly: *Essence of the Finnish sauna*

The traditional sauna space is intimate, small and animated by the visual of steam rising from the *kiuas* (stove), smell of wood fire smoke, feel of warm, moist wood touching the skin, sound of water evaporating into steam when it hits the red, hot stones and the subtle taste of *löyly* (steam) when breathing in. The essential part of the Finnish sauna is the *löyly* which is created by the *kiuas*, thus making the *kiuas* is the most vital element of the sauna. This chapter will analyze the components that complete the *kiuas*, the evolution of its form and function throughout history and the impact the different *kiuas* types have on the phenomenological experience of the Finnish sauna. The experience of *löyly* is seen in the painting title Holy Sauna by Svetlana Ruoho (See Figure 2.1)

kiuas (stove)

löyly (steam).

The essential elements of a traditional sauna include a wooden interior structure, *kiuas* (stove) and water to throw on the rocks. The absorption properties of the interior wooden structure is important as it absorbs the *löyly* (steam) reduces the humidity of the bath. In Finland, saunas were traditional built using birch wood logs. A redwood or cedar wood interior are good choices as they absorb the moisture created from the *löyly*.[1] Other benefits to a wood interior include the soft and smooth feeling on the skin, the aroma produced by the wood is enjoyable and the aesthetic emphasizes a traditional feel for the bathers. It is important to note that the wooden interior must be unpainted and not oiled, as paint and oil will cover the natural smell of the wood with an unpleasant smell and inhibit the woods ability to absorb moisture.[2] A concrete or ceramic interior is easier to maintain, however, these materials absorb the heat, become hot to the touch and create condensation when exposed to *löyly* which raises the humidity level during the bathing session. [3] Finnish saunas are traditionally a dry heat, thus keeping the humidity low is important for the bathing experience. It is important to note that the longer the stove heats the room, it allows the wooden walls to dry out, become thoroughly warmed and creates a pleasant experience.[4]

kiuas (stove)

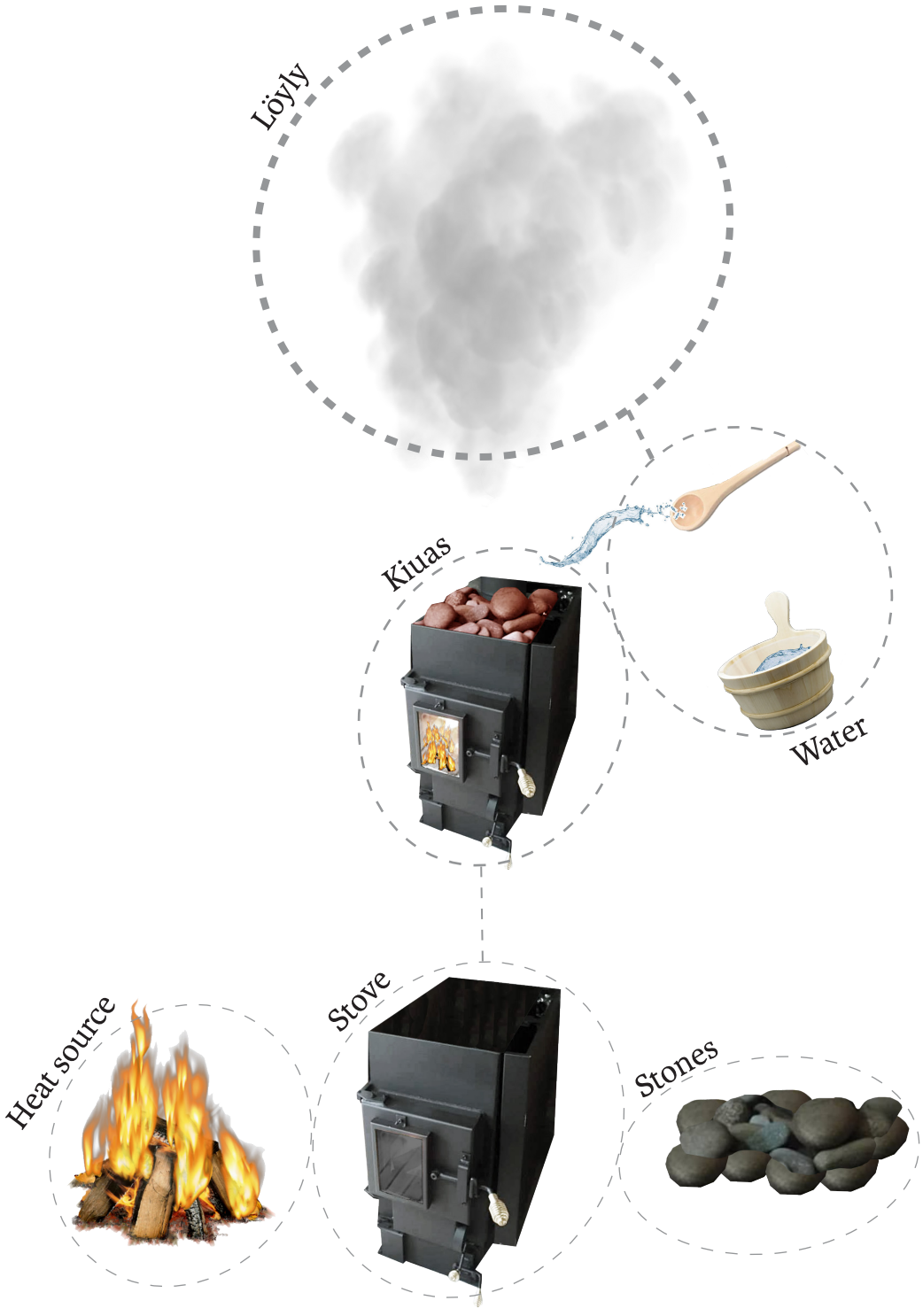
kiukaan (stove's)

löyly (steam).

The *kiuas* is considered the most important element of the sauna and has the largest impact on the sauna experience (See Figure 2.2 showing the elements of *a kiuas*). The *kiukaan* (stove's) main purpose is to heat the stones, which in turn heat the room through natural convection. It is important that the heat felt by the bathers is balanced, thus it is important that the *kiuas* radiates as little heat as possible towards the bathers.[5] The size of the *kiuas* and quantity of stones must be sized to the steam room to ensure the wood walls, room and stones are able to heat properly or the sauna experience will feel unnatural.[6]

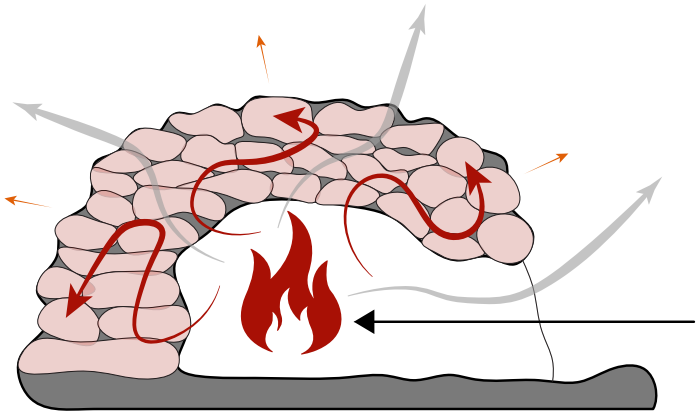
The ideal stone temperature is approximately 600 °C (or when the stones turn red hot); generally, hotter stones create a smoother *löyly* experience.[7] The stones used for the *kiuas* must be able to withstand high temperature and shocks with cold water without crumbling. Common types of stones used include igneous dark granite (example: peridotite), water stones or field stones. Igneous dark granite is an ideal stone because it was formed from heat and high pressure. Water stones and field stones found near a lake shore are also adequate as they have been exposed to extreme elements for years and therefore are durable enough to withstand the heat from the stove and intermittent shocks with cold water.[8] Stones can be tested using blunt force or by being heated until red hot and dropped in cold water.[9] The stones are stacked in the *kiuas* with the largest on the bottom and smallest on top.

The type of wood used impacts the bathing experience of the users through aromatic qualities and the quality of heat produced by the flame. Aromatic woods provide bathers with a pleasant wood and smoke smell during the sauna bathing process. Birch is a common wood used for its aromatic properties.[10] A wood fired *kiuas* produces the optimal heat when fueled with hardwoods that provide a high flame to heat the stones, such as deciduous trees. Woods that produce a lower flame will not be able to heat the stones as adequately. Wood that creates a large amount of soot or pitch should be avoided as when the soot prevents the stones from retaining heat. An example of wood which creates large amounts of soot are coniferous trees. The amount of time required to heat the sauna sufficiency depends on the size the room and the *kiuas*, air tightness of the room and insulation of the roof and walls.[11]



[2.2] Elements of löyly

The löyly is created by water thrown onto hot stones which have been heated by a kiuas (stove)



[2.3] Traditional stone hearth kiuas

Kiuas is created piled stones and a fire built inside

A disadvantage of wood fueled stoves is the maintenance which is required, this includes cutting wood, feeding the fire and cleaning the soot and debris accumulated during the heating process.[12]

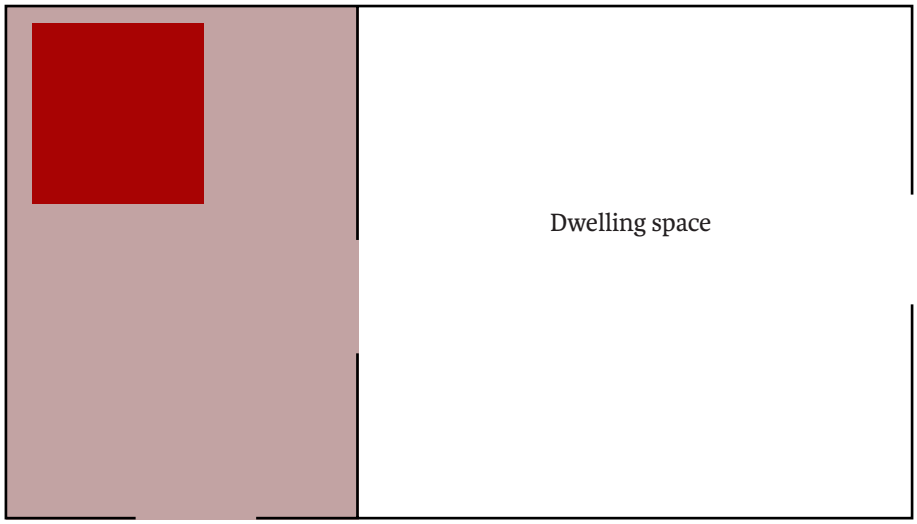
The first *kiuas* was built from piled stones to create a hearth where a wood fire was placed inside (See Figure 2.3 for a tradition stone pile smoke sauna *kiuas*). The fire would be fed from inside the steam room and would take several hours to heat the stones and room. Once heated sufficiently, the smoke would be evacuated through a smoke vent or by opening the sauna door. The steam room would rest for up to two hours to allow the smoke to settle and the bathers were required to clean the soot from sitting surfaces prior to bathing. Originally, the Finnish sauna was also used as a dwelling, threshing shed and as for shelter for animals. Thus, the sauna could account for approximately had the size of the dwelling (See Figure 2.4). In select areas of historical Finland provinces, these *kiuaat (stoves)* were built very large in comparison to modern *kiuaat*, measuring up to 2 meters across. The *kiuas* would also be used for cooking and preparing malts, thus a large stove area was required for the users.[13] Eventually, masonry bricks were used to create the stove structure with stones placed on top (See Figure 2.4 for a masonry brick smoke sauna *kiuas*).[14] The smoke sauna *kiuas* fell out of use largely in the early 20th century due to the potential fire hazard, large fire insurance premiums and the addition of a flue to the stove. Despite the drawbacks, many smoke sauna enthusiasts believe this is the only way to have an authentic sauna experience. It is important to note that traditional smoke sauna *kiuaat* are categorized as heat storage *kiuaat*, meaning the steam room and stones are heated to the required temperature before the heat source is extinguished and the users begin the sauna bathing process. The stones remain hot enough to produce enough *löyly* for a full sauna bathing session.

kiuas (stove)

kiuaat (stoves)

löyly (steam).

Beginning in the 17th century and officially in the early 18th century, the sauna had to be built separate from the threshing shed and farmstead. Due to fire hazard caused by the smoke sauna *kiuas*. Thus, the yard sauna typology was developed. The yard sauna was primarily used on rural properties owned by single families. The yard sauna was separated from the main dwelling spaces and was generally located

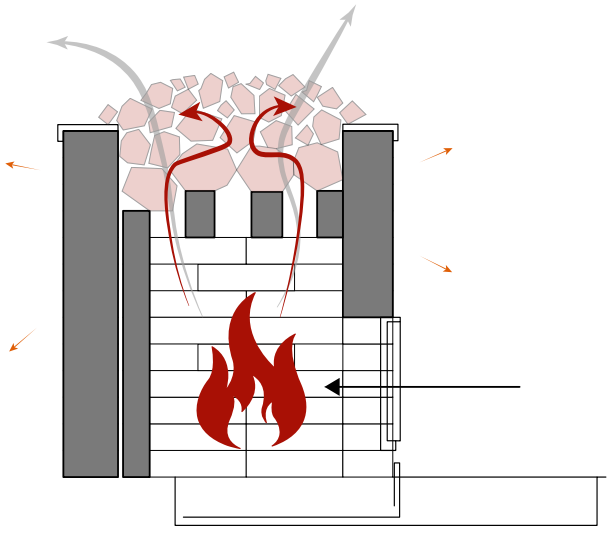


[2.4] Traditional sauna dwelling

Sauna was used to heat the dwelling, cook meals and bathe

Kiuas

Steam room



[2.5] Traditional masonry smoke kiuas

kiuas is built from masonry bricks with stones placed on top

Stove door

Heat from source

Radiated heat

Smoke

[2.8] Yard sauna layout

The sauna is detached from the main dwelling space

Kiuas

Steam room

Washing room

Change room

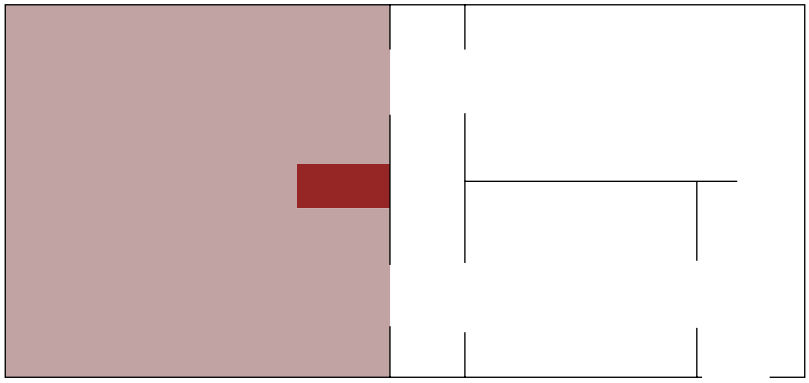
with other out building programs, such as the privy and wood storage (See Figure 2.6 for yard sauna layout). The size of the *kiuas* is considerably smaller than it was built previously as it was no longer used for cooking or heating the dwelling. It is also important to note the building construction evolved from rough log construction to typical stick framing construction using dimensional lumber and concrete flooring.[15]

Due to urban space and individuals unable to built saunas in urban cores in Finland in the 1900s, two types of communal saunas were developed: block sauna and public sauna. Block saunas were semi-private facilities integrated into apartment complexes. Figure 2.9 shows an example layout located in the basement of the complex. The layout consists of two separate programs, each with a sauna, washing room with shower stalls and dressing room. Public saunas have been used in urban regions of Finland since the 1800s, however, they were most popular during the early 1900s. The public sauna *kiuas* was often built with masonry brick, concrete or stone and required a chimney which is just as durable. There were often more rooms added to the typical sauna floor plan which consisted of: separate changing rooms for men and women, washing room and a shared or separate steam room for each gender. The Rajaportti public sauna, built in 1906, consisted of a change room for each gender and a two storey sauna with washing area located below and sauna benches on the second storey (see Figure 2.10).[16]

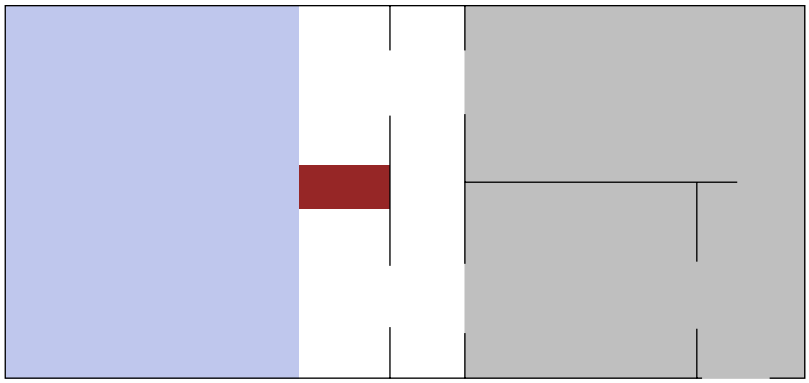
[2.9] Block sauna layout

Sauna is usually located in the basement of the block apartment with separate saunas or time schedules for men and women

Kiuas
Steam room
Washing room
Change room



Second floor

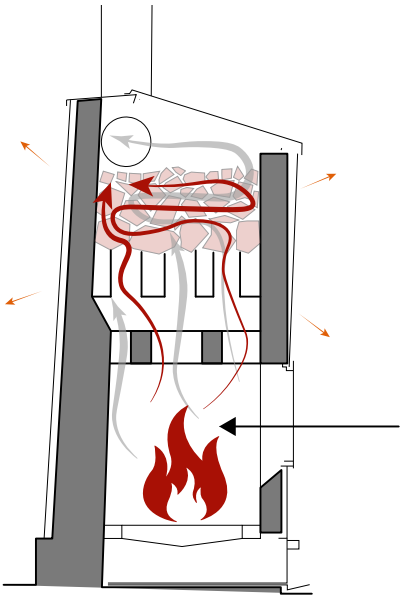


First floor

[2.6] Rajaportti public sauna layout (1906)

This public sauna has separate change rooms for men and women with a shared steam room

Kiuas
Steam room
Washing room
Change room



[2.6] Wood burning sauna kiuas with flue (heat - storage)

kiuas is built with metal or brick with stones placed on top where smoke exits through a chimney or flue

Stove door

Heat from source

Radiated heat

Smoke

Through the 15th to 18th century, the sauna *kiuas* with a flue (or chimney) slowly appeared throughout Finland. By the 19th century, this *kiuas* was commonly seen throughout the country.[17] It had the advantageous ability to be installed where a smoke sauna *kiuas* was not available.[18] (See Figure 2.6 for wood burning sauna *kiuas* with flue designed for heat storage use). A modern heat-storage *kiuas* takes approximately four hours of continuous heating and utilizes a lid to cover the stones during the heating process. This allows the flames and smoke to pass directly through and around the stones before exiting through the flue. This does cause the stones to become full of soot which the stove will burn off once it reaches approximately 450°C.[19] Due to the increased amount of insulation required for this stove type the heat radiated from the *kiuas* is limited. The wood fired *kiuaat* have the add to the sauna experience with the smell of the fire. (See Figure 2.6 heat storage sauna *kiuas* with flue).

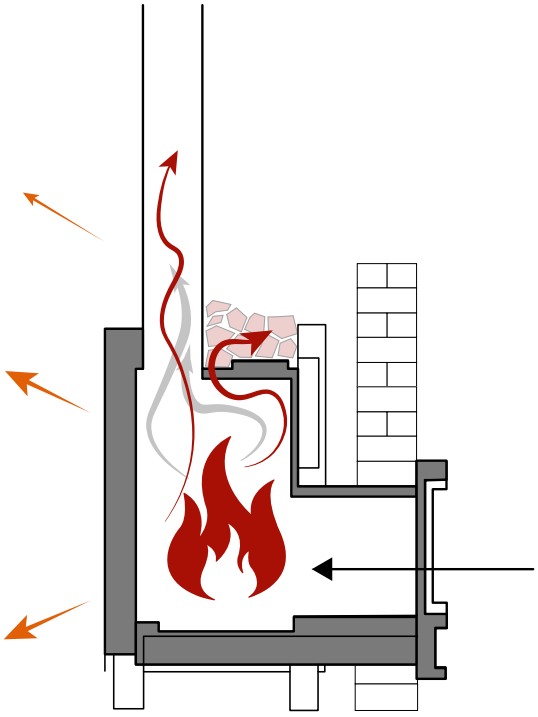
kiuas (stove)

kiuaat (stoves)

löyly (steam).

During the 1930s there was the development of the continuously heated *kiuas* along side the heat storage *kiuas*.[20] A continuously heated stove takes approximately one hour to heat and is continuously fueled during the bathing session. This type of *kiuas* generally has a lighter structure than the heat-storage type which results in the stones cooling down quickly once the heat source has been depleted. Furthermore, this *kiuas* generally emits more radiated heat towards the bathers due to the reduced amount of insulation required. The stone temperatures will vary between *kiuas* models, however continuously heated *kiuas* generally do not reach the same high temperature as heat storage *kiuas* which can result is a less smooth *löyly* experience. This *kiuas* has the added experience of wood fire smoke smell and the sound of crackling fire during the sauna session. The continuously heated type can be fed from inside the sauna or outside and has the added benefit of adjusting the heat in the room by opening and closing the sauna stove door.[21] (See Figure 2.5 for a continuously heated wood fired *kiuas* with flue).

As technological advancements evolved, so did the types of sauna stoves available. During the mid 20th century, oil and gas heated stoves were available as heat-storage and continuous heating types. They have become an attractive option



[2.7] Wood burning sauna kiuas with flue (continuous heating)

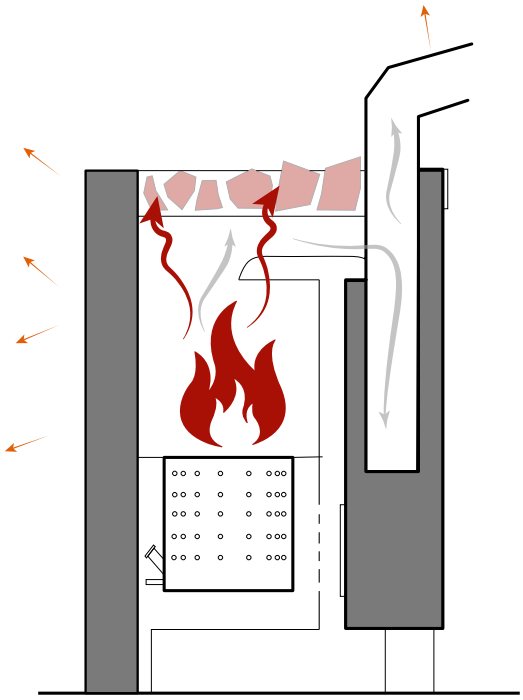
Kiuas is built with metal with stones placed on top where smoke exits through a chimney or flue

Stove door

Heat from source

Radiated heat

Smoke

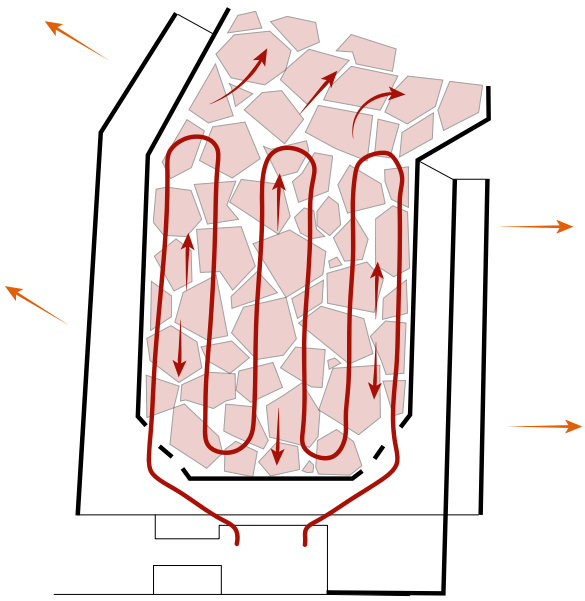


[2.11] Gas sauna kiuas

Kiuas is built with stainless steel parts with stones placed on top (Continuous heat type)

Heat from source

Radiated heat



[2.12] Electric sauna kiuas

Kiuas is built with stainless steel parts with stones placed on top (Continuous heat type)

Heat from source

Radiated heat

due to their low cost to fuel in Finland. It is important to insure proper ventilation is installed for this type of stove.[22] These stoves are usually automatic and are controlled with a thermostat located within the sauna. The gas or oil storage apparatus is stored in a separate room for the safety of the bathers. Oil heated stoves commonly use a pot burner which consists of a pot, three burners and a central pillar. Gas heated stoves generally use a typical gas burner which uses low pressure to push gas into a mixing tube which sucks in air to mix with the gas before it reaches the burner. There is a risk of explosion with this type of stove, thus a pilot light is used. (See Figure 2.11 for gas sauna *kiuas*). Gas and oil stoves are often hard to find and require careful installation.[23] These stoves are used more often in public rather than residential saunas. It is important to note that this type of stove lacks the traditional and pleasant smoke smell provided by a wood burning *kiuas.*

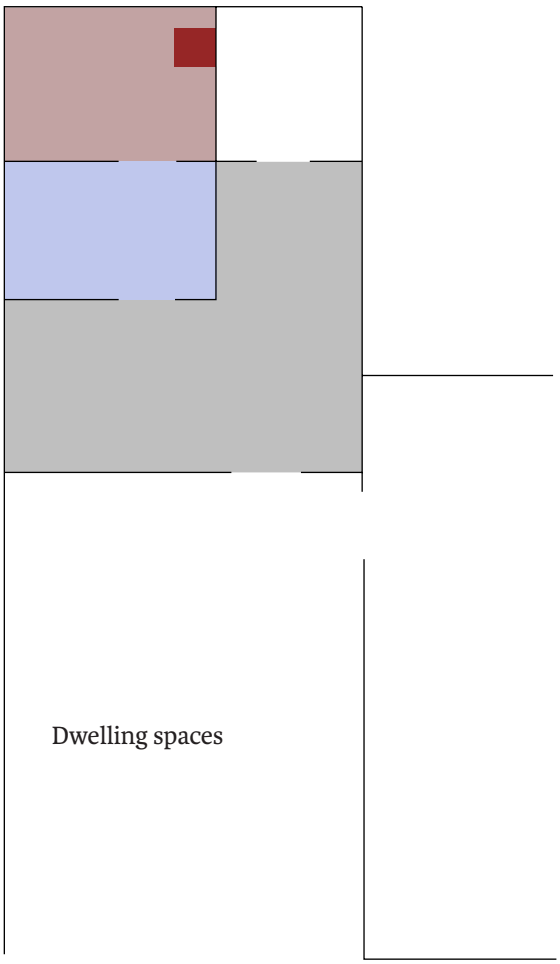
kiuas (stove)

kiuaat (stoves)

löyly (steam)

In the late 1940s, the invention of the electric sauna *kiuas* took Finland by storm due to their adaptability, simple installation and accessibility. Electric sauna stoves are usually fabricated with stainless steel, galvanized or aluminum for the interior parts and the exterior casing is stainless steel, baked enamel on steel or coloured aluminum. This *kiuas* has many advantages, including being started with a switch or dial, a short heating time of 30 minutes to 1 hour, simple to manufacture, compact, easy installation and maintenance, and an easy option for areas where a wood burning *kiuas* cannot be used. Continuous heating electric *kiuas* are more commonly used in residential homes and apartment complexes while heat-storage electric *kiuas* are often used in a public sauna. (See Figure 2.12 for continuously heated electric sauna *kiuas*). This stove is generally the most costly to operate in Finland, however they are simple to use and install as no flues or vents are required to operate the *kiuas* . As with the oil and gas sauna stoves, the electric sauna *kiuas* also lacks the traditional smell of smoke.

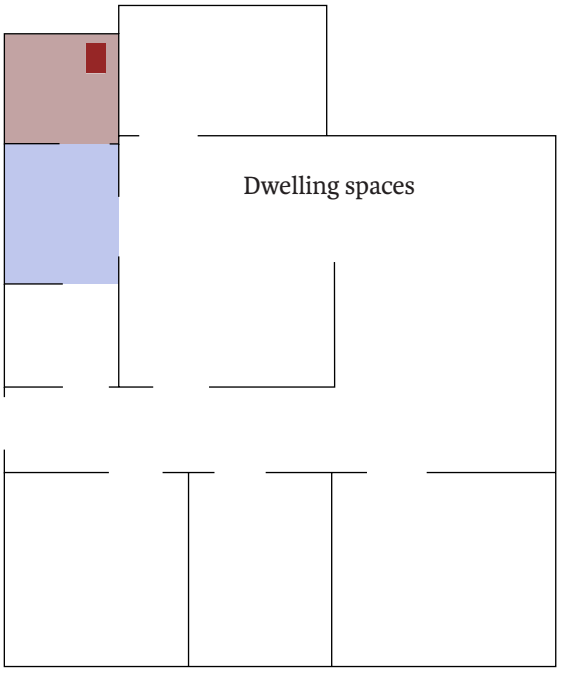
The simple installation method and adaptable capabilities of the electric sauna led to saunas being integrated into residential homes and individual apartment units. Home saunas are often built in the basement with a washing room and dressing room adjacent to the stream room (See Figure 2.13). The individual apartment sauna is



[2.13] Home sauna layout

Usually located in the basement of a family home with a washing room and dressing. This type of sauna lacks the traditional smell and forested area surrounding the sauna

- Kiuas
- Steam room
- Washing room
- Change room



[2.14] Apartment sauna layout

The apartment sauna is sized to fit one to two people. These saunas are usually uncomfortable and emit an unbalanced heat towards the bathers

- Kiuas
- Steam room
- Washing room

generally very small and may include a washing room adjacent to the steam room (See Figure 2.14). The integration of saunas into individual living spaces led to the decline of public and block saunas.[24]

kiuas (stove)

kiuaat (stoves)

löyly (steam).

Conclusion

This analysis shows the vital importance of the *kiuas* to the sauna experience. Although modern *kiuas* can be more adaptable, the traditional wood burning *kiuas* provides a far more authentic sauna experience. A wood burning *kiuas* brings with it the aromatic experience of a wood fire which other fuel sources cannot replicate. Thus, moving forward with the proposed architectural design, a heat storage *kiuas* with a flue fueled by wood will be chosen for the design as it provides the most traditional sauna experience.
*

Endnotes

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[3.1] Sudbury Steam Bath

Lempi Johnson, 1929

Public saunas were popular in Sudbury up until the 1960s

Immersion: *Finns in Canadian waters*

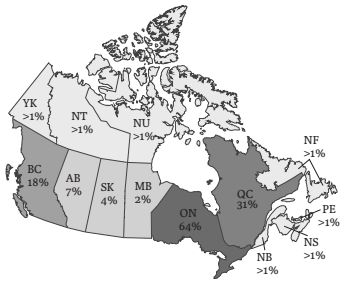
Finnish immigrants arrived in Canada with rich cultural knowledge and values in their packs; eager to learn about living as a Canadian and ready to share their lifestyles within their new communities. This chapter will begin with an analysis of the Finnish immigration and population patterns in Canada with a focus on the City of Sudbury in the province of Ontario. Next, there will be an analysis of the Finnish establishments which impacted the shape of Sudbury's cultural landscape. These establishments include gathering halls, saunas, churches and food establishments. The chapter will end with a reflection of the gaps in the cultural knowledge seen between generations Finnish-Canadians in the community of Sudbury, Ontario.

Immigration and population patterns

Finnish establishments

Gaps in cultural knowledge

Finns immigrated to Canada in the late 1800s and 1900s for several reasons, two common reasons being as an attempt to find more economic opportunities and to escape the unstable political factors caused by the Russification Policy of the Czarist Government while Finland was a Grand Duchy of Russia.[1] There were three significant waves of Finnish immigrants to Canada between 1901-1914, 1920-1930 and 1950-1960. The first wave occurred from 1901 until the start of World War I when 20 700 Finns immigrated to Canada. The second influx of Finnish immigrants occurred during the 1920s when nearly 40 000 Finns arrived in Canada, thus making Canada the leading destination for Finnish emigrants. The increase was largely due to the United States Quota Act which restricted the number of immigrants able to enter the United States. The last wave occurred in the 1950s when 17 000 immigrants arrived in Canada. Since the mid 1960s, the number of Finnish immigrants entering Canada has declined steadily. Between 1901 and 1996, 64% of all single origin Finnish immigrants settled in Ontario (See Figure 3.2 for Finnish population in Canada by province). Other Finnish immigrants largely settled in Québec (31%) and British Columbia (18%). The remaining provinces in Ontario welcomed less than 10% each.[2]



[3.2] Finnish population in Canada (1901-1996)

The majority of Finnish immigrants in Canada settled in the province of Ontario

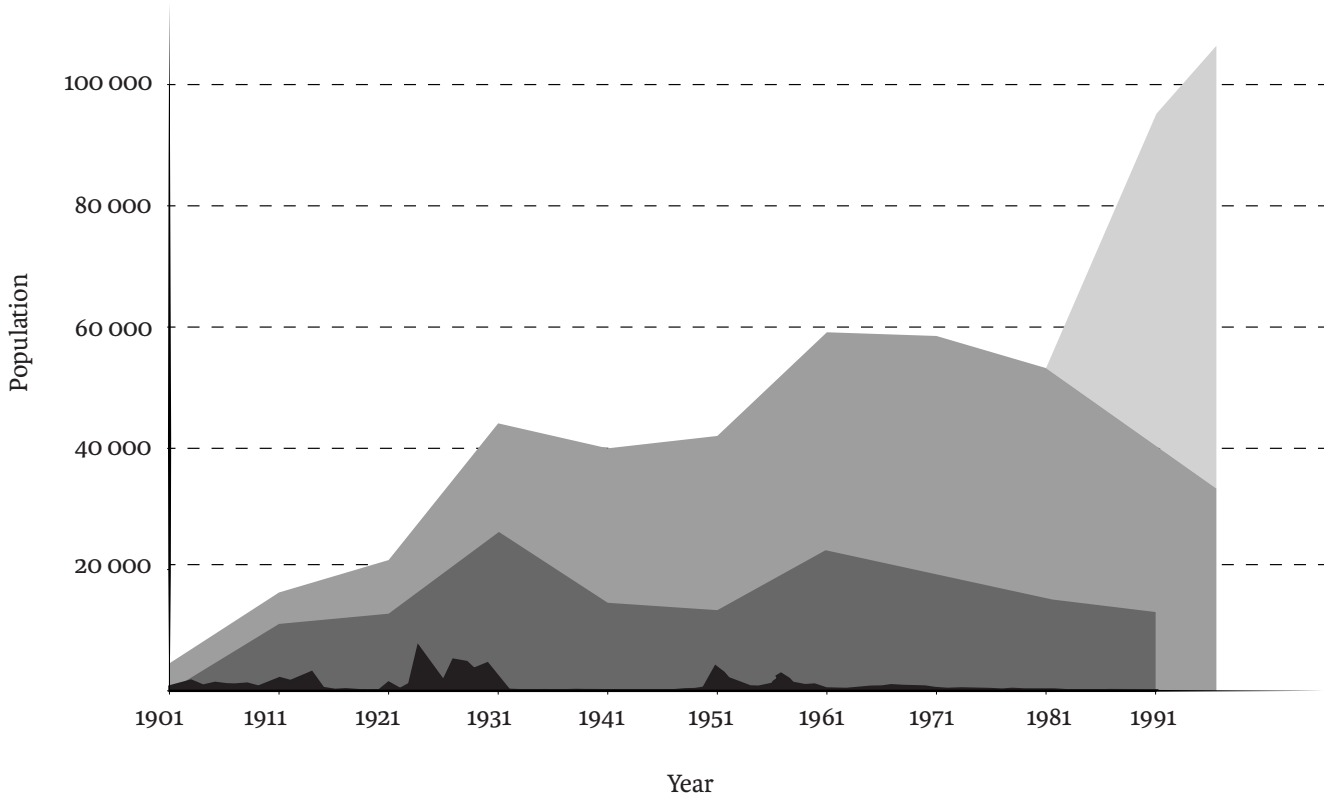
It is important to note that the Census Canada form originally only had the option for single origin (the father's side) until 1981. The form was altered to include a multiple origin option which resulted in the number of individuals claiming to have Finnish heritage increased by more than double of the original number.[3] Figure 3.3 shows the immigrant and population pattern of Finns with single origin and multiple origin ethnic heritage.

Finnish immigrants often settled in landscapes which were similar to their homeland.[4] Finland is the most heavily forest country in Europe and has 187 000 lakes and 647 rivers. Thus, regions in Canada with similar landscape qualities were sought after by Finns.[5] It was common for Finnish settlers to first build a sauna and use the it as their dwelling while the main dwelling was being constructed. The sauna would be used to not only wash, but also cook and sleep.[6] Finnish settler communities were built around a core in the center of their settlement which would be accessible by car, foot or bicycle by all members of the community. The core would usually consist of a gathering hall, track and field spaces, churches, cooperatives, and at times a schoolhouse.[7] These cores were built on the belief that a community should be inclusive, meaning men, women, children and the elderly all engaged in supportive roles. Establishments meant for gathering were important hubs for Finnish immigrants as they represented a piece of their homeland. It was a space where they could share their immigration experiences, teach each other about living in Canada and learn the English language.[8]

[3.4] Location of Sudbury, Ontario, Canada

Sudbury has the second highest Finnish heritage population in the province of Ontario

It has been documented that the first Finnish immigrants to settle in the Sudbury region arrived while working as labourers for the Canadian Pacific Railway in 1884.[9] (See Figure 3.4 indicating location of the City of Sudbury in the province of Ontario, Canada). The first Finnish settlements in Sudbury were situated in Copper Cliff, Garson, and Creighton because they commonly found employment in the mining and forestry sectors in these areas.[10] Within these three areas, Finns established two saunas, one food establishment, five gathering institutions and two churches. (Figure 3.5 shows Finnish immigrants standing outside of boarding house in Garson in 1910). Two of the first Finnish halls in the Sudbury region were the Temperance Hall (1895) and the Finnish Youth hall (1903) both of which were built in Copper Cliff.[11] (Figure



Source: Oiva W. Sarineen, Between a Rock and a Hard Place: A Historical Geography of the Finns in the Sudbury Area, (Waterloo, ON: Wilfrid Laurier University Press, 1999) 5-29.

[3.3] Multiple Origin Finns in Canada between 1901 - 1996

Finnish population increase after the introduction of multiple origin on the Canada Census form

[3.5] Finnish boarding house

Young workers gathered outside a Finnish boarding house in Garson, Sudbury 1910

i

ii

iii

[3.6] Sudbury Finnish settler community photographs

i, Long Lake Diving Tower
Finns swimming and diving at Long Lake Beach, 1930s

ii, Finnish Socialist Hall
A group of miners create a gymnastics display in front of the hall, 1914

iii, Wuoristo Evangelical Lutheran Church
Copper Cliff, Sudbury
Church was built in 1908
Was also used by the Temperance Society

iv

iv, Finns on a scow
Finnish settlers often had to travel by water transportation in the Lorn Township, Sudbury
1940s

v, Presbyterian Finnish Church
Mense of the Presbyterian Finnish Church in the Louise Township, Sudbury
1920s

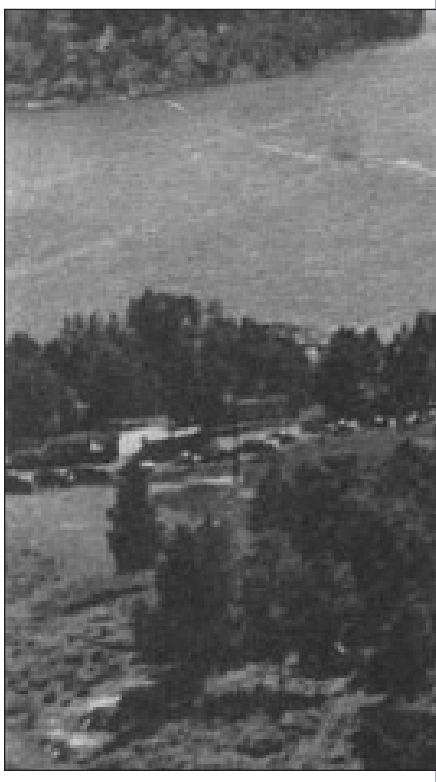
v

3.6 shows photographs taken at Finnish community spaces and Figure 3.7 depicts the opening of the Finnish Youth Hall). These buildings were used as spaces for Finnish immigrants to gather, hold conversations regarding politics, sing songs, play music and dance.

As the population of Sudbury spread further, Finns began to establish themselves in the McKim Township (mainly Spruce and Elm Street), the Donovan district and in the Lockerby area within working-class neighbourhoods. These areas were once heavily populated with a variety of Finnish establishments, which included five saunas, four food establishments, six gathering halls and two churches. A prominent public space within the Lockerby area was *Työn Puisto* (Worker's Park). *Työn Puisto* was established when Dr. Kolikonen donated the land to the Finnish Organization off Canada. The land was used as a public park which included a sauna with lake access, dance area, restaurant, main building and a residential dwelling. The park also held summer camps for children in the area. Eventually, the park was sold to the City of Sudbury and became Nepahwin Park in 1971.[12]

Next, the Finnish settlement pattern headed towards the southern townships of Sudbury as Finns began to purchase land to farm in Beaver Lake, Lively and Long Lake areas. The majority of Finnish settlers settled in the southern townships of Sudbury. The Finns in the Long Lake area established another four saunas in the Long Lake area and another ten gathering halls between Beaver Lake and Wanup.[13] (See Figure 3.8 for photograph of *Voima* (Force) Hall in the Long Lake area).

The Finnish settlement community of Beaver Lake developed a strong community core flourishing with Finnish identity, culture and values. The farmsteads had strong social ties between them consisting of coffee visits, shared mail deliveries, loaning of leisure items such as books and newspapers and co-operative farming ventures. The farmstead buildings were often painted with red iron paint, were south facing and placed in a scattered, circular fashion. Traditional Finnish building methods included hand hewn logs ,dovetail joinery and moss used for insulation. The community spaces included a gathering hall, school, sports club, co-operative store and track and field area.[14]



There are Finnish organizations still operating in the Sudbury communities, including the Finnish Canadian Historical Society of Sudbury (FCHSS), The Knights and Ladies of the Kalevala and the Sudbury Suomi Lions Club. These organizations work to preserve Finnish culture by archiving material such as photographs, letters, etc. Select organizations offer scholarships to students with Finnish heritage attending post secondary institutions. The FCHSS has worked to preserve and commemorate Finnish heritage sites such as the Long Lake Finnish Cemetery, Beaver Lake Community Center, *Työn Puisto*, etc.

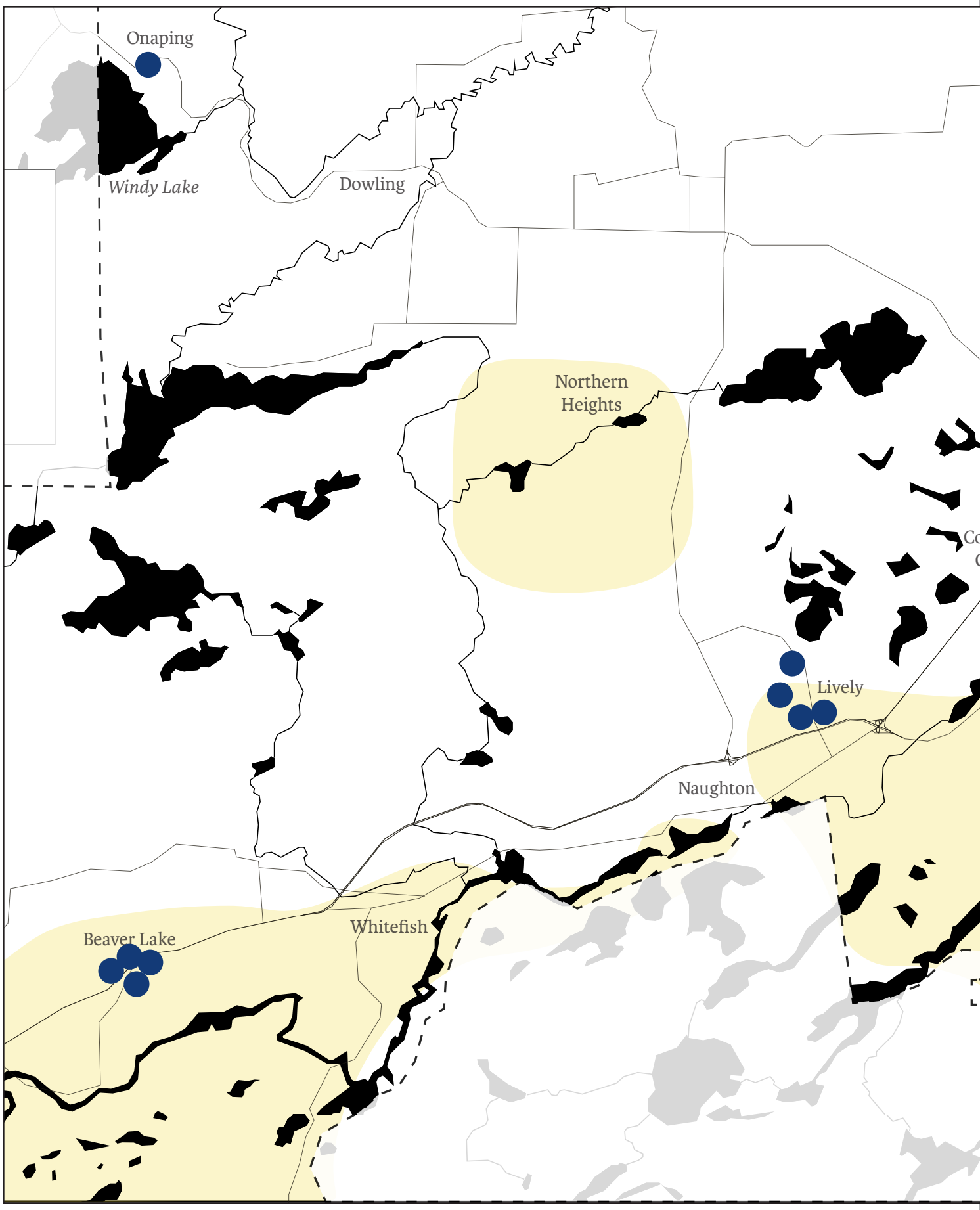
An analysis of Finnish establishments in the Sudbury region has shown there were a minimum of 46 Finnish establishments. These establishments vary from public sauna to rest home. See Figure 3.11 for a map of all Finnish institutions between 1885 and 1985. Many of the Finnish institutions located in Sudbury are no

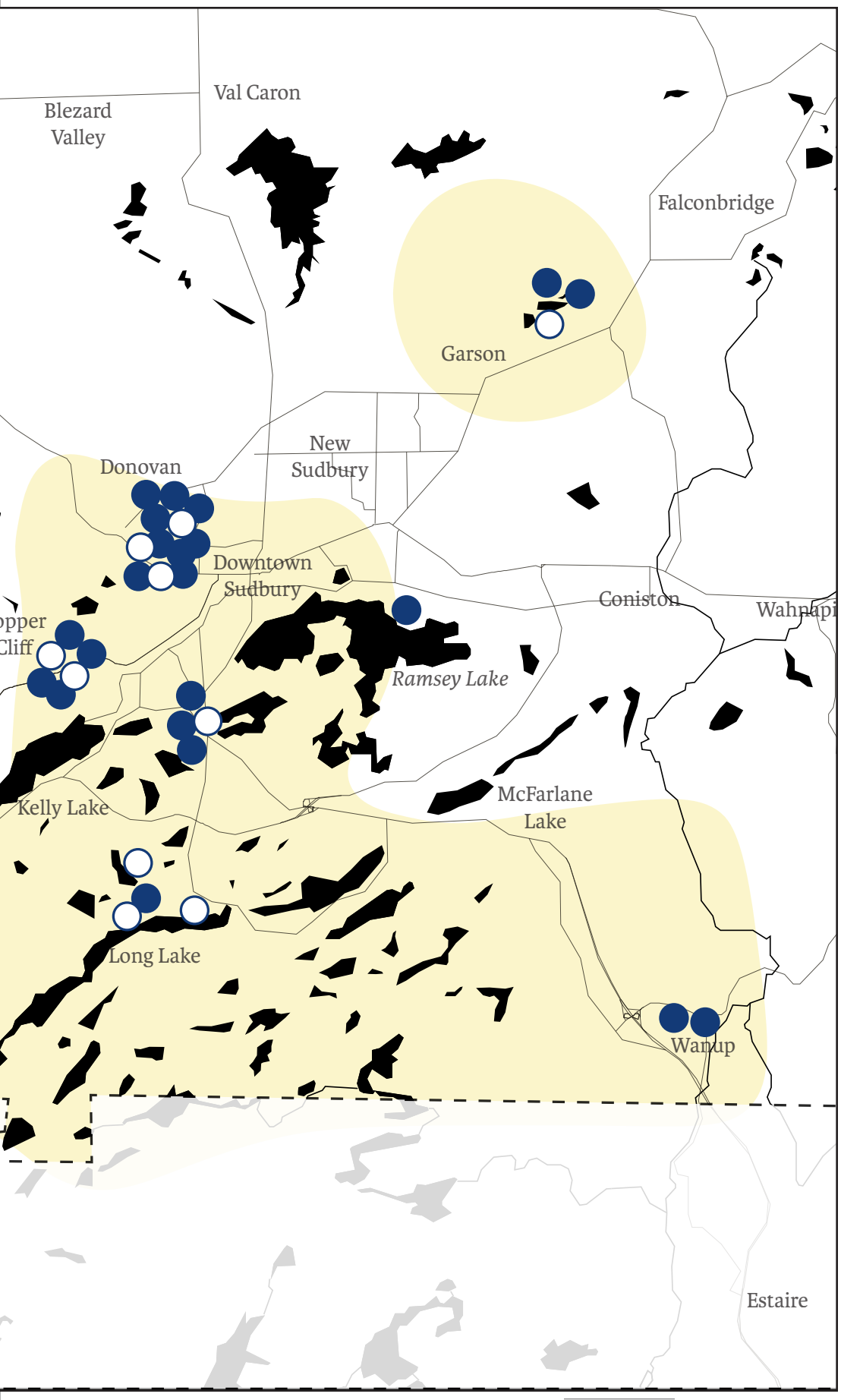
[3.7] Society of Youth opening

Youth hall was used for dances, plays, music and gatherings
Copper Cliff, Sudbury 1903

[3.8] *Voima* (Force) Hall

Voima Hall was a popular beach destination pre WWII. Located in the Long Lake area of Sudbury


Onaping
Windy Lake
Dowling
Northern
Heights
Lively
Naughton
Whitefish
Beaver Lake



46

Finnish establishments

11 Saunas
24 Gathering Halls
6 Food Establishments
5 Churches

Between 1885 -1985

[3.9] Finnish settlements and institutions in Sudbury (1885 - 1985)

Of the 46 Finnish establishments there are 4 which are still operational

Finnish settlement

Public sauna

Finnish establishment (Church, bakery, restaurant, hall or track and field space)

1 km

longer operational. Currently, there are four Finnish establishments open today which includes Finlandia Village Rest Home, Leinala's Bakery, Siion Family Finnish Church and New Hope Lutheran Church. These establishments do not have a Finnish sauna which is operational and available to the public. (See Figure 3.10 for map showing current Finnish establishments in Sudbury, Ontario).

symbolic ethnicity

Ontario is still home to the vast majority of population with Finnish heritage, with Thunder Bay, Sudbury, Algoma and Rainy River having the highest populations (See Figure 3.11 for location of each city in Ontario). As of 2016, Thunder Bay has the highest Finnish population in Ontario with 15 790 people. Sudbury the second highest with 7 375 people with Finnish origins which is 4.8% of the total population of Sudbury.[15]

maintaining Finnish identity

The lack of public Finnish sauna mixed with the immigrant challenges of cultural assimilation, mixed marriages and negligible number of new Finnish immigrants has led to fewer Finnish Canadian's learning the language, cultural foods, celebrated holidays and the Finnish sauna bathing ritual. This ultimately leads to gaps within the cultural knowledge of the Finnish community and Finnish heritage becoming an increasingly symbolic ethnicity for Sudburians with Finnish heritage. Dr. Oiva Saarinen, a prominent Finnish community member, asks the question pertaining to Finnish culture in the Sudbury area in his book Between a Rock and a Hard Place: A Historical Geography of the Finns in the Sudbury Area: "*How long can these forms of symbolic ethnicity continue to exist without a firm loyalty to language or traditional institutional attachment?*"[16]

inaccessible, non-traditional saunas

In the attempts to preserve Finnish culture within Canada, numerous efforts have been made to document the culture by pursuing research which includes interviewing those with Finnish heritage and analyzing the data. One study performed with an online and hard copy questionnaire resulted in 600 usable responses from diverse generations with Finnish-American heritage; there were findings made regarding how Finnish culture can be preserved within North American communities. The study discovered that cultural assimilation slows in those who had childhood experiences and living environment play a role in maintaining the Finnish identity and emotional ties. Also, Finnish names help with identifying as Finnish outside of Finnish communities. [17]

It is worth noting that there are spas which have a sauna available for paying customers to use. This includes A Touch of Heaven (Garson, Ontario), Vettä Nordic Spa (Barrie, Ontario) and the Scandinave Spa Blue Mountain (Blue Mountain, Ontario) (See Figure 3.12 for spa locations). However, these facilities are not easily accessible to the general public and do not provide the atmosphere or experience of a traditional Finnish sauna. Furthermore, the YMCA and Laurentian University Ben Avery Gym have saunas integrated into the recreational swimming area, however they are small, poor quality and do no contain elements of a traditional Finnish sauna.

[3.11] Cities with highest Finnish heritage population in Ontario

[3.10] Finnish establishments in Sudbury (2023)

Finnish establishments currently operating in the City of Sudbury

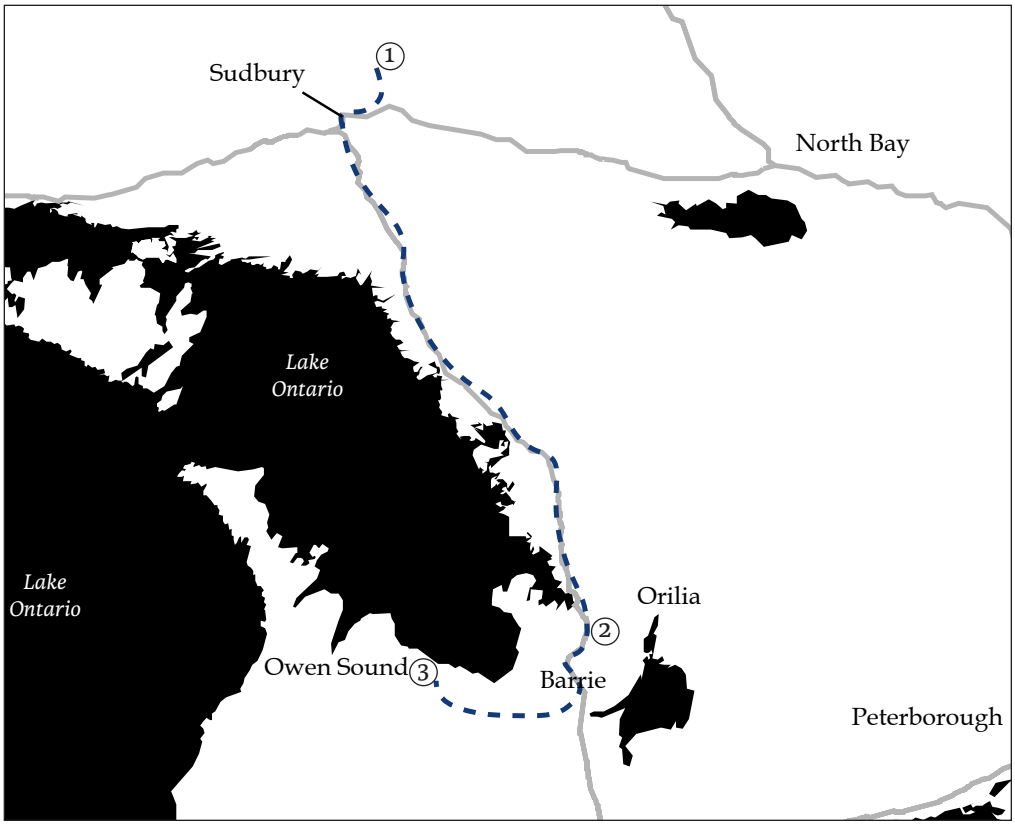
① Finlandia Village Rest Home

② Leinala's Bakery

③ Siion Pentecostal Church

④ New Hope Lutheran Church

2.5 km



[3.12] Spa locations with sauna experience

Spa locations near Sudbury which have a sauna available to use. These saunas do not have the traditional elements of a Finnish Sauna

① Touch of Heaven Spa
35$ / 1.5 hr - 20 km

② Vettä Nordic Spa
100$ / day - 275 km

③ Scandinave Spa Blue Mountain
95$ / day - 330 km

60 km

Conclusion

Through the historical analysis of the Finnish population within Sudbury, it is clear to see the number of Finnish immigrants and number of establishments in Sudbury was significant. There is still a significant number of population with Finnish heritage in the city, however, the number of Finnish establishments has been decreasing. The lack of a public Finnish sauna in the city is proof of a gap within the cultural knowledge associated with the heritage. Thus, there is an opportunity to reduce the gaps in Finnish cultural knowledge while preserving the existing knowledge. An architectural approach which consists of a community built traditional Finnish sauna which requires rebuilding with each generation insures the cultural knowledge is shares and preserved.

Endnotes

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15 Alex Ross, “May 2019,” The Walleye, August 1, 2018, http://www.thewalleye.ca/may-2019/, 73.
16 Sarineen, Between a Rock and a Hard Place, 259-261.
17 Pauliina Raento, Finnishness in Finland and North America: Constituents, Changes, and Challenges [Special Issue], (Journal of Finnish studies 9, no. 2, 2005) 98-116.

Pour me another glass of that sauna water.
When I'm done,
I will scamper through the dressing room,
over the railing,
and on the November ground.
I will roll only once
before my mind goes...
and the constellations turn to blackness.
Then I had better get back to that boiling pot they call a sauna,
before my limbs stick to the snowy ground.
Before I forget that, although content,
I must return to America in the morning.

"Nights in Finland"
- Emily Laila Eeva Salmela[1]

Gather: *A sauna for the community of Sudbury*

The Sudbury landscape contains several fresh water lakes and forested hillsides allowing for numerous scenic locations to partake in the traditional Finnish sauna bathing process. This chapter will begin with an analysis of three prominent public lakes in Sudbury followed by the analysis of four potential sites situated in central and accessible areas in Sudbury. Next, this chapter will discuss the chosen site and the thorough analysis and will finish by discussing the proposed programming, architectural design and building methods.

site analysis

proposed design

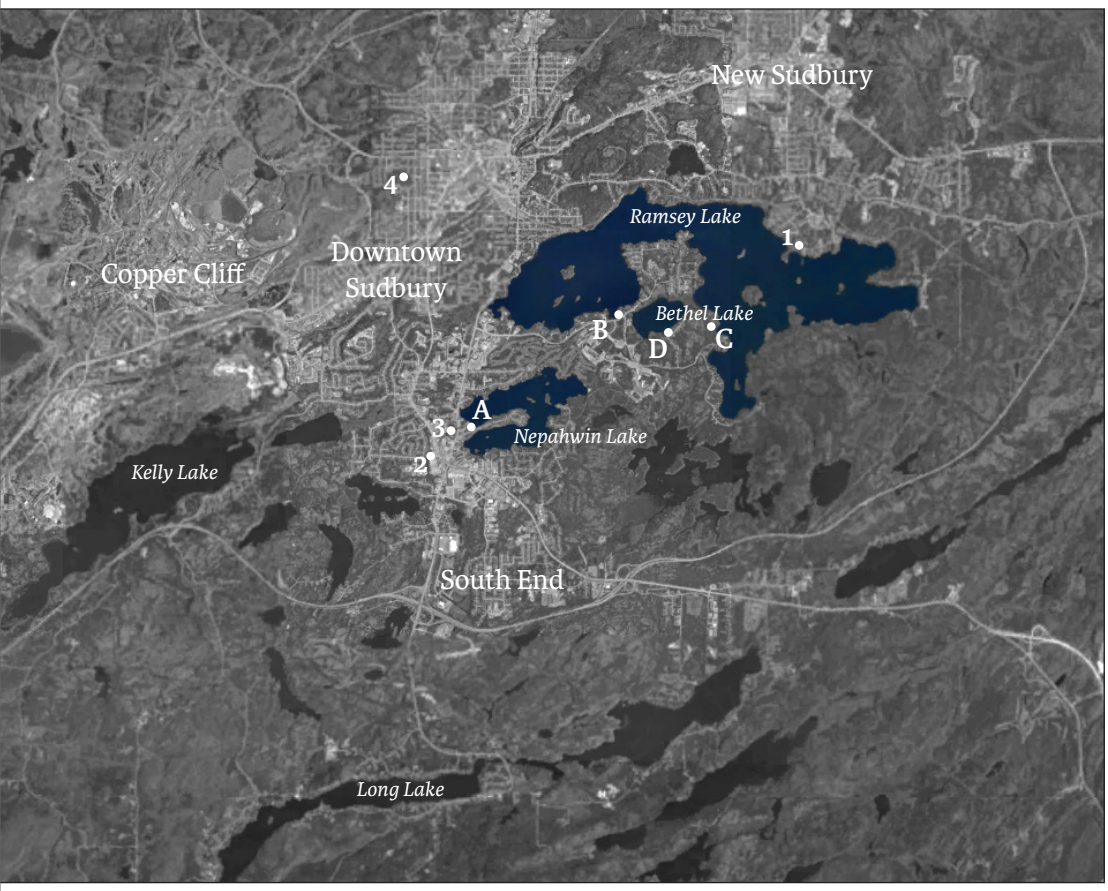
Site Selection

The site selection process was completed in three phases. The first phase included an investigation of the public lakes within the Sudbury area. There are over 330 lakes and a few of the most prominent public lakes include Ramsey, Nepahwin and Bethel.[2] These three lakes were chosen for the first phase of the site selection process. (See Figure 5.1 for map depicting the three lakes selected).

Ramsey Lake is one of the largest lakes in the City of Sudbury with an area of 800 hectares and a perimeter of 34 kilometers. The shoreline has a variety of uses such as public beaches, private residential land owners and several educational and commercial institutions. At its deepest point, the lake reaches 20.5 meters while the surface is used for recreational activities such as angling, swimming, sailing, boating and water skiing. Also, this lake is used a source for drinking water for the city.[3] The lake has a diverse ecosystem that includes nine different fish species, aquatic insects and numerous types of aquatic vegetation which are categorized as submergent, emergent or floating.[4] It is recognized that existing vegetation in the lake should be protected as it is used as nursery habitats for walleye and pike species.[5] Lake Nepahwin is significantly smaller with an area of approximately 120 hectares and a perimeter of 11.8 kilometers. The shorelines consists of mainly residential properties, a public beach and a golf course. The lake reaches a maximum depth of 22 meters and the ecosystem consists of 11 species of fish and contains aquatic plants such as milfoil, pickerelweed, bullrush, water lilies and pond lilies.[6] Similar recreational water activities occur on this lake as Lake Ramsey. Lastly, Bethel Lake is extremely small at 31.2 hectares in size with a shoreline perimeter of 2.4 kilometers. The maximum depth reaches 4 meters. The lake currently has no data on the aquatic plants, however it is home to eight different species of fish and numerous aquatic insects. The shoreline is mostly untouched with several residential properties along the shores.[7]

The second phase included an analysis of four potential sites: Site A, Site B, Site C and Site D. It was integral to the selection process that each site encompassed all the requirements of an traditional Finnish sauna. These elements include the experience of retreat, a forested area, and open water.[8] (See Figure 5.2 for map showing the four sites selected for analysis).

Site A is located at Nepahwin Park along the shorelines of Nepahwin Lake which is owned by the City of Sudbury. The landscape consists of grass areas, exposed bedrock, sandy beach, numerous deciduous trees and rolling hillsides. The public programming on the site includes a public beach, several picnic areas, playground and out door exercising equipment. The site has several benefits, such as the history the Finnish community has with the site (Nepahwin Park was previously owned and maintained by the Finnish Organization of Canada and originally named *Työn Puisto* (Worker's Park)), the site is easily accessible to the public and the landscape is dynamic. However, there are disadvantages to the site, such as the property is 1.5 hectares in area,



[5.1] Lakes selected for analysis

Ramsey Lake, Nepahwin Lake and Bethel Lake selected for analysis their proximity to current Finnish establishments

- 1 Finlandia Village Rest Home
- 2 Leinala's Bakery
- 3 Siion Church
- 4 New Hope Lutheran Church

2 km

[5.2] Sites selected for analysis

Locations of Sites A through D and their proximity to current Finnish establishments

- 1 Finlandia Village Rest Home
- 2 Leinala's Bakery
- 3 Siion Church
- 4 New Hope Lutheran Church

1 km

there is currently several public programs operational on the site and there are a limited number of trees available on the site.

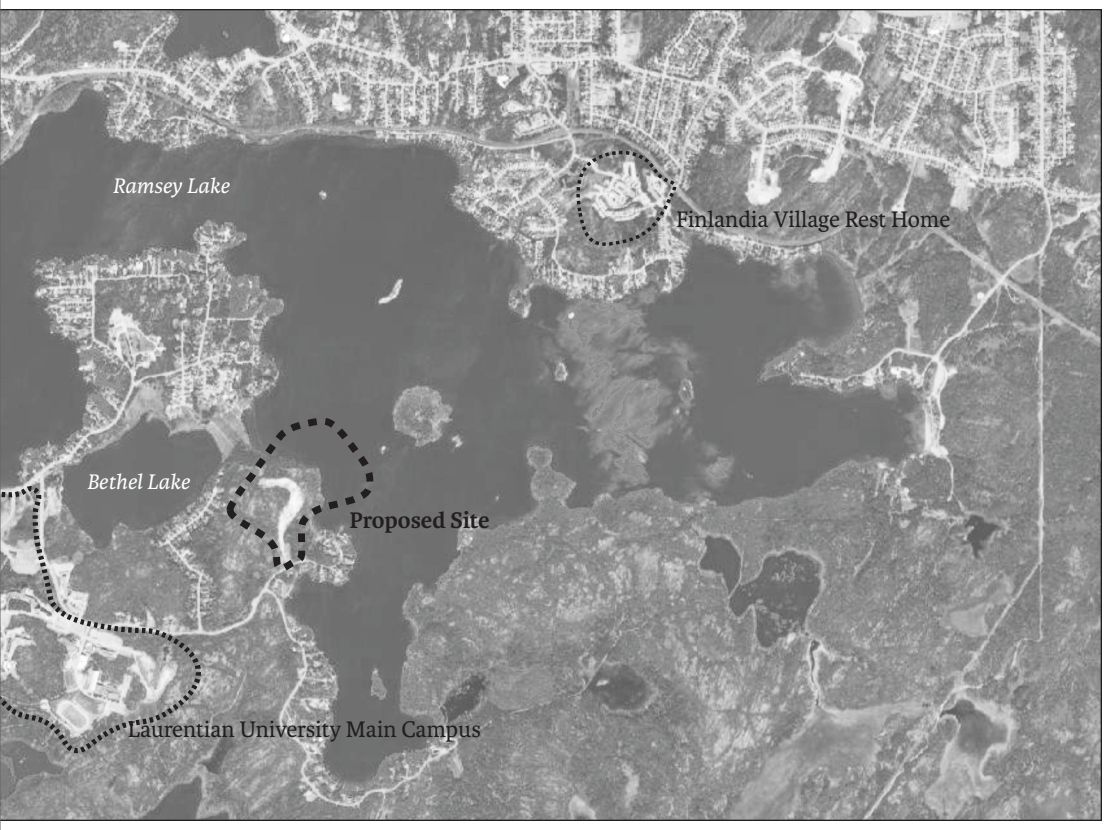
Site B is the first of two sites located along Lake Ramsey. It is situated between a residential dwelling and the Living with Lakes Center. The benefits to the site include the proximity to public transportation, the forested area and the stunning view to Ramsey Lake. The disadvantage to this site is the small area of 1 hectare, majority of the trees are sapling and the landscape drops quickly towards Ramsey Lake shoreline.

Site C is the second of two sites located on Ramsey. Lake This site has several advantages which include its large land area of 10 hectares, heavily populated with various types of deciduous and coniferous trees (mainly birch transition forest), there is a large amount of exposed bedrock ideal for installing the *kiuas* (stove) on, the shoreline gradually slopes down to lake and the area is secluded from the nearest residential neighbor and direct sight line to the area is limited, creating a private experience. A disadvantage to the site is the nearest public transportation stop is 2 kilometers from the entrance.[9]

Site D is located along the shorelines of Bethel Lake. The site is 5 hectares in area with a densely forested area and is located near to public transportation. The landscape is mainly exposed bedrock with dense forest consisting of deciduous and coniferous trees. The disadvantages to this is the small size of the lake, shallow lake conditions and the shoreline mainly consisting of residential properties.

The final phase included the selection of a site and further analysis. Site C was selected due to its large area, older growth forest and private location (See Figure 5.3 for aerial image of the site). A thorough analysis of the water at Site C showed no vegetation, adequate water depth of 10 feet, minimal residential zoned parcels neighboring the site, no fish spawning areas nearby and minimal boat activity passing through. Also, the site has the unique occurrence of having Finlandia Village Rest Home located across the water. The forest located on the site is categorized as a birch transition forest, which includes silver birch, beech and various types of pine.[10] (See Figure 5.4 for full analysis)

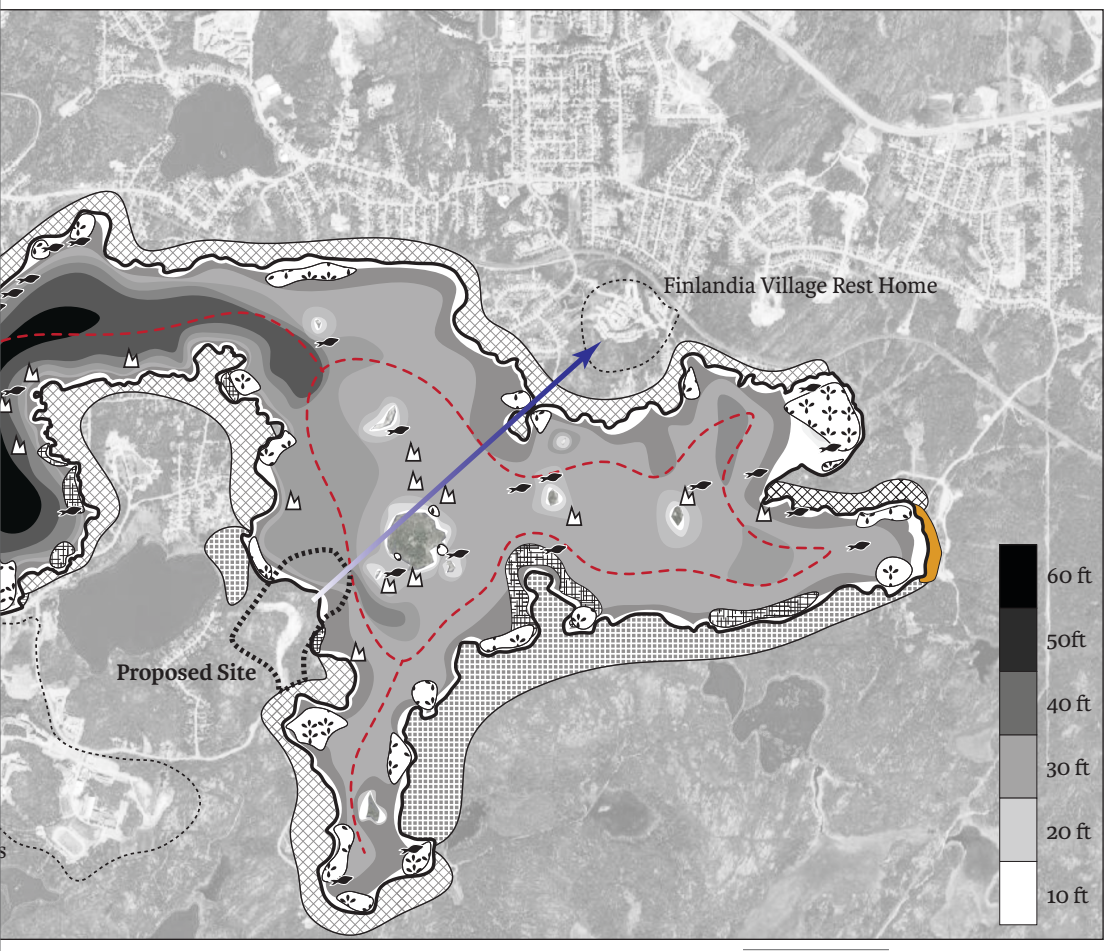
Two site visits were completed in January and March 2023 (See Figure 5.5 for site visit photographs). In January the site was accessed from Keast Drive. The journey begins with a log slightly slopped stretch which beings to incline to the top of the hill. The path is winding, medium sloped and forested on each side. In March, the site was accessed by snowshoe on the frozen lake. The shoreline had both steep and slowly sloping hillsides meeting the waters edge. The site receives most of its natural daylight from the east with minimal obstructions.



[5.3] Site selected for proposed intervention

Site C selected for the proposed architectural intervention

500 m



[5.4] Site analysis

In depth analysis of Lake Ramsey water and shore lines

- Vegetation
- Sand and rock shores
- Institution area
- Residential area
- Conservation land
- Beach
- Boat route & access
- Fish population
- Shoal

500 m

i

ii

iv

v

vii

iix

[5.5] Site visit photographs

iii

vi

ix

i, Road view
Halfway up the hill facing east

ii, Highest point
Highest point of the site facing east

iii, View to across the lake
View across the lake facing east

iv, Halfway looking down
Half way on the hillside looking down and facing east

v, Halfway looking up
Half way on the hillside looking up and facing west

vi, Pier location
View of hill facing south

vii, View to hillside
View of hill facing north

iix, Bottom of hill - one
Bottom of site looking facing south-west

ix, Bottom of hill - two
Bottom of site looking facing west

The proposed architectural intervention has been titled *Kokoontua Sauna*, which translates to Gather in the Sauna. This name reflects the purpose and intention of the sauna: to gather as community. The design is composed of six parts: the main road and parking, pathway to down/up the hill, main building, sauna, dock with ladder into Ramsey Lake and the community deck. See Figure 5.6 for site plan.

Kokoontua Sauna (Gather in the Sauna)

The first part, the main road and parking, begins off Keast Drive and slowly winds up to the top of the site. The parking is located in a naturally flat area with small vegetative growth. There is a sitting area located off of the parking lot for users to gather and wait for other members of their group. The area provides a gorgeous view across Ramsey Lake. The service road tapers off the main road at the bottom of the hill and ends beside the sauna building. This road can also be utilized by those who have limited mobility.

main road, parking lot, service road

The second part is the main pathway which begins at the parking lot and ends at the shoreline of Ramsey Lake. See Figure 5.7 for site section showing the descent from the top of the hill to the shoreline. The materials used to build the pathway included gravel paths framed with lumber and wooden staircases in steep areas. As the users journey down the pathway to the sauna they are encouraged by signage to take birch branches and make their own *vihta* (birch whisk). The signage includes instructions on how to make a *vihta*.

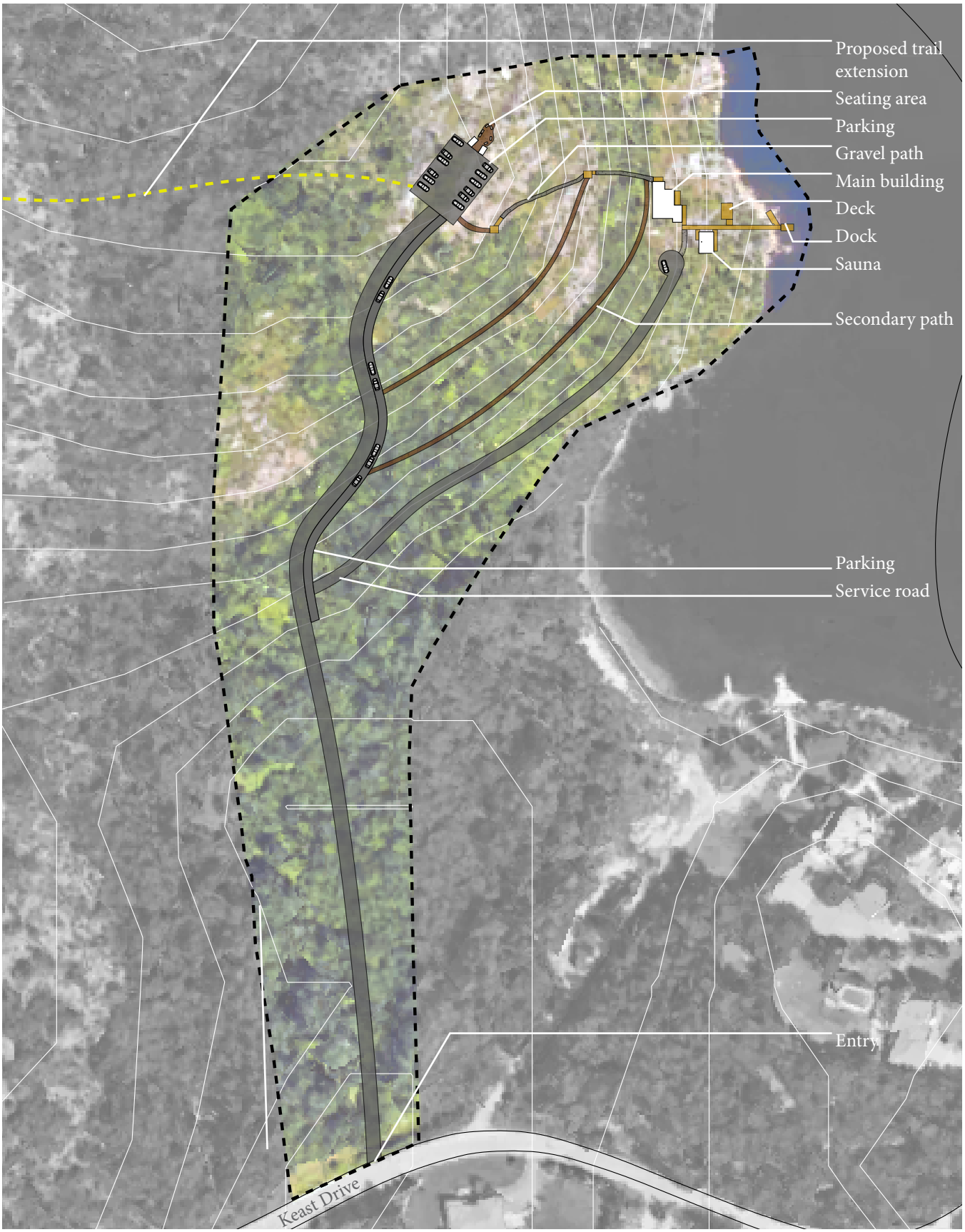
main pathway

Once the users have completed the journey, they enter the third portion of the design: the main building. See 5.8 for Floor Plan of the main building. The building is built from hand-hewn logs to form the walls and traditional sod roof. See 5.9 for east elevation of the main building. The door handle is carved from a birch branch with a strip of leather wound around the branch. (See Appendix A for main building entry door handle). This detail introduces the users to the symphony of experiences their senses will encounter during the sauna process. The users enter the main building through a vestibule where they can sit and hang their coats and remove their shoes. Next, the users enter the main room where they are welcomed with a soft and intimate material palette. The design included wooden tables and leather cushioned seating where users can gather, share stories and wait in a relaxing setting. The main room has access to an exterior deck through an overhead door made with timber and rectangular windows. There are two changing rooms located off the back of the space. The handle to this change room is a leather strap which has been fastened to a sliding door made of birch wood members (See Appendix A for change room door handle). The exit towards the sauna includes a large vestibule with ample storage for winter clothing a gear. It is anticipated that users will travel to the site by use of the frozen lake and the main hillside journey in the winter months.

main building

To arrive at the sauna, the users exit the rear vestibule of the main building onto a wooden staircase. See 5.8 for Floor Plan of the sauna. It is a short distance to the sauna building which is hand built by the community using mainly materials

sauna



The site plan shows the entry off Keast Drive, parking located on top of the hill, pathway from the parking lot to Ramsey Lake, main building, sauna, dock and community deck. These programs have been located in clear, flat areas to reduce the amount of tree clearing required.

[5.6] Site plan

500 m

directly from the site. See 5.9 for east elevation of the sauna. The sauna door handle is carved from a birch branch with a single strip of leather placed down the middle (See Appendix A for sauna door handle). The users enter the sauna and are immediately met with a shower to rinse their bodies before entering the steam room. The hot water for the shower is connected to the *kiuas* (stove) and mixed with cool lake water. The entry to the steam room is located beside the shower area. Users enter the steam room which has a long, rectangular window facing the water, the *kiuas* is directly to the right, the steps to the top bench and located in front of the door and beside them is a lower sitting. The *kiuas* is a heat-storage stove fueled with a wood fire. Bathes will experience the smell of the fire smoke as they bathe.

kiuas (stove)

Once the bathers are sufficiently heated they have several areas where they can cool down. There is an exterior cool-down area located on the front of the sauna building where users can sit and enjoy the view of the lake or the bathers can walk down the pathway towards Ramsey Lake sit on the dockside benches or plunge into the waters. This is the fifth part of the design. (See Figure 5.7 showing site section with rest areas, Figure 5.8 showing floor plan of rest areas and Figure 5.9 for east elevation view of rest areas.)

dock on Ramsey Lake

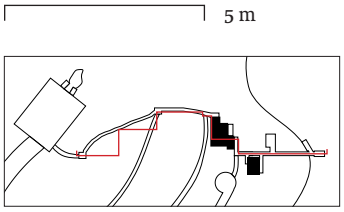
The last part of the design is the community deck placed between the sauna and dock. Here, bathers can rest, tell stories, cook on the barbeque, eat, drink and share time together after they have finished bathing. The deck has built-in wood benches to sit on and a railing to hang towels. (See Figure 5.7 showing site section with community deck, Figure 5.8 showing floor plan of community deck and Figure 5.9 for east elevation view of community deck.)

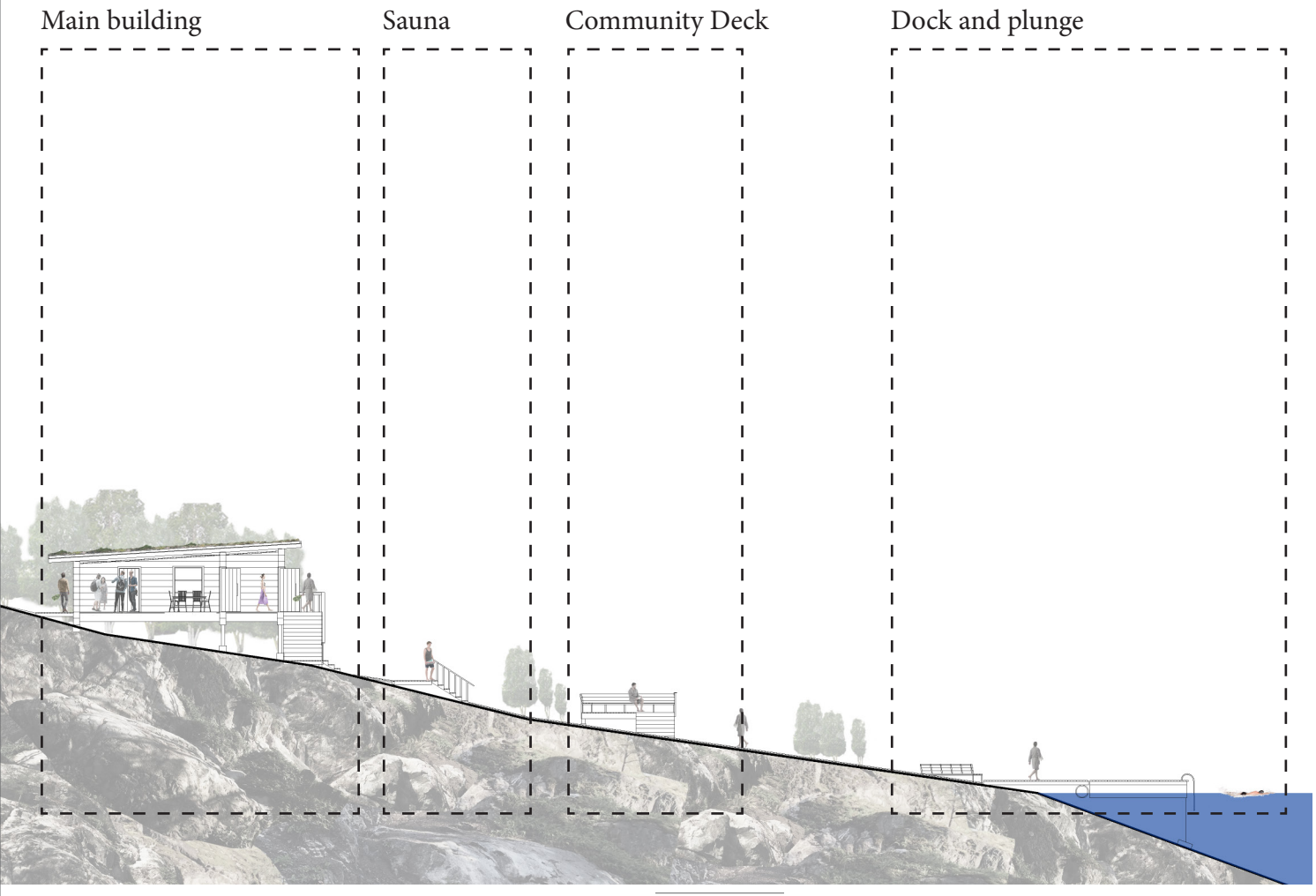
community deck

The traditional Finnish sauna is designed to be used in all seasons. Figure 5.10 shows the sauna process through the warmer months of the year. Beginning with the pathway towards the changing area, the sauna, the plunge into Ramsey Lake and lastly the exterior community gathering deck. Figure 5.11 shows the sauna process during the winter months. The experience begins with the user using the snow-covered pathway towards the main building to change. A hot steam is completed, followed by a plunge into an ice hole in Ramsey Lake (or rolling the snow) and lastly followed by gathering in the interior community space to enjoy Finnish *pulla* (bread) and coffee with friends and family.

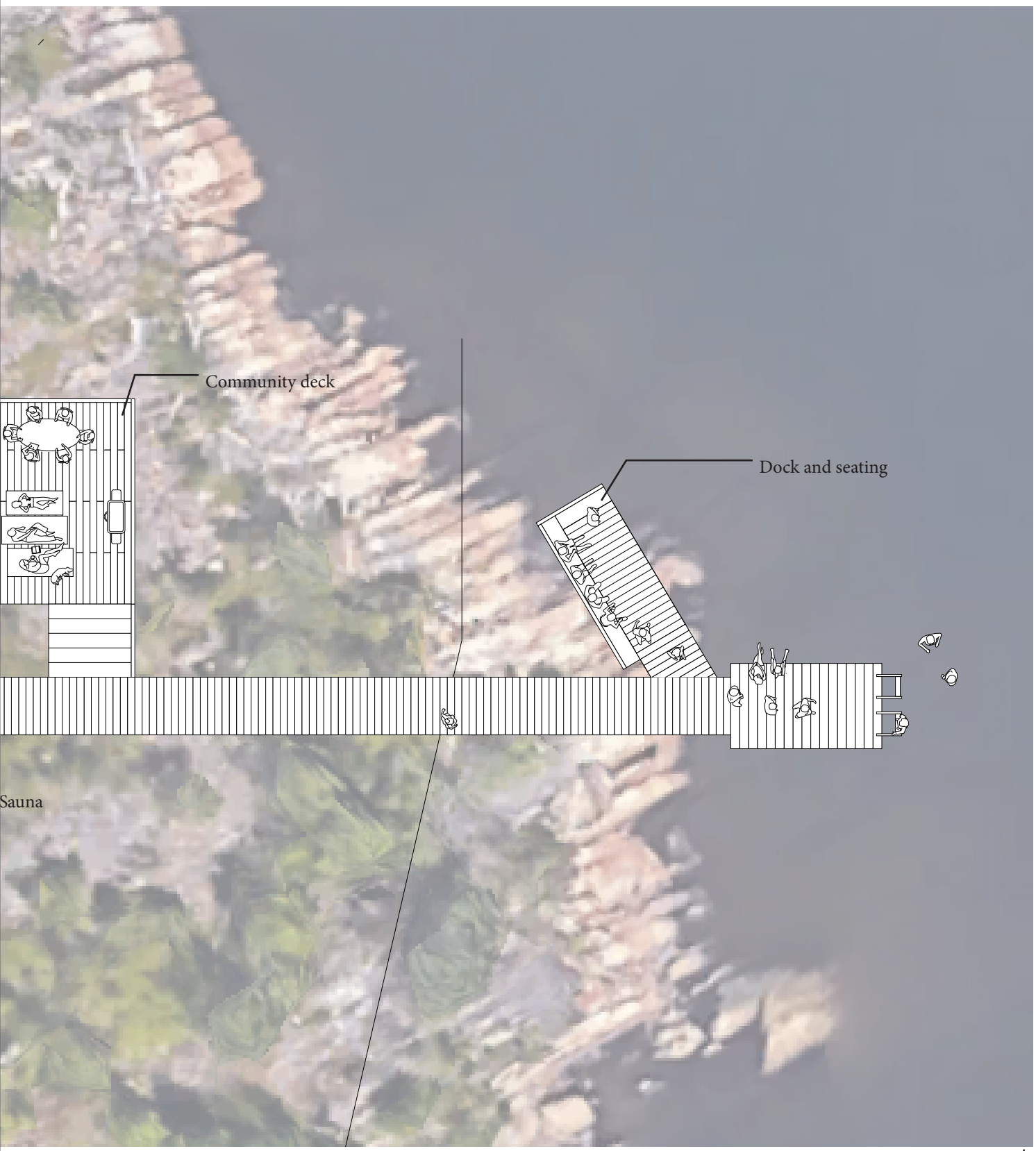
[5.7] West-east site section

The section line runs from west to east showing the experience of the journey from the top of the hill to the shoreline.



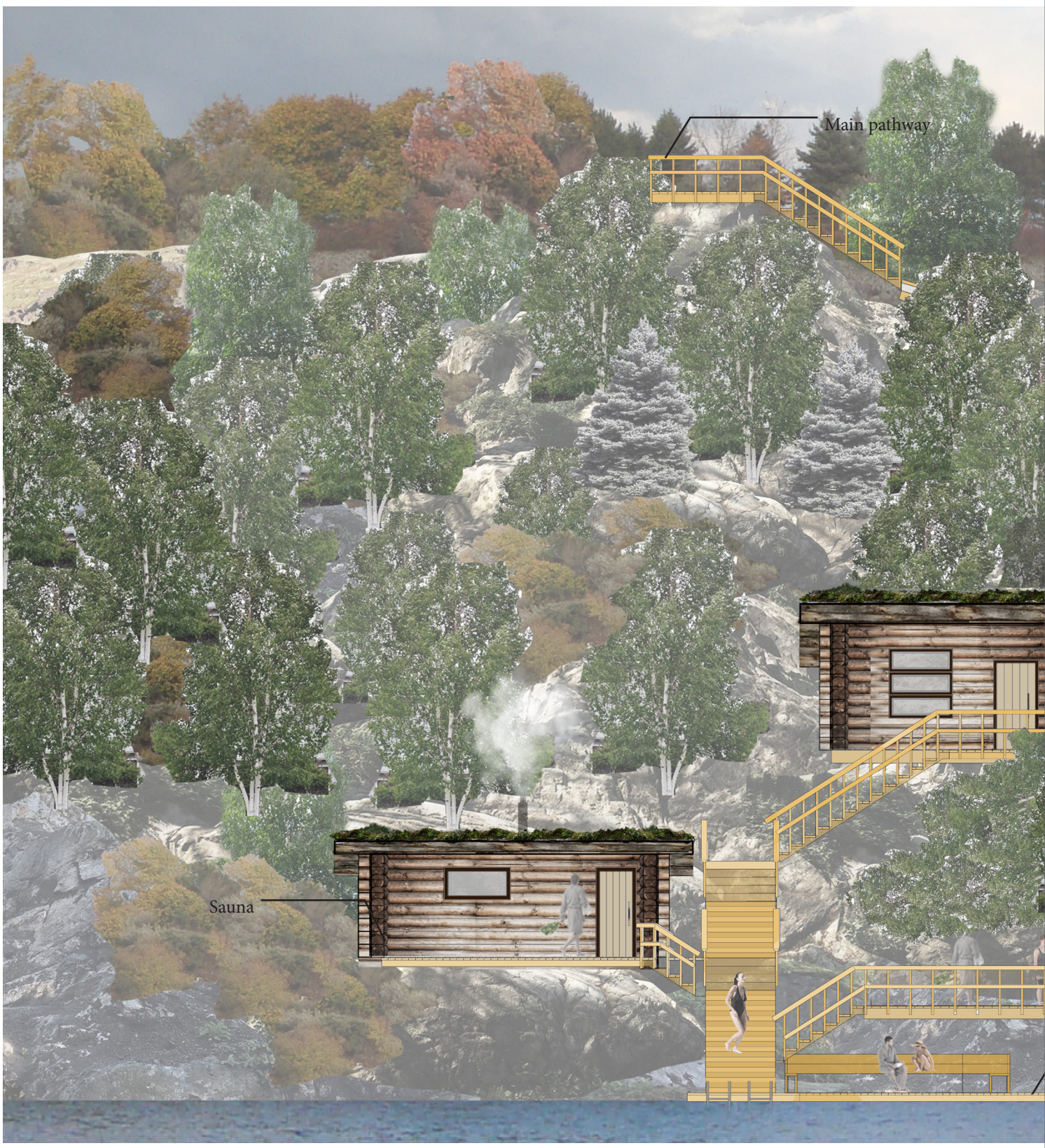


The floor plain shows the layout of the main building, sauna, community deck, dock with plunge into Ramsey Lake and the journey between each space. The service road allows for maintenance staff and users with limited mobility to have an easier access route to the main building and sauna. The pathway from the sauna to the dock is direct to allow users a fast and simple journey to cool down in the water.



[5.8] Floor plan

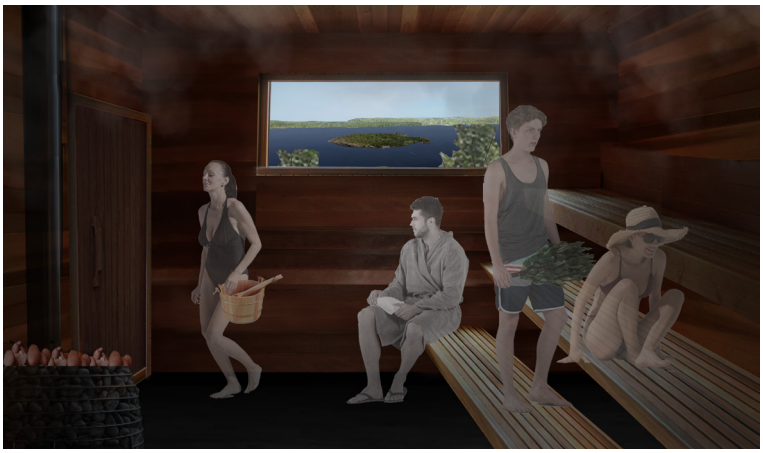
50 m

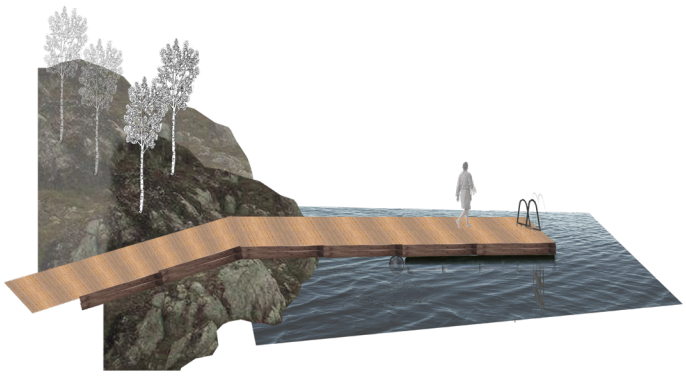


The east elevation shows the entire journey of the proposed architectural project. The hewn log facades showcase the traditional design of the project and compliment the natural landscape.

[5.9] East Elevation

5 m





[5.10] Summer sauna sequence

The summer sauna bathing sequence begins with at the top of hill. The bathers walk down the wooden steps and along gravel pathway as they gather birch branches to make their *vihta*.

Once in the sauna, the bathers have a clear view across Ramsey Lake to Galliard Island. The stones are red hot and ready to create smooth löyly.

The bathers run down to the lake when they become red hot and plunge into the steel-blue, cool waters of Ramsey Lake.

After the bathers completed bathing, they gather together on the deck to share snacks, drinks and stories together.

[5.11] Winter sauna sequence

The winter sauna bathing sequence begins with at the top of hill. The bathers walk down the snow covered steps and along gravel pathway through the naked birch trees.

In the sauna the bathers take in the view of the frozen lake.

Once the bathers are steaming, they run towards the lake to plunge into the *avanto* (ice hole) or roll in the snow to cool down.

After the bathers completed bathing, they gather together inside the main building to share snacks, drinks and stories together.

Building Phases

The project is designed to be completed in four phases. See Figure 5.12 for site plan showing the four phases of the project.

phases of the project

First Phase

The first phase begins with the layout of the roadway from Keast Drive to the top of the hill, the parking area and the service road. Once this is complete, experienced contracts with the help of community members clear the path and parking area of vegetative growth, trees and boulders. The cleared areas will be layered with granular material and compacted.

main road, parking, service road

Second Phase

The second phase consists of building the main pathway, dock and community deck. The pathway begins at the parking lot and ends at the dock to enter Ramsey Lake. The materials used to build the pathway included gravel paths framed with lumber and wooden staircases located in steep areas. The railing tops are built with split logs. The spindles are connected to the railing tops using dowelled connections (See Figure 5.13). The dock is built with aluminum framing with deck boards placed on top. The dock floats on the water using pontoons. The dock is held in place by chains which are attached to concrete anchors placed in the water (See Figure 5.15). The dock can be easily removed from and placed in the water by members of the community in the spring and late fall. The deck is built using a pier detail consisting of wood members and concrete blocks anchored into the bedrock. (See Figure 5.14).

main pathway, dock on Ramsey Lake, community deck

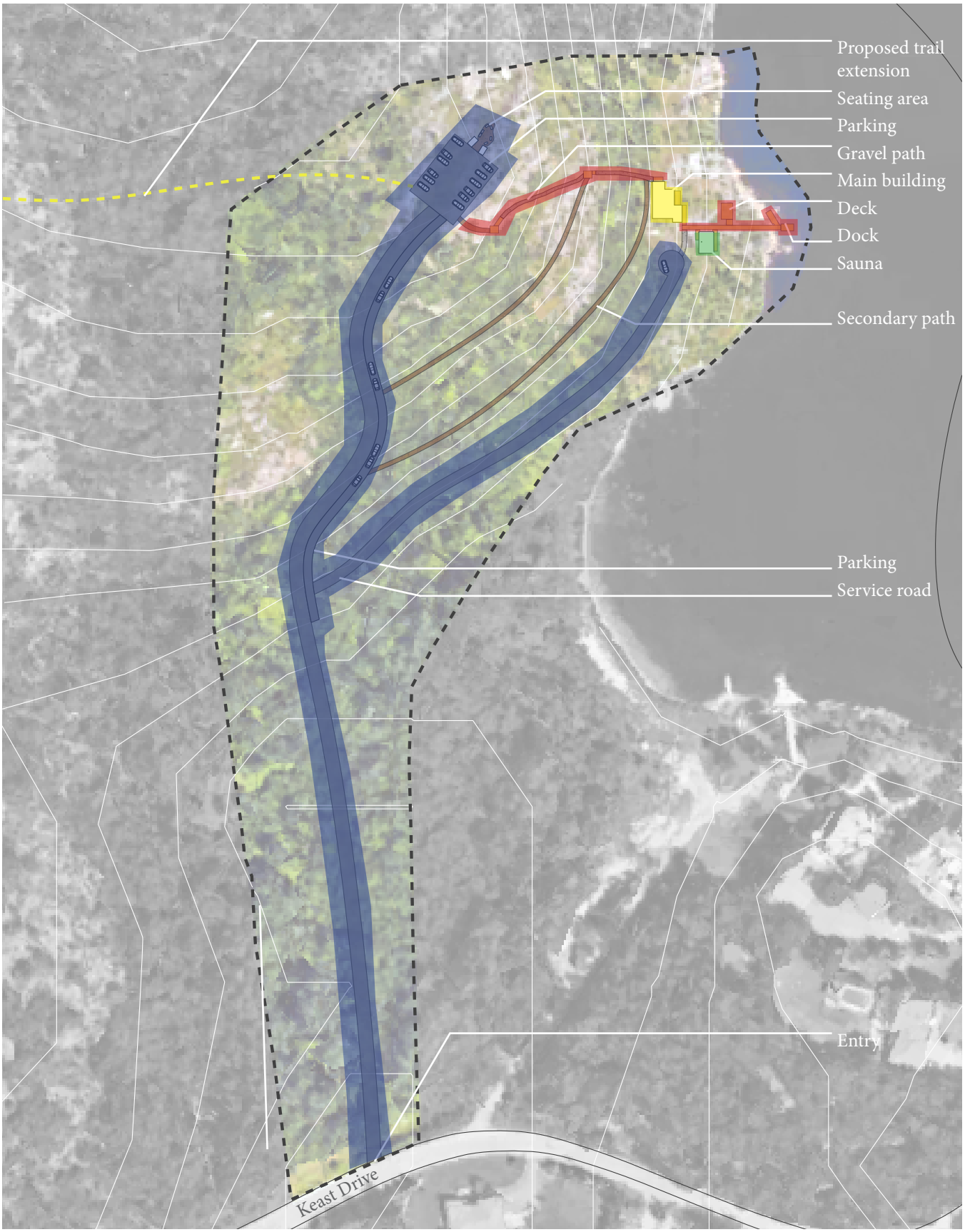
Third Phase

The third phase includes building the sauna with members of the community. (See Figure 5.16 for images of the building process). It is designed in a fashion where the community of Sudbury can build the sauna themselves. There are a total of four stages developed for the sauna building process. Each phase occurs in a specific season, allowing the sauna to be built over the course of one year. In order to preserve the tangible knowledge of the sauna building process, the building has been designed in such a way that all members of the community can take part in the building process. The sauna is crafted with natural materials and thus it naturally decays and requires rebuilding every 20 - 30 years. This natural process allows for each passing generation to be involved with the sauna building process and for the cultural knowledge to be preserved. The section perspective of the sauna (See Figure 5.17) shows the building composition and portions of the sauna.

community built sauna

traditional log building methods

The first stage begins in winter on December 6th, which marks Independence Day for Finland. Finland was previously a Grand Duchy in the Russian empire for 108 years and belonged to Sweden before that.[11] This is still regarded as an important day in Finnish history and culture. During the first phase, members of the community gather to begin locating trees which meet birch trees with a diameter of 200 mm to 300 mm. The trees which are selected are felled and stored on site.



Phase One Phase Two Phase Three Phase Four

[5.12] Building phases

This site plan shows the proposed building phases of the project.

500 m

The second stage begins on May 1st which is celebrated as May Day in Finland. This day is celebrated by gathering together in a festive manner, eating cultural food and wearing one's school graduation cap.[12] This phase consists of the community gathering together to begin building the stone foundation (See Figure 5.18 (i) for stone foundation detail). The floor joists are hand-hewn on top of the hill and then they are brought down the sauna location where the joinery is detailed. The sauna floor assembly consists of birch sleepers, a waterproofing layer, subflooring, insulation, wood joists hewn from birch trees which are present on the site and a layer of sheathing. (See Figure 5.18 (ii) for floor assembly). The *kiuas* (stove) area consists of masonry brick.

Independence Day

May Day

kiuas (stove)

The third stage begins on June 23, which is Midsummer Eve in Finland. This holiday was originally a tribute to Ukko. He is represented in the Kalevala (National Epic of Finland) as the god of thunder who was responsible for rain. This holiday is typically celebrated with festivals, bonfires and community gatherings. [13] During this phase, the community is encouraged to host a bonfire where offcuts from the process can be burned. During this phase, the members of the community gather to begin harvesting birch bark for the sauna roof while the hand-hewn logs are stacked to create the sauna walls (See Figure 5.18 (ii) for log joinery detail). The interior wall separating the steam room from the shower area is a double wall to increase the fire resistance rating. The wall assembly is completed with a wall of hewn birch logs, 3" x 6" framing with insulation, sheathing, waterproofing layer and concrete wall tiles. (See Figure 5.15 (iv) for interior wall assembly).

Midsummer Eve

This roof building process begins with the participants framing the roof. The assembly consists of ceiling boards, layers of insulation, ceiling beams, roof boards, and a birch bark layer, followed by two layers of turf and sod. (See Figure 5.18 (v) for roof assembly). This sequence of materials can be completed by the community easily with proper instruction. While the roof is being completed the interior finishes are completed as well. This includes installing the *kiuas*, sauna benches, shower head and tiles.

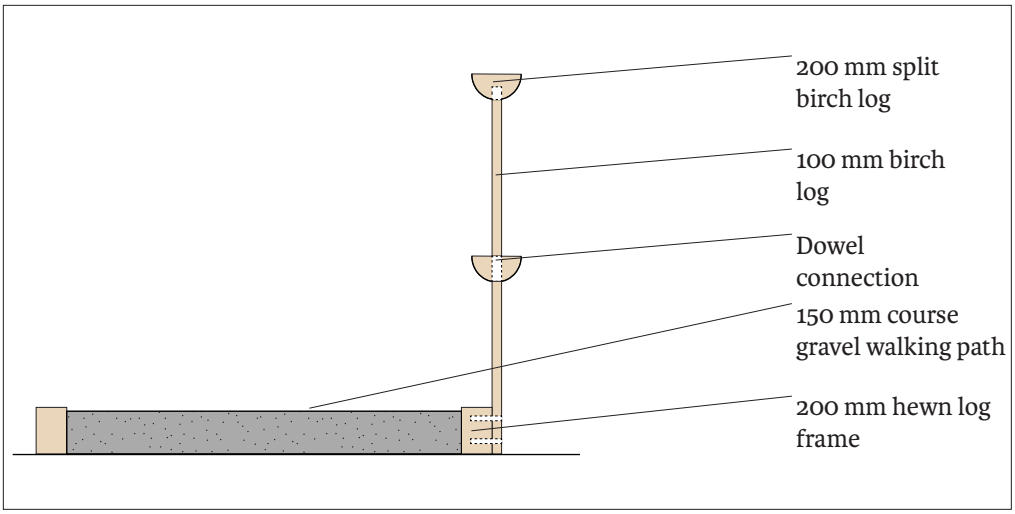
This final stage of the sauna building process beings on or around August 1st, a day which will represent the completion of the sauna. The finishing touches will be installed. This includes the windows and doors (See Figure (vi) for window assembly). The windows are rectangular in shape to compliment the hewn logs and are operable to allow for ventilation.

kiuas (stove)

Fourth Phase

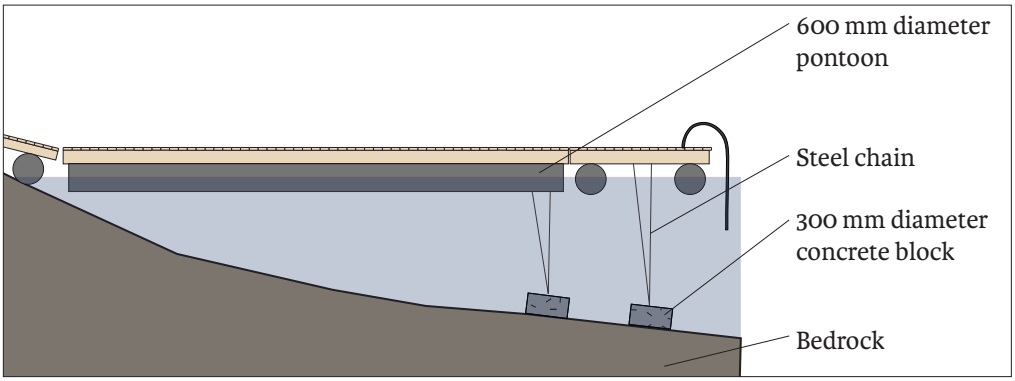
The fourth phase and final phase of the project includes the construction of the main building. Due to the complexities of the main building it is built by licensed contractors with the help of volunteers of the community. The building uses a post secured to a concrete block which is anchored to the bedrock. This is a similar connection used by the community deck (See Figure 5.14).

main building



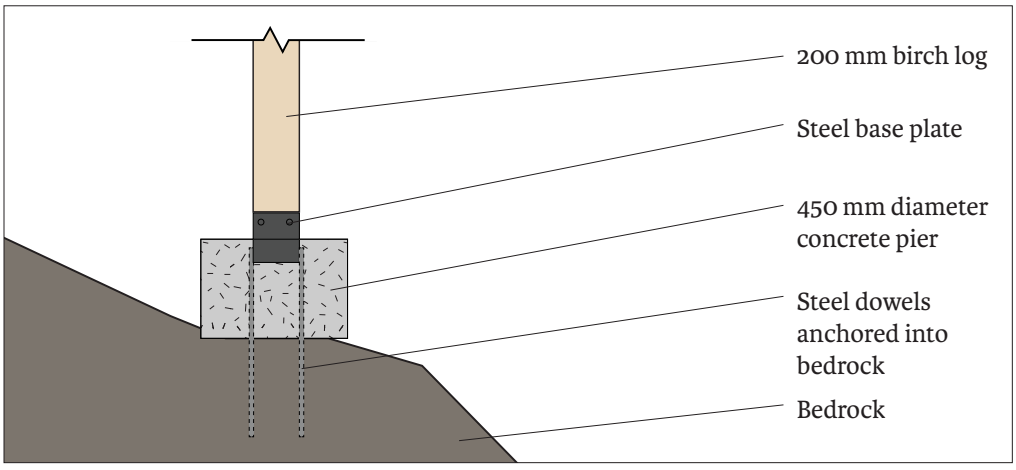
[5.13] Railing detail

Birch logs are split in half to create the top railing and middle railing supports. The spindles are connected to the rails using dowel connections. In areas where the grade is flat granular material is used as the foot path.



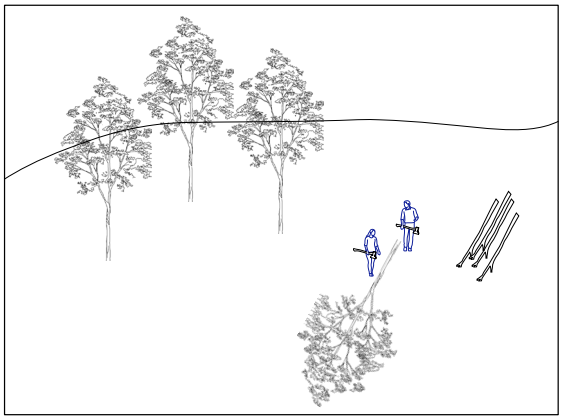
[5.14] Dock detail

The dock frame consists of an aluminum frame with birch wood installed on the top and sides. The dock floats in th water by using pontoons and is anchored in spot by using concrete anchors.



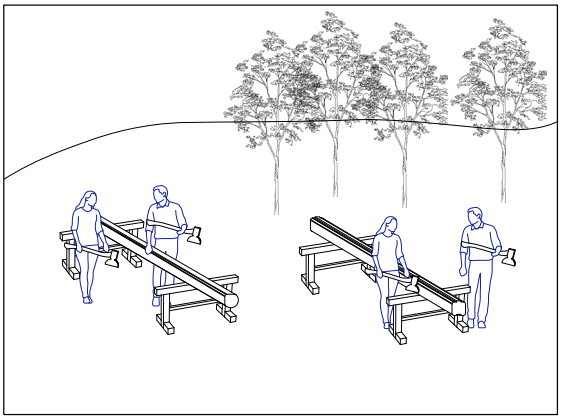
[5.15] Pier detail

Pier detail is used for the community deck and the main building. The wooden posts are connected to concrete block which are anchored into the bedrock.



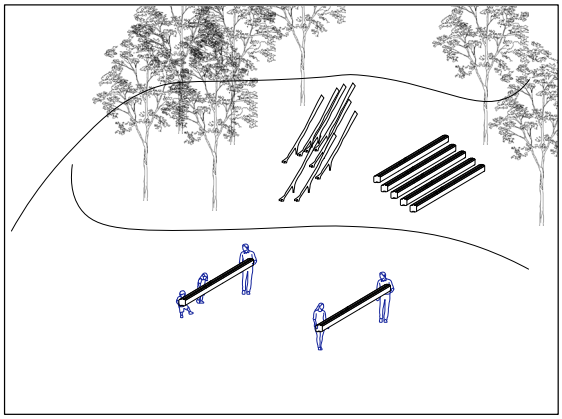
Phase 1.1: Felling of the birch trees

This phase beings on December 6th of each year the sauna is built/ rebuilt to commemorate Finland's Independence Day. The phase marks the beginning of felling of the birch trees for the sauna.



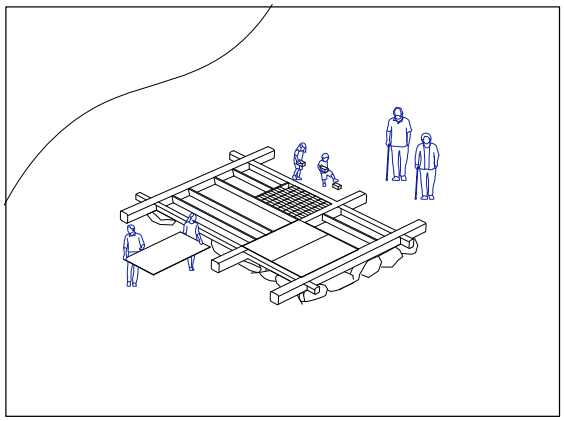
Phase 2.1: Hewing and grooving the logs

Phase 2 beings on May 1st of each building year to commemorate May Day. This day marks the day the community beings to hew and groove the logs for building the floor and walls.



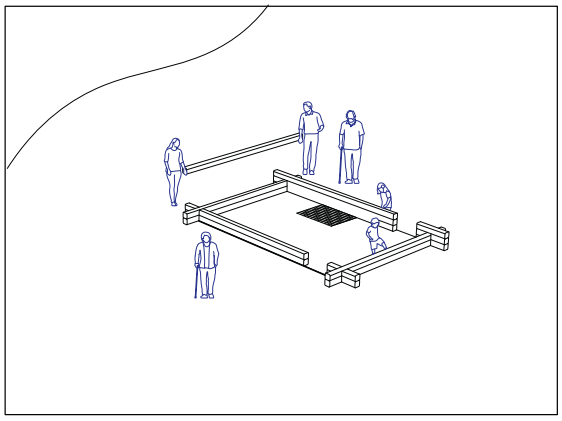
Phase 2.2: Transporting the logs

Once the logs are prepared, they are transported down the hill by hand by the community.



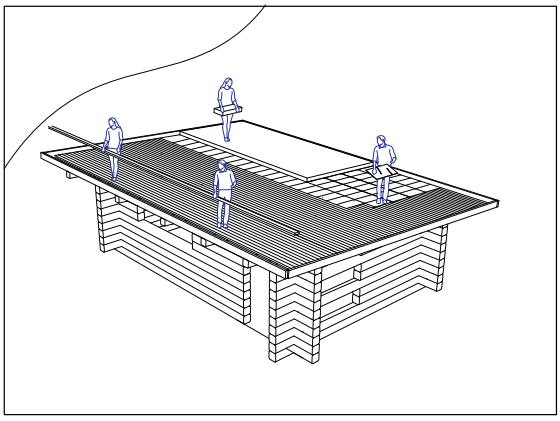
Phase 2.3: Sauna floor

As the floor joists are being prepared the rock foundation is being built with bedrock, boulder and mortar. The *kiuas* (stove) flooring is located on bedrock and composed of masonry bricks. The floor joists are hand hewn from birch logs and placed on top of the rock foundation. Once the joists are installed there a layer of sheathing, waterproofing later, insulation and floor boards installed on top.



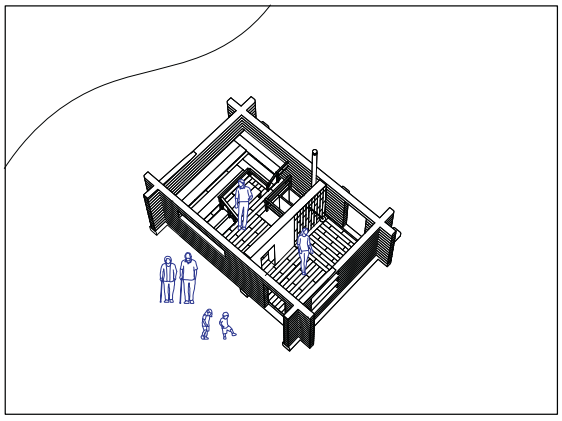
Phase 3.1: Sauna walls

This phase begins on Midsummer Eve. Members of the community begin joining the hand-hewn birch logs with V grooves and dovetail joints. The openings for the doors and windows are also cut out at this time.



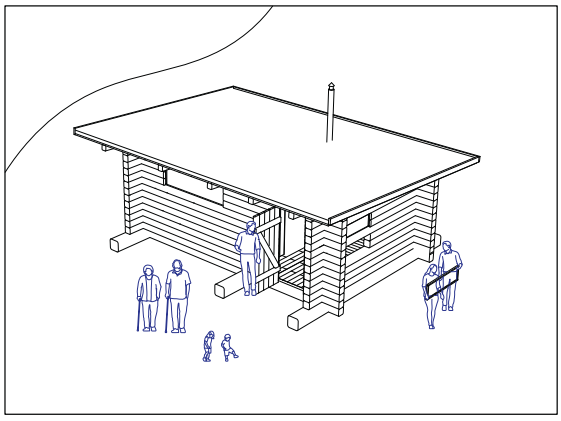
Phase 3.2: Sauna roof

Once the walls are completed, the roof assembly can begin. The assembly begins with framing the roof and laying boards down. Community members harvest birch bark from the site and lay two layers on the roof to be used as a waterproofing membrane. Lastly, two layers of sod are placed on the roof.



Phase 3.4: Interior finishes

The final part of the third phase has the community members installing the interior finishes of the sauna. This includes the *kiuas*, sauna benches, shower head and tile.



Phase 4.1: Final touches

The final phase of the sauna building process involves the installation of the windows, doors and a wooden sauna door handle. Now it is time for a sauna!

[5.16] Sauna building process

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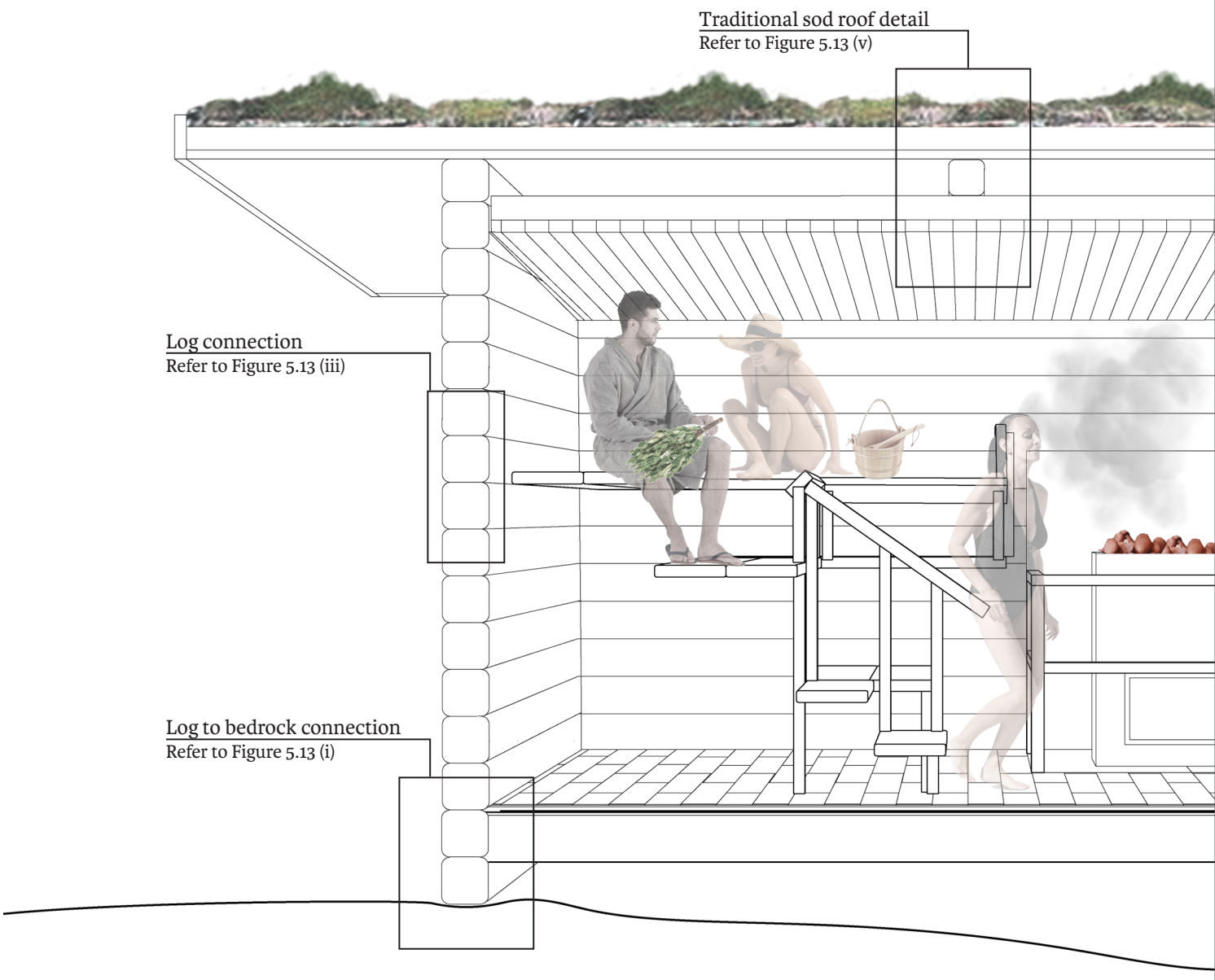
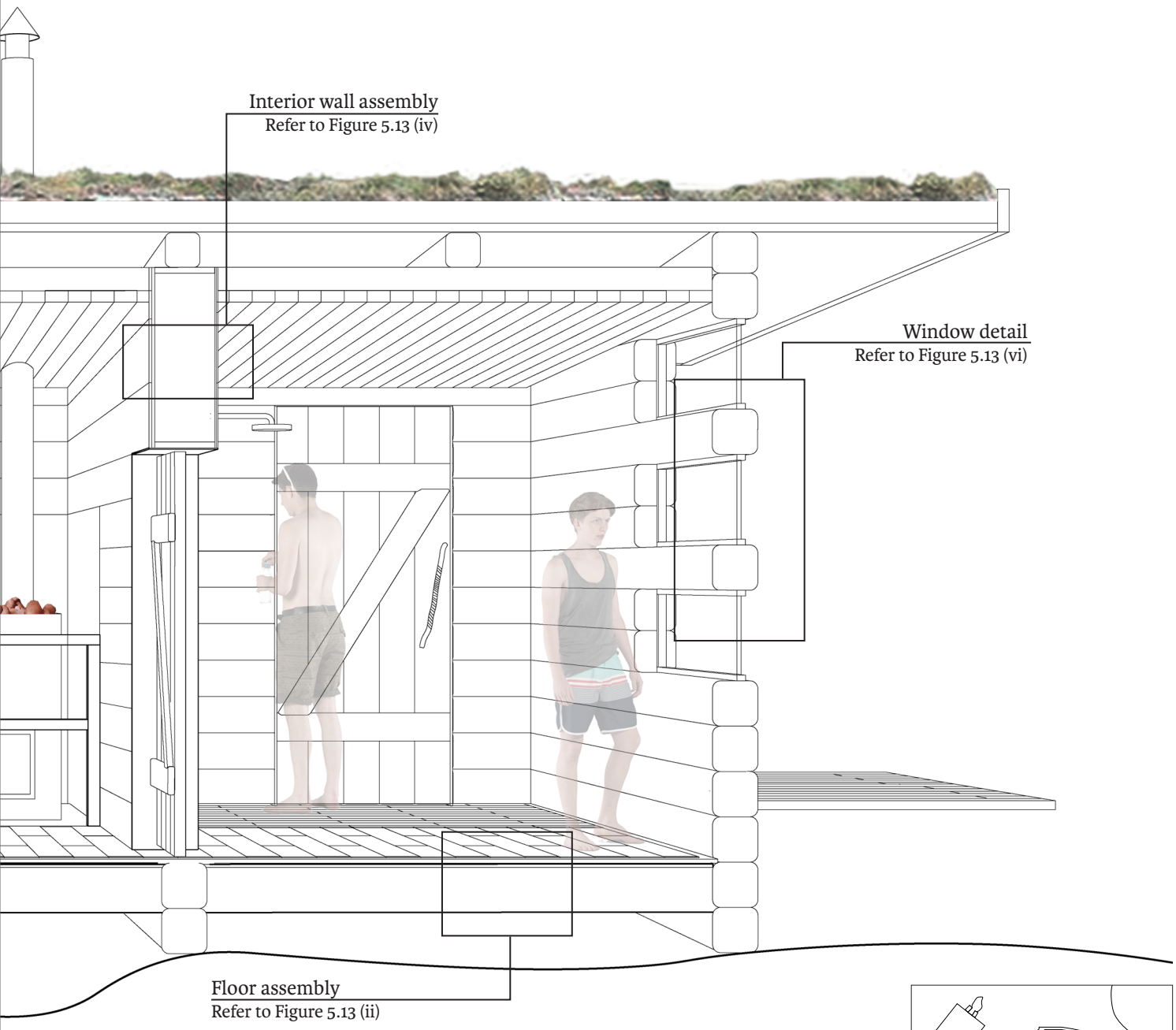
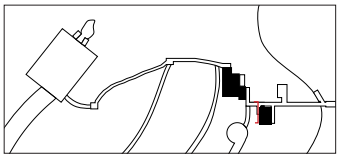


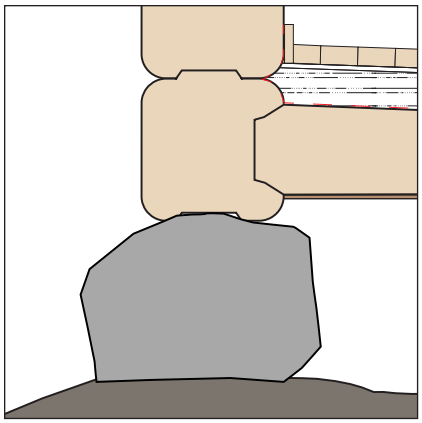
The sauna perspective section showing a cut from south to north through the building shows the building components, materiality and spacial qualities of the design.





[5.17] Sauna section perspective (south-north)

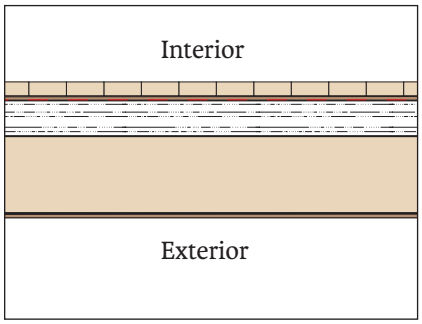
1 m



(i) Sauna rock foundation

Sauna foundation to be made on existing bedrock with boulders (250 mm in diameter or larger) used to fill in the spaces below the first layer of the log walls once leveled

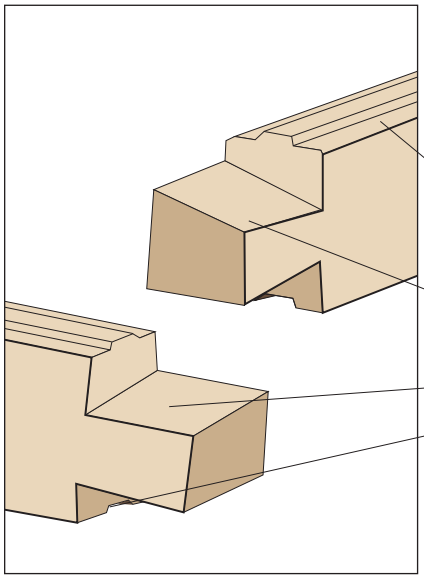
Mortar to be used between the boulders and bedrock as necessary



(ii) Sauna floor assembly

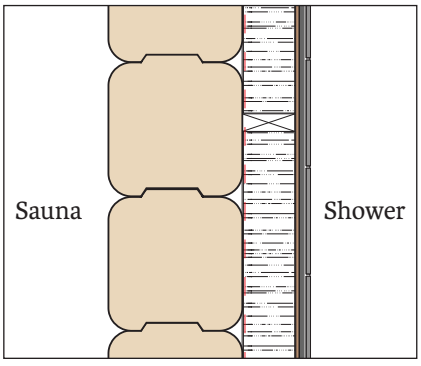
From interior to exterior:

50 mm birch floor boards
100 mm insulation board
150 mm diameter floor joists hand hewn from trees on site
13 mm sheathing



(ii) Log connection

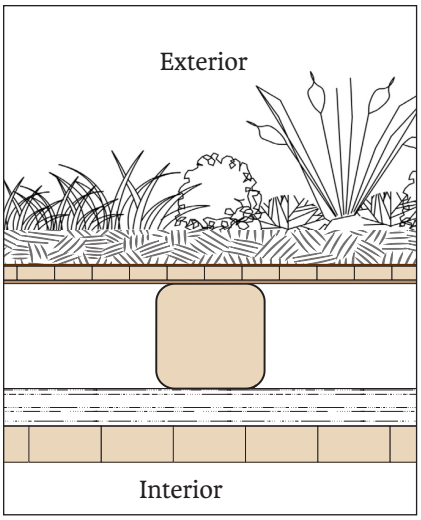
200mm birch trees hand hewn
Dovetail joints and v groove are made with hand tools such as ax, chisel and saw



(iv) Sauna interior wall assembly

From sauna side to shower side:

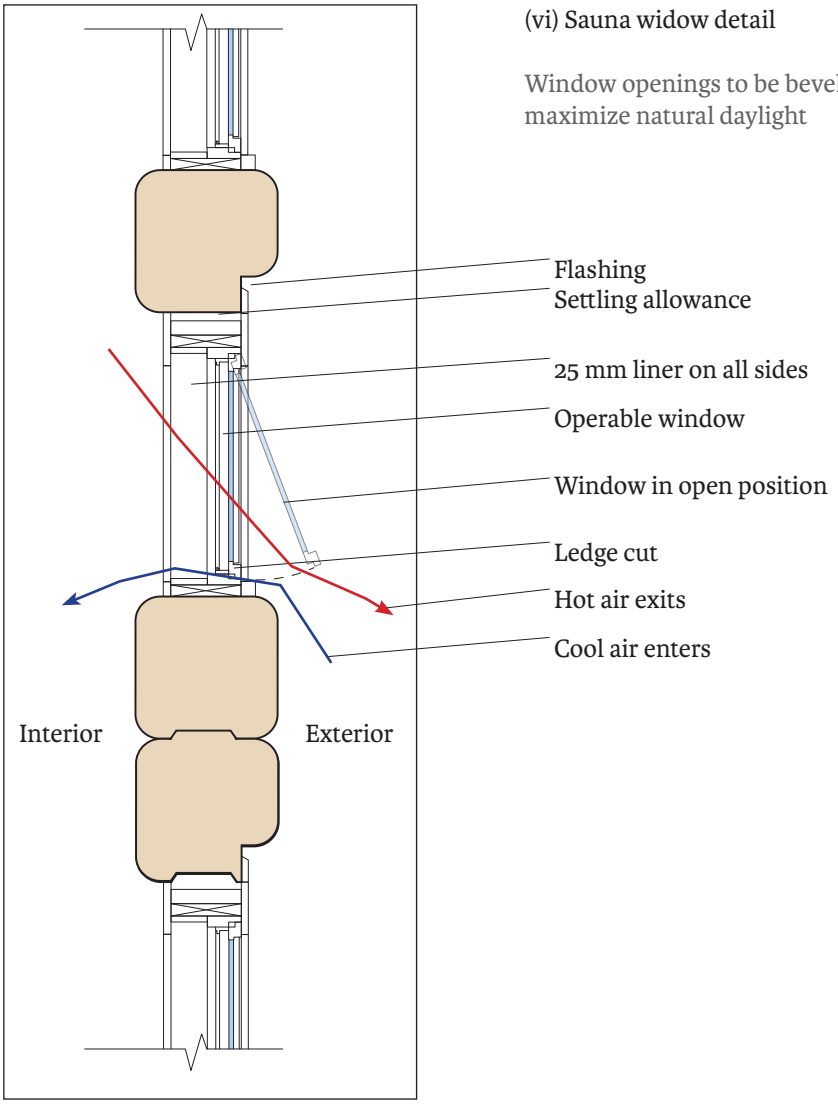
200 mm diameter birch trees hand hewn
13 mm sheathing
vapor barrier
2" x 4" stick framed wall with insulation inserted
13mm sheathing
13 mm cement board
wall tile



(v) Sauna roof assembly

From interior to exterior:

100 mm grass sod (facing up)
100 mm grass sod (facing down)
2 layers birch bark harvested from site
50 cm boards
150 mm diameter hand hewn beams
200 insulation
50 mm birch ceiling boards



(vi) Sauna widow detail

Window openings to be bevel cut to maximize natural daylight

[5.18] (i-vi) Sauna details

Scale 1:10

Conclusion

The analysis of the public lakes in the Sudbury area shows the multiple opportunities to build community saunas. This design-build project has the potential to be the first of many community saunas within the city. By involving the community with the sauna building process it cultivates an opportunity to share and persevere cultural knowledge in the community. Furthermore, the naturally decaying structure allows for the sauna to be rebuilt with ever passing generation and the Finnish cultural knowledge of the sauna to be handed down.

Endnotes

1 David William Salmela, Saunas : Short Stories, Poems, Illustrations, and Photographs, (edited by David William Salmela, Minnetonka, MN: Otsa Press, 2021) 26.

2 Beaches and Lakes, accessed April 27, 2023, https://www.greatersudbury.ca/play/beaches-and-lakes/.

3 "Ramsey Lake 2019 Phosphorus," Ramsey Lake, accessed April 27, 2023, https://www.greatersudbury.ca/play/beaches-and-lakes/lakes/local-lake-descriptions/ramsey-lake/.

4 Nancy Dolson and Darren Niemi, RAMSEY LAKE: An Assessment of the Fish Community and a Review of the Fisheries Management History (1989 Urban Lakes Study), (Ontario Ministry of Natural Resources Cooperative Freshwater Ecology Unit, Laurentian University: Sudbury, ON, 1989) 10-20.

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6 "Lake Nepahwin 2019," Lake Nepahwin, accessed May 3, 2023, https://www.greatersudbury.ca/play/beaches-and-lakes/lakes/local-lake-descriptions/lake-nepahwin/.

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8 L. M. Edelsward, Sauna as Symbol : Society and Culture in Finland, (New York: P. Lang, 1991), 16

9 Nancy Dolson and Darren Niemi, RAMSEY LAKE: An Assessment of the Fish Community and a Review of the Fisheries Management History (1989 Urban Lakes Study), (Ontario Ministry of Natural Resources Cooperative Freshwater Ecology Unit, Laurentian University: Sudbury, ON, 1989) 10-20.

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11 Aucor, "Finns Celebrate Freedom Every December," thisisFINLAND, December 5, 2022, https://finland.fi/life-society/finns-celebrate-freedom-every-december/.

12 Aucor, “Finland Shows Carnival Colours on May Day,” thisisFINLAND, April 18, 2023, https://finland.fi/life-society/finland-shows-carnival-colours-on-may-day/.

13 Aucor, “Enjoying Midsummer the Finnish Way,” thisisFINLAND, June 23, 2021, https://finland.fi/life-society/enjoying-midsummer-the-finnish-way/.

Annikki of goodly name
Warmed the sauna secretly
With kindling that the wind has broken,
By the lightening struck asunder;
Chose the right stones from the rapids
That the steam might rise up hotly
When the stones are splashed with water
Carried here from a lovers' spring
Bubbling from a whey-like quagmire.
Cut a leafy slapper for hum,
Tender one of sapling sprays,
And she steeped it honey-soft,
Steamed it on a honey stone.
Then dissolving milky ash
With marrow, she prepared the soap,
Foamy, frothy, glistening soap,
As a cleanser for the suitor,
For his head and for his body.

Kalevala, Runo 18 [1]

1 Christie Pearson, The Architecture of Bathing: Body, Landscape, Art, (Cambridge, Massachusetts: The MIT Press, 2020) 323.

Conclusion

An analysis of several traditional communal bathing rituals shows the architectural program is similar between exceedingly different cultures. Each culture has traditional elements which are celebrated by all the human senses during the communal bathing process. Through an in depth analysis of the Finnish sauna, it is clear to see the evolution of the *kiuas* (stove) from a wood fired system to an electric heater has led to a decrease in sensual experiences of the traditional sauna.

communal cleansing

kiuas (sauna stove)

löyly (steam).

The case study review of Kärsämäki Shingle Church proved that engaging the community in hand built project using traditional building methods shares and preserves the knowledge in the community. Löyly Sauna and Lonna Sauna, both in Helsinki, Finland both utilize traditional wood-fired *kiuas* (stove) to enhance the traditional sauna bathing experience. The Löyly Sauna design is unique and contemporary build which engages the community by creating a building which can be used as a landscape element for the users. Lonna Sauna design utilized traditional sauna building methods in a modern way to engage the users in the experience of a traditional Finnish sauna.

cultural knowledge

cultural knowledge gap

symbolic ethnicity

The community of Sudbury, Ontario has a high Finnish population with no traditional sauna accessible for the community. This lack of cultural establishment has contributed to the a gap in the Finnish cultural knowledge in the city. By using traditional wood-fired heat storage *kiuas* and log building methods, which both bring the community of Sudbury together at the same time, allow for the opportunity to share cultural knowledge, preserve it, and revive the knowledge with every generation.

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Appendix A

Main Building Door Handle

[A.1] Main building door handle

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[A.2] Main building door handle (close up)

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[A.3] Change room door handle

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[A.4] Change room door handle (close up)

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[A.5] Sauna building door handle

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[A.6] Sauna building door handle (close up)

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