

# **Design-Build As An Approach for Community-Focused Projects: Building and Adapting in a Northern Community**

by

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# Abstract

This thesis focuses on creating and testing a design-build strategy for community-based projects. It poses questions on how to create work that is locally relevant, place sensitive and site specific in the contexts of working 'for' and 'with' a community. As designers, we frequently make assumptions based on what we think community design should be. In developing a design-build strategy which responds to community needs, this thesis makes a claim for design-build. The strategy developed attempts to create a hybrid form in responds to a local material culture, the benefits of a local material palette, and community engagement in the design-build process. The production of two design-build projects located in Dawson City, Yukon Territory, provides an opportunity to examine the proposed strategic framework, its ability to integrate a sense of place, the design-build process, and the project outcomes.

# List of Abbreviations

TH - Tr'ondëk Hwëch'in

RSS - Robert Service School

RGWP - Riverside Gathering and Warming Pavilion

NWT - North West Territory

SEED - Social Economic Environmental Design

YT - Yukon Territory

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Thank you Tr'ondëk Hwëch'in for being so open-hearted over the years. The opportunities and experiences I have had while living in your community have played an important part in the journey I am taking. It is on your traditional territory that I have put theory into action through this thesis. Thank you also to the youth of Dawson City for continuing to inspire me and teach me the unexpected.

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Thank you to Robert Service School and the (s)Hiver Winter Arts Festival for their faith and support in my endeavours in the North, as well as their help in providing such a positive environment to design and build in. A special thanks to Peter Menzies for his kindness and trust, it was my pleasure to teach alongside Peter through this design-build.

A big thanks to all those who have supported me through the last number of years in academia. A special thanks to my parents, Sue and Brian, as well as my dear friends Erika and Nate—without them, the built portions of this thesis would not be what it is. Finally, thank you to my partner Holly for the endless support, without your invaluable editing skills this thesis would not present the way it does.

# Chapter 1: Introduction

## The Need for Change

Five years of living, working and creating in a small northern community in the Yukon Territory has fundamentally influenced this thesis. During this time, I have had the immense privilege of being a youth worker for the Tr'ondëk Hwëch'in, a First Nation based in Dawson City. In addition to this, I have taken on creative roles as a designer, coordinator, and artist. Working in an isolated town in the Canadian North has pushed me to pursue a practice that is community focused and based on facilitation. This experience has opened my eyes to the potential of a more community-focused approach in design, and has inspired my interest in the building cultures of more isolated regions. It has driven me to ask questions about the value of local knowledge and the importance of place-sensitive and site-specific design work. As both designer and community worker, I find myself looking beyond the academic institution to grapple with the changing world and industry around us. We live in an era of political upheaval, community polarization, climate change, and social uproar.

Inherent in addressing how we design and build comes a questioning of the power of the "things" we as designers make for the world. Jane Bennet references what she calls "thing-power" when speaking of the human-like power the non-human things in our world have. With thing-power, she recognizes that the objects and things around us are change agents and create effects seen and unseen (Bennet 2004, 348). Bennet recalls a moment where she notices a few trash items in

a storm drain: a glove, a dead rat and a bottle cap. On one hand these items are just trash and on the other hand 'things' which command attention. She references these things as "vital and alive in its own right, as an existent in excess of its reference to human flaws or projects." She further states, "the second kind of stuff has thing-power: it commands attention, exudes a kind of dignity, provokes poetry or inspires fear" (ibid, 350). Bennet looks beyond that singular existence to see the cause and effect of these "things" in the world around them, she asks where did they come from and where they are going? Recognizing that the things in the world around us have power in such a way firstly asserts that the non-human things around us will affect our lives, and secondly that the things we make and put into the world have the potential to beneficially or negatively affect our world.

Recognizing 'thing-power' and our role in making the things around us gives the designer and architect tremendous power and responsibility. In *Expanding Architecture, Design as Activism*, Bell and Wakeford start to recognize that change in the design industry is inevitable. They assert that non-human things are changing the way we design because the problems and people we design for have changed. The book addresses the shift from designing for wealthy clients to designing for the more significant issues our world is facing, and in turn designing for the more general public. Bell uses Roberta M. Feldman's definition of the activist practice to highlight the shift in this industry:

In *Good Deeds, Good Design: Community Service through architecture*, Roberta M Feldman defines activist practice as the act of architects

leaving the office, engaging a community, and seeking a need for design in that community, rather than passively waiting for clients to come to them. (Bell and Wakeford 2008, 15)

*Expanding Architecture* collects a series of essays and projects which address both the need for and the potential in the shift within the industry. This growing need to change has inspired the emergence of alternative approaches in activism, public-interest design, and grassroots movements that shift the ability to shape the built environment from the hands of the elite to the hands of the more general public. The community based nature of design-build and participatory design inspire the following question: What strategy can be developed for designers to use that elevates local knowledge and a sense of place?

Place is not easily defined. To quote Dolores Hayden, "place is one of the trickiest words in the English language, a suitcase so overfilled one can never shut the lid." (Hayden 1995, 14). Despite being from different disciplines, Lippard, Bourdieu and Hayden and Casey all take the view that place is inherently about people, their experiences and their relationship with that place.

Lippard, who comes from an art background, talks about a sense of place that comes from a deep familiarity and closeness.

Inherent in the local is the concept of place – a portion of land/town/cityscape seen from inside, the resonance of a specific location that is known and familiar. Most often place applies to our own "local" — entwined with personal memory, known or unknown histories, marks made in the land that provoke and evoke. (Lippard 1997, 7)

Lippard thus recognizes that the network of individual

and collective experiences are what evoke a sense of place in the "local". In *Habitus*, French sociologist Pierre Bourdieu discusses a similar sense of place. Editors Hillier and Roosby define Bourdieu's Habitus as "a sense of one's (and others') place and role in the world of one's lived environment" (Hillier and Roosby 2005, 21). What is significant about Bourdieu's habitus is that it points out not only one's own sense of place, but what contributes to a collective sense of place. That is, one's place and role in the world is in contrast to the place and others' experiences. Habitus recognizes that a sense of place is made up of multiple experiences.

Hayden and Casey's understanding of "place memory" helps to define this people-based understanding of what makes a sense of place. Philosopher Edward S. Casey formalizes "place-memory" as

...the stabilizing persistence of place as a container of experiences that contributes so powerfully to its intrinsic memorability. An alert and alive memory connects spontaneously with place, finding in it features that favor and parallel its own activities. (Casey 2000, 187)

Casey outlines the power of place through its connection with our experiences and how we remember them. Hayden, an expert in architecture and urbanism, further defines memory as "naturally place-oriented" because most memories are associated with a specific location (Hayden 1995, 46). Casey makes clear that there is a difference between site, place, and site-specific. According to Casey, "a site is not a container but an open area that is specified primarily by means of cartographic representations such as maps or architects' plans" (Casey 2000, 186).



To Casey a site is data and location, and with Lippard, Hayden, and Bourdieu a sense of place is founded upon our human experience. To be site-specific is to respond to the conditions of a location, but to be sensitive to place is to tap into an individual or collective understanding or feeling of a location.

Thus, my understanding of place comes from human experience and how those experiences influence or shape the way people feel about a site or location. By working with this understanding of place and site, we can start to introduce a more place-based approach to working with communities. To create place-sensitive designs that respond to site conditions, a hybrid form of design-build and a more participatory approach emerges as a potentially effective strategy.

## **Design Build**

Design-build as a strategy for community-focused work is appealing because of its process of thinking through making, its historically social inclination, and the collaborative and participatory process fundamental to it.

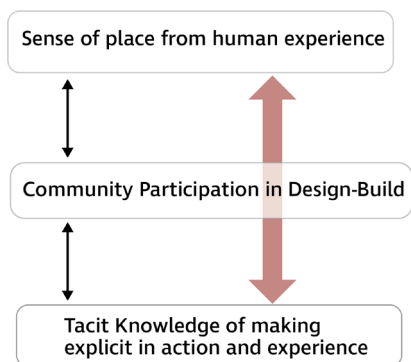
Inherent in design-build is the act of making, the goal to take an idea through conception and into reality while learning along the way. Philosopher Michael Polanyi claims that we are unable to explain all that we know through the act of telling and this is known as "tacit knowledge" (Polanyi 1966, 4). Tim Ingold's *Making: Anthropology, Archaeology, Art and Architecture* argues that a similar knowledge is implicit within the tacit dimension of making; he explores the idea that the role of the theorist (the thinker) and craftspersons

(the maker) are not as separate as they seem

What then is the relation between thinking and making? To this, the theorist and the craftsman would give different answers. It is not that the former only thinks and the latter only makes, but that the one makes through thinking and the other thinks through making. (Ingold 2013, 6)

The argument can be made that when we are making and creating things we are accessing a tacit knowledge embedded in action. The design-build participant is not only learning but integrating their tacit knowledge into their actions. Similarly, Howard Davis outlines his understanding of a fundamental characteristic of craftsmanship as the intimate relationship between thought (design) and action (building) in which they do not represent separate phases (Davis 2006, 246). This understanding of craftsmanship further reveals the proximity between thought and action in the making of things. Tim Ingold also explored Polanyi's tacit dimension within the actions of craft:

Those ways of knowing and doing that grow through experience and practice of craft, but which adhere so closely to the person of that practitioner as to remain out of reach of explanation or analysis (Ingold 2013, 109)



Hypothesis: Design-build is well suited for community focused projects because it can harness and embed a community's sense of place in a design through participation and tacit knowledge.

In this vein, the tacit knowledge of making is fundamentally experience-based in a similar way to Lippard, Hayden, and Casey's sense of place through experience. In this sense, a design-build framework can elevate the tacit knowledge of a place and building culture of a community through a participatory process. Can a sense of place embody a design-build through the participation of local community members in the same way that tacit knowledge represents craft through action?

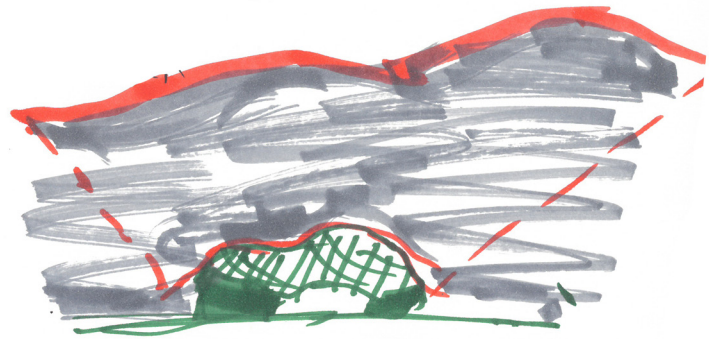
Design-build, much like movements of participatory design and public interest design, centre the human user or the human participant within the process. While at first glance design-build methodologies may seem focused on the participant, at further investigation the roots of design-build movements were founded through social and community projects. There are two logics which attempt to pinpoint the origins of design-build in the architectural institution. The first of the two logics came from a rejection of class separations, while the second comes from the questioning of a singular creative vision within the design process (Goodman 2014, 503). Both logics were born from a historically community-focused practice. In 1959–1961 the University of Pennsylvania elevated a design-build practice based upon the idea of community. This practice emerged from an "urban condition characterized by joblessness, white-flight racial tensions, and degraded housing and infrastructure" (ibid, 506). This condition initiated landscape architecture professor Karl Linn to lead an intervention and collaboration in the Melon Block Project by designing and building a park. Linn saw their work with this project as "one of peacemaking in a neighbourhood in which place and community were systematically being destroyed through decay and urban renewal." (ibid, 507). He aimed to create a park with a sense of place and connection to community by salvaging materials from the old community. Their intent was to bring parts of the old community into the new development to uphold community identity and a sense of place (ibid, 507). In the case of the University of Pennsylvania and the Melon Block Project, the design-build methodology

of place making and using local culturally significant materials provided an element of participation that generated a sense of local leadership and ownership, helping to instill an experience-based sense of place in the new development.

Auburn University's Rural Studio was similarly created from a position of social responsibility. In the early 90s, Samuel "Sambo" Mockbee responded to issues of decline and neglect in Hale County, USA (ibid, 509). With the help of local social services, Rural Studio found low-income families, for whom they built one-of-a-kind custom homes. In "A History of Community Design/Build in the United States in Four Moments," Goodman details the origin stories of four architectural institutions renowned for their design-build studios. Although academic logic and philosophies are different, the logics draw back to a social underpinning and responsibility. The historically social inclination throughout many design-build projects demonstrates the appeal of design-build as a strategy for community-focused design work.

Many design-build projects created within institutions are reactive and site-specific. Even if a design is created in isolation, it is forced to react to a site when it comes to build conditions. Dalhousie University's free-lab structure and culture around design-build provide an opportunity to look deeper into the site-specific nature of design-build. A closer look at my personal experience as a masters student working on the Coastal Studios Highland Gridshell, facilitated by Dr. Ted Cavanagh, provides an opportunity to reflect on the site-specific

nature of the project. The Highlands Gridshell sits nestled at the base of a river valley in of Cape Breton, NS. While I was not involved in the design portion of this design-build project, it was evident from working on location that the site influenced the layout of this sizeable multi-year project. At first glance, the profile of the gridshell seems quite abstract, but it does not take long to see its form appear in the landscape. The profile of the structure mirrors that of the hill behind it, allowing the build, even though it is currently unfinished,



Sketch of how the Coastal Studio Highland Gridshell profile mirrors the hill it sits under.



Photo of Coastal Studio Highland Gridshell under construction in August of 2018

to sit comfortably in the scene.

Working on site in Cheticamp helped the summer student builders understand some of the local complications of construction in the area. Before arrival in Cheticamp, the students were told about local phenomena called *suettes*, a weather phenomenon where powerful winds blow across the plateau and whip through the region. Although we were well aware of the details of this environmental condition, it was impossible for us to grasp the real world consequences of this condition. On arrival, we saw a 25 x 25 foot wooden platform that had been lifted and moved about 20 feet. It wasn't until we were onsite that we recognized the implication of the wind on the structure and building conditions; for example, plywood storage was a concern. With physical understanding we were able to manage those conditions and work to adapt the project to its site-specific conditions.

Professor Rodger Mullin's project in Spencer's Island, NS, titled the Uncertain Centre of Mary Celeste exemplifies a student design-build that is site-specific and place-sensitive. Mullin summarizes this project as "a roadside infrastructure and contemporary community amenity that celebrates aspects of the historic ship-building period known as the 'age of sail'" (Mullin 2010, 67). The series of projects are located on an old ship-building site. Mullin pedagogically uses a site-specific approach where all design-build work is determined on site, factoring in available methods, skills, materials and budgets (ibid, 69). "The physical shape of the structures of the projects are analogous interpretations of the

space and dimension of the shipyard where the famed brigantine ship was built" (ibid, 68). Not only does the site and region inform methods and materials, but the form of the design is directly in conversation with students while designing and building.

## **Working With Communities**

### **Trust**

One of the important factors to working with rural communities is an element of trust. Without trust, the goals of community engagement and impact become less attainable. Would the level of community participation I was hoping for even possible without trust? My experience working in Dawson as a community worker for TH and as a substitute high school teacher gives me the background and embodied community knowledge that developed through years of experience. Despite leaving almost annually to attend school, I would return to engage with the community in similar contexts, building long-term relationships. Especially with the communities youth, this coming and going was initially met with raised eyebrows and questioning because of its similarity with transient workers who settle quickly, start to develop relationships and then leave. After returning multiple times and building longer-term relationships the youth, other youth workers and community partners began to trust my commitment to community benefit. This trust took time to build and highlights the need to develop good community partnerships and to understand community. The *Routledge International Handbook for Participatory Design* describes the important role of time in order to attain trust:

A basic element of this is seeing the other par-

ticipants as skilled practitioners in their professional context. Planning for a longer period of mutual learning and shared knowledge building as a multidisciplinary team normally provides the necessary basis for trusting the co-participants to have relevant opinions, even though they are different and based on a different logic (Simonsen and Robertson 2012, 132).

Simonsen and Robertson's understanding of the need for a long process of mutual learning and respect is significant because it highlights one avenue to start building trust.

My experience in Dawson City allowed me to build upon established relationships where I had already begun to work collaboratively with community partners. I was able to access past scenarios of mutual learning through shared experiences and quickly build trust for this design-build project.

## **Participation**

In a participatory approach to design, Christopher Alexander and colleagues begin to highlight the potential benefit of developing construction systems which reduce the gap between designer and builder through a participatory approach on their Mexicali housing project. The idea behind the project was to create a process where families were in a position to make their own decisions regarding their future homes based on their own experiences and realities (Davis 2006, 249). In this way, their personal experience, and in turn sense of place, was integrated into the building of their home: "The construction system was developed so that a building could be staked out on the ground during the course of design, based on visualization of rooms in their place at full scale, and built directly from those markings on





This housing project in Mexicali, carried out by Christopher Alexander and colleagues created an adaptable construction system that integrated the end user into the design process through building, allowing them to take control over the end result. (Living Neighborhoods)

the ground" (ibid, 250). Through the development of an adaptable construction strategy, Alexander effectively closes the gap between designer and builder while integrating the end user to allow them to take charge of the result.

In *Public Interest Design Practice Guidebook: SEED Methodology, Case Studies, and Critical Issues*, Abendroth and Bell posit that Social Economic Environmental Design (SEED) methodology reflects a growing shift in the definition of client as well as a new standard of public design practice. To create more innovative and effective designs, SEED methodology attempts to foster a vibrant and diverse discipline (Abendroth and Bell 2016, 92). Abendroth and Bell outline the first step of SEED methodology is engaging community participation: "An inclusive and transparent process is a critical element of public interest design. When supported and provided with the right set of engagement tools, communities can proactively contribute to a design process of participatory decision making to build consensus, establish priorities, and define goals" (ibid, 93). This step of SEED methodology underlines the importance of community participation. Through community participation, design-build can create outcomes which integrate a collective tacit knowledge on a place and provide valuable engagement tools that enable communities to contribute to their own built environment.

I therefore ask, Can working closely with communities with design-build tap into a broader understanding of local knowledge, ownership, and a sense of place to create a more loved and effective design? This thesis

aims to use a hybrid form of design-build and a more participatory approach to community-focused work to create place-sensitive designs that respond to site conditions and emerges as a potentially effective strategy.

## **Dawson City, Yukon**

### **Intent**

Dawson City is small scale town and with a population of 1,375. It has a diverse community profile with a flourishing self-governing first nation and arts scene, as well as a diverse economy made up of tourism, mining, and government.

My intent in setting this thesis in Dawson City, YT, initially came from a personal familiarity, investment, and closeness to the region which developed a strong sense of personal place. It seemed natural to begin to identify a site-specific and place-sensitive design-build strategy in an area with which I am familiar. Furthermore, Dawson is a relevant community for this proof of concept because of the frozen river which creates a community commons in the winter. This combination of personal investment, a strong sense of place, and opportunities on the frozen river make Dawson City an excellent community to prototype a place-sensitive design-build strategy.

After spending a few winters in Dawson City, I observed the potential for a community project on the frozen Yukon river, which flows by the town centre. In the winter, the frozen river becomes an extension of the active shoreline and creates a type of commons simi-

lar to grassroots movements such as 596 Acres in New York City. 596 Acres activates vacant city-owned lots to engage low-income communities and show them how to transform the space into common use spaces (Shareable 2017, 148). Unlike the city-owned lots of southern cities, the informal commons of the North's frozen rivers are seemingly under no one's jurisdiction. In the winter, the Yukon River transforms into a solid form of transportation between small sub-communities on west side of the river, a recreation space and, in some cases, a space for experimentation.

In years past the river simply freezes and a road is plowed by the Yukon government from ferry landing to ferry landing. In recent years, however, the river has frozen in unpredictable ways and is slowly making an official government bridge impossible (Canadian Press 2019). In the last two years local community members have taken to making their own crossings to get from the small sub-communities of Sunnydale and West Dawson to get to Dawson City proper (Samson 2018). While ingenious and functional, the homemade ice bridges are not monitored by experts and are used at your own



Dawson City sits at the confluence of the Yukon and Klondike Rivers. Most of its residence live the small town's core that sits in the river valley tucked under the Moose Hide slide (ancient landslide on left) and the mountain ridge running from the Midnight dome and the Klondike River (right).

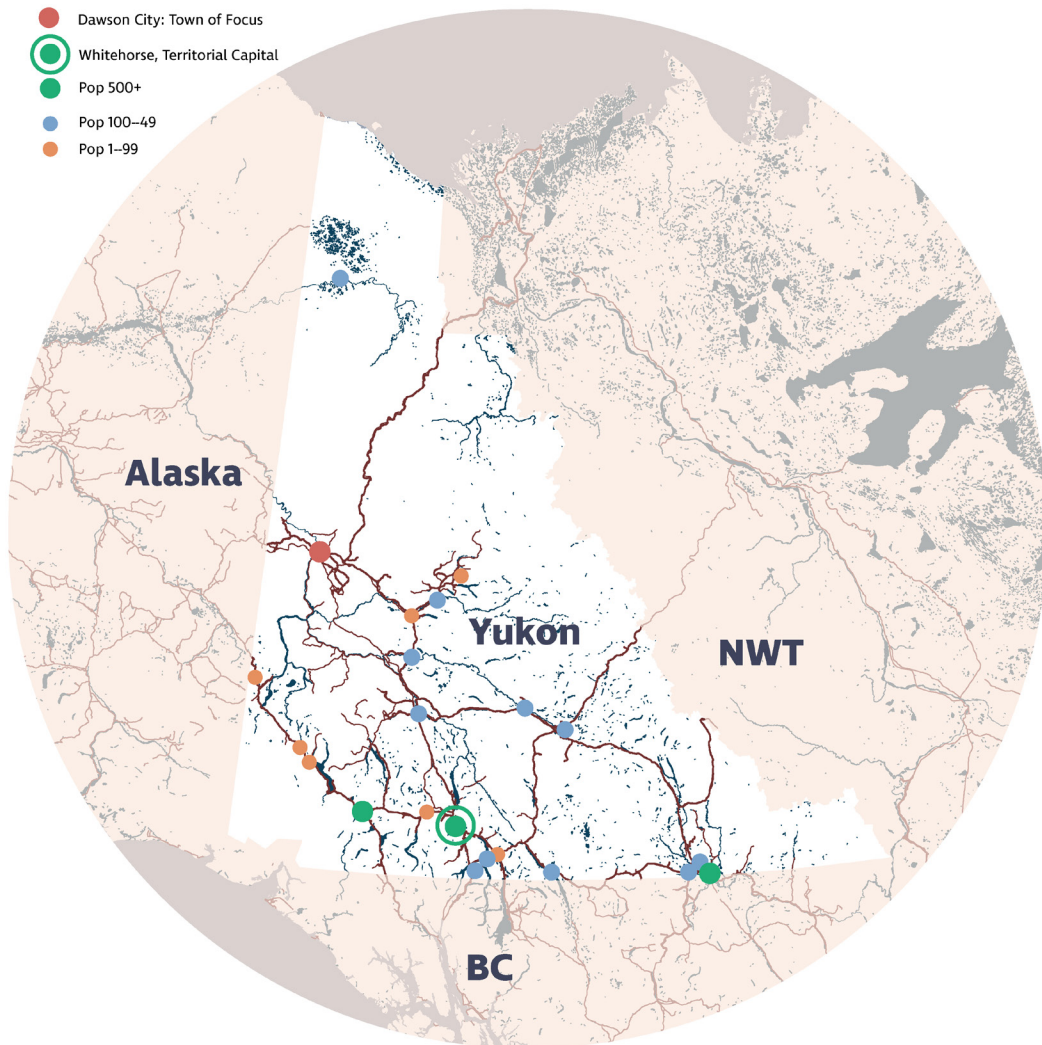
risk. It is common to see community members out skiing, walking, sledding and playing on the ice and shoreline of the frozen river. In building upon previous years' art installations on the ice, the *2019 (s)Hiver Winter Art Festival* made the river their main art venue, turning the space into a public art space. The unique use of the river as a public art commons provides space for programming and temporary design-build opportunities. The temporal nature of working on ice helps to keep design-builds at a manageable scope and builds upon an already used extension of the community's public space.



For many years a multitude of art installations have taken place on the river. The wide open spaces allow artists to experiment with large temporary art such as this ship made out of wood and fabric. (Ghost Ship 2017, by Cari Tangedal and James Bodie)

## Yukon Territory

The Yukon Territory is one of the three territories of northern Canada. The Yukon is known for its wild landscapes, gold rush history and self-governing first nations. The territory is a small network of isolated communities with a total population of 35,874 (Statistics Canada, 2016 Census of Population). The territory's vast land area of 474,391 square kilometres in comparison to its small population has made access to most of the territory difficult. The Yukon has seen extreme fluctuation in its population throughout its colonial history with a early high of 27,219 at the end of the Klondike gold rush, a low of 4,517 in 1921 and a slow growth until today. Despite the slow growth of the territory throughout the 20th century, the Yukon is currently one of the fastest growing areas of Canada (Geiger and Royal Canadian Geographical Society 2014, 272). Traditionally, the Yukon's economy has hinged on the exploration and extraction of minerals, and although the Klondike

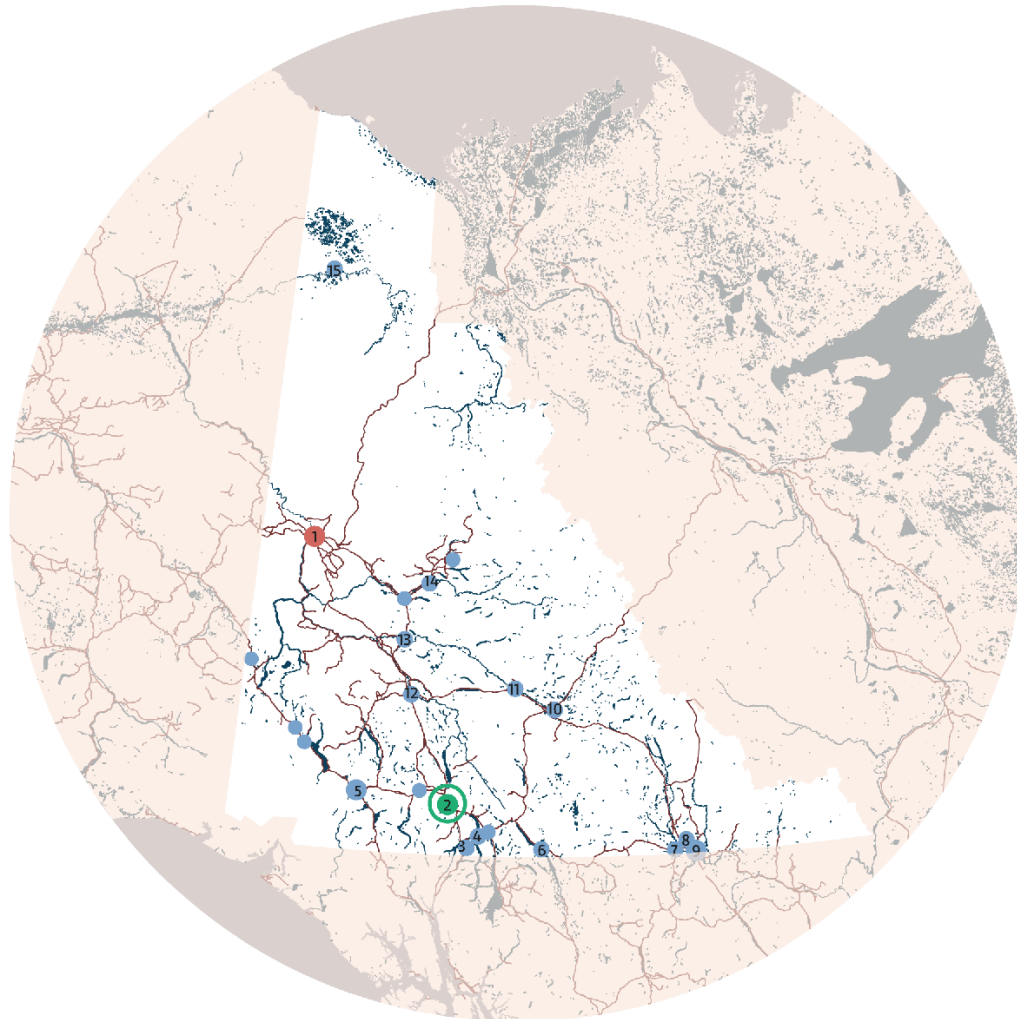


Territorial Scale map depicting town population and distribution of communities within the Territory. (Data from GeoYukon Accessed 2018)



### Driving time between rural community and Whitehorse

1. Dawson City ~ 6-7 H
2. Whitehorse (WH): N/E
3. Carcross ~1 H
4. Tagish ~ 1-1.5 H
5. Haines Junction ~ 1-1.5 H
6. Teslin ~ 2 H
7. Upper Liard ~ 5 H
8. Two Mile ~ 5 H
9. Watson Lake ~ 5 H
10. Ross River ~ 5.5 H
11. Faro ~ 4.5 H
12. Carmacks ~ 2 H
13. Pelly Crossing ~ 3.5 H
14. Mayo ~4.4 H
15. Old Crow ~ N/E



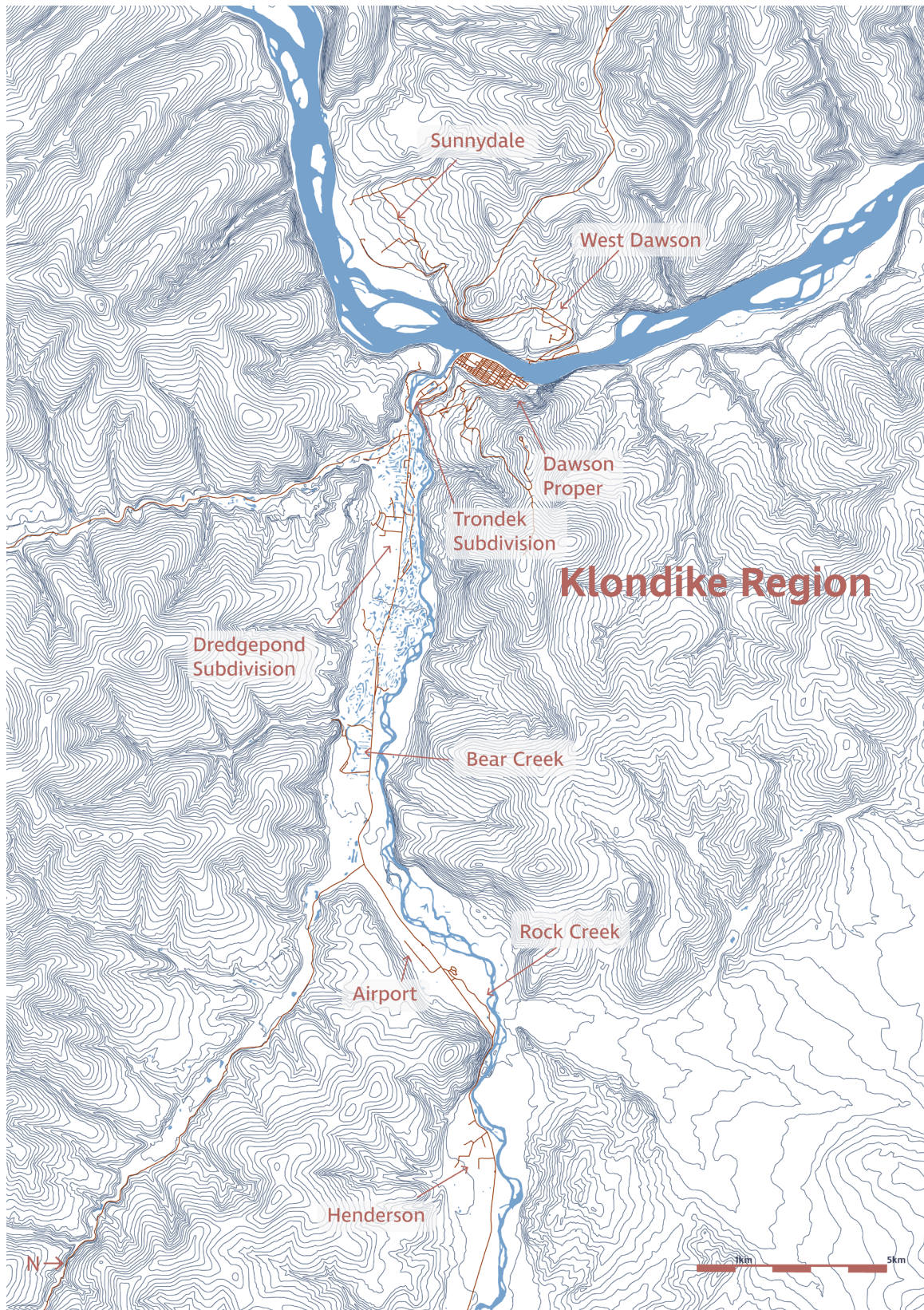
Because Whitehorse is the economic center of the territory and it houses most goods, isolation is often measured on how many hours drive you are from the territory capital. (Data from GeoYukon Accessed 2018)

Gold Rush was short lived, gold has continued to play a crucial role in the Yukon's economy with a GDP of 15% in 2014 (ibid, 272). The other key sectors of the economy are tourism, public administration (GDP 22%), real estate (18%) and construction (9%). Whitehorse is the capital of the Yukon and has 78% of the Yukon population. Most communities in the Yukon come through this hub along the Alaskan Highway, which was built during the second world war (ibid, 272).

### **Klondike Region and Dawson City**

The Dawson City region, also known as the Klondike region, is a six- to seven-hour drive north of Whitehorse on the Klondike Highway. It is the last Canadian community on the northernmost highway to Alaska, a highway that is only open in the summer months. There is one road north of Dawson City heading towards the Northwest Territories. Canadian communities north of Dawson City are only accessible by plane or ice road. Dawson City's interaction with the region occurs mostly along the Klondike Highway, or gold field roads, and on the Yukon and Klondike Rivers, which converge at Dawson City. Dawson City's population is distributed throughout a series of sub-communities along the Klondike river leading to the town centre and two small communities on the west side of the Yukon river. The region is located on the traditional territory of the Tr'ondëk Hwëch'in (TH). TH settled their land claim agreement in 1998, and is one of 11 self government first nations in the Yukon. TH's government buildings and housing are integrated within Dawson City but cultural and community sites are spread throughout a much wider region surrounding Dawson City.



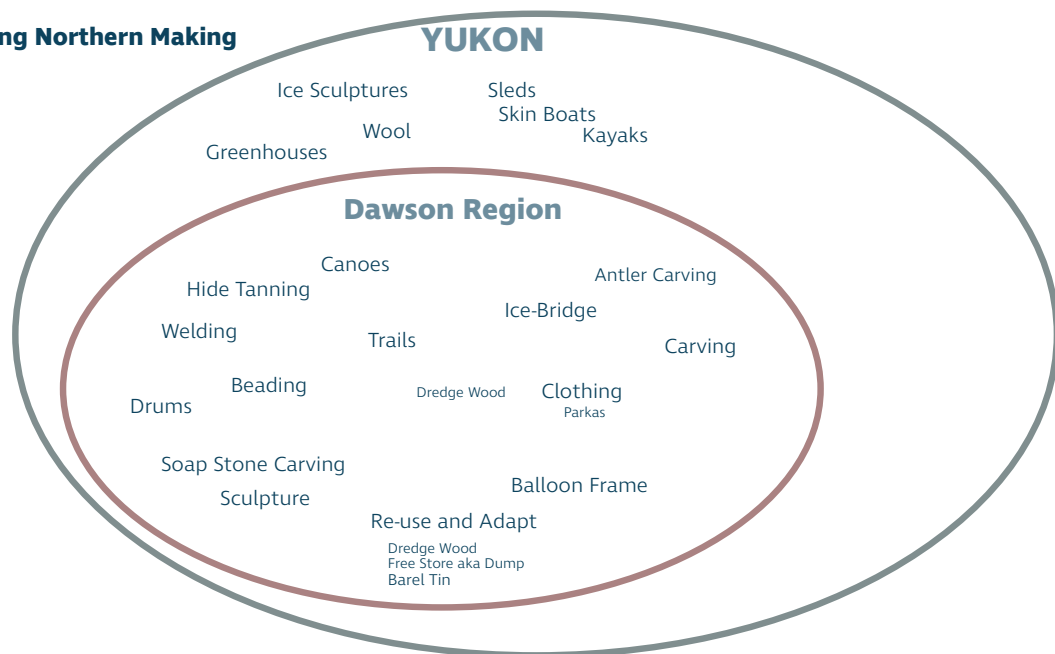


The Klondike region, home to Dawson City, YT and the historic Klondike Gold Rush. (Data from GeoYukon Accessed 2018)



The discovery of gold on Bonanza creek in 1896 followed by the Klondike Gold Rush created the then massive colonial settlement of Dawson City: "By 1897 it was the largest city west of Winnipeg, with a population of over 16,000, while a further 14,000 people lived along the Klondike." (ibid, 273). A gold rush that took place over only a few years has created ripples in the region that have lasted over a century and will continue to affect the region socially, geographically and economically. After the gold rush died down and many of the prospectors left in search of gold elsewhere, a series of larger scale mining operations were initiated, such as the Yukon Ditch and large scale dredges . A.N.C Tread-gold, with financial backing from the Guggenheim family, began the construction of a 112 km ditch to bring water at high pressure from the 12 mile ditch to

### Mapping Northern Making



In an effort to better understand the culture of making in the north this diagram attempts to map out forms of making within the region and Territory.



The Dawson City dump free store at the Quigly Landfill. A location where any trash with a potential second use is diverted from the landfill.

Bonanza creek. The high-pressure hydraulic operations sprayed the hills bare and opened access to deeper cuts of gold (Coates and Morrison 2005, 158-162). In 1910, Joe Boyle started construction on the world's largest gold dredge, which, through consolidation of companies, led to the long-running dredging of the region, leaving scars on the land that would never heal due to lack of nutrients in the soil after dredging. (ibid, 162-164).

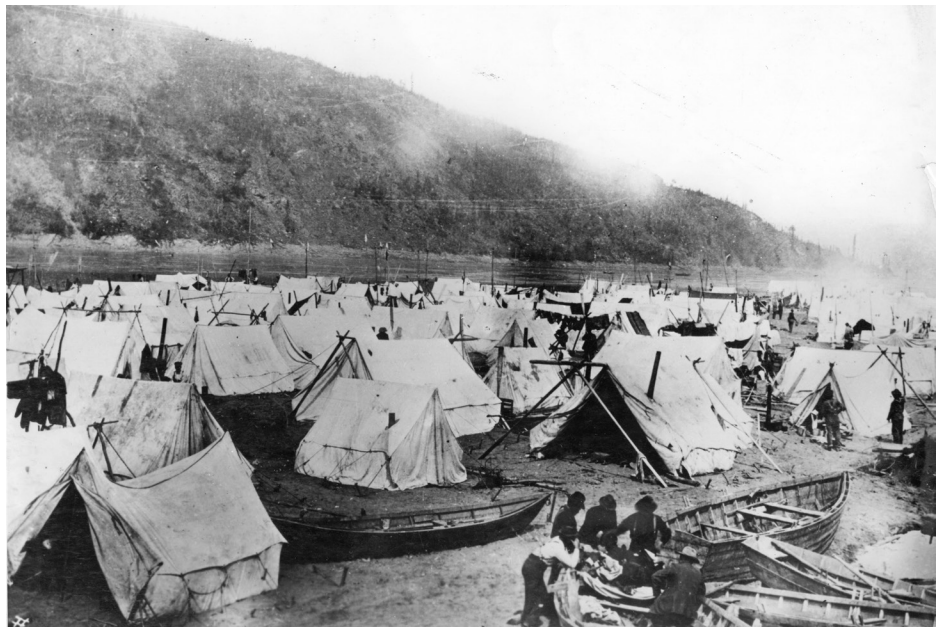
The building culture of the North is hinged on the isolation, social makeup and environmental conditions of the region. Acquiring materials has long been the driver for an alternative approach to material culture in the North. Even today with better delivery methods, material acquisition is still hard, impossible or expensive. This has led to a community building culture of re-use and creativity. At the local dump, a visitor will find what the community calls the "free store," a portion of the dump where anything that might still have a use is left to find a new home. In addition to the free store, locals are known to explore the construction pile

to find additional materials.

Before the gold rush, the indigenous groups of the area lived a semi-nomadic lifestyle based on subsistence, and as such their structures were made to be somewhat mobile. This mobility came from tensile structures



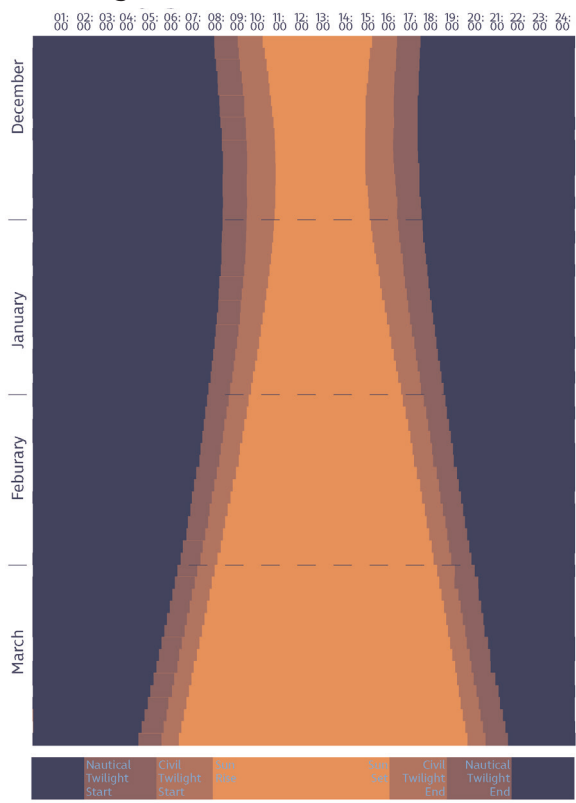
The indigenous groups of the Dawson City Region use hide to clad their camp structures. (Dawson City Museum, 1984.216.55)



The town was initially a city of canvas wall tents. (Dawson City Museum, 1962.6.4)

made of hide. Subsequently, with the discovery of gold just before the turn of the 20th century the region saw an extreme influx of people, all of whom were forced to come prepared and bring shelter with them. The lack of wood and extreme migration of gold seekers turned the area into a city of canvas wall tents. Given the lack of adequate housing, many transient summer workers continue to live in canvas wall tents today.

The environmental conditions of the region are seasonally dependant. The circumstances of facilitating a design-build project in January and February poses unique challenges and opportunity. The first challenge is the lack of sunlight; on the shortest day there is only 2.6 hours of twilight and 4.17 hours between sunrise and

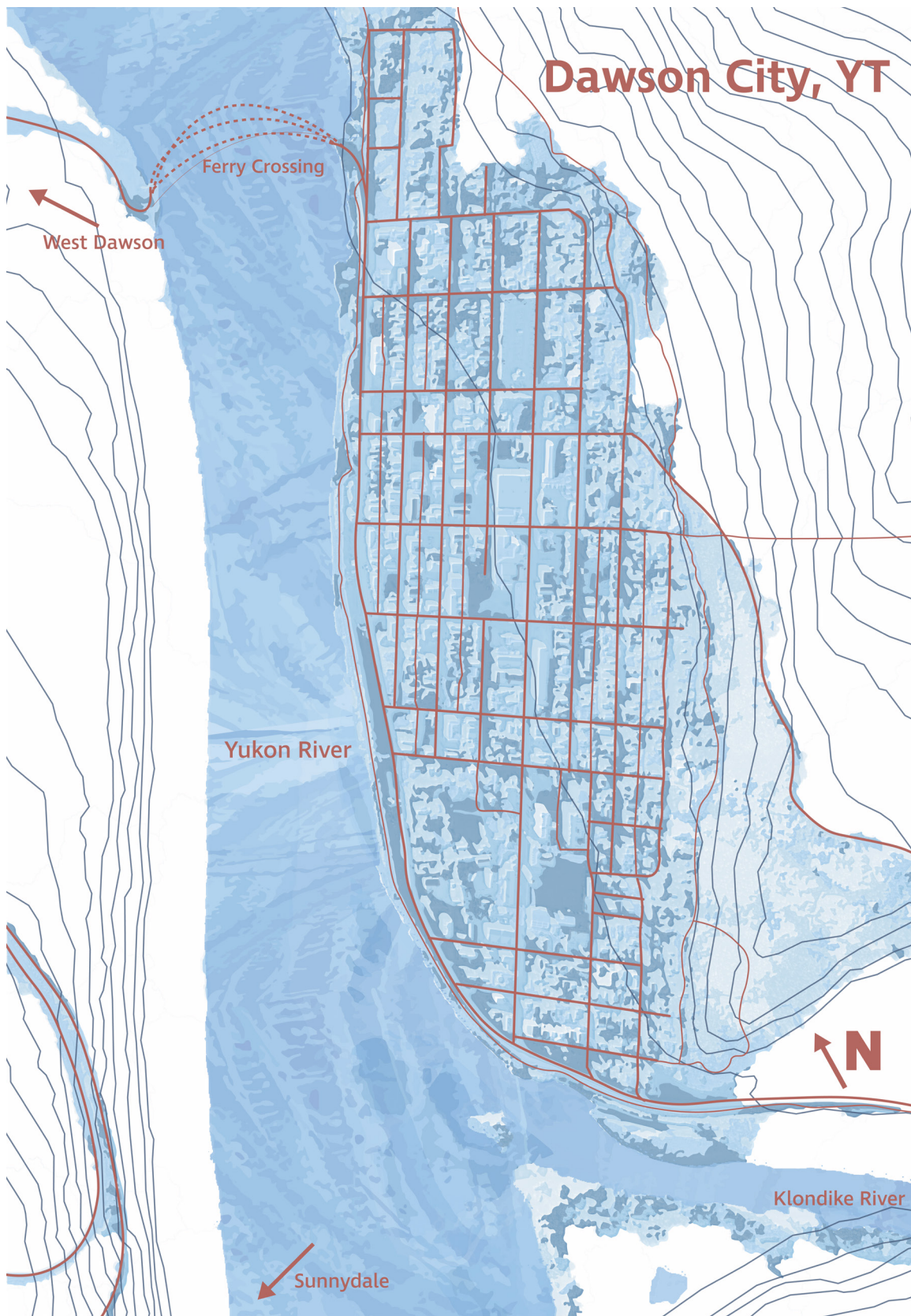


Dawson City Day Length Diagram for December 1, 2018 to March 31, 2019. At 64 degrees north the days are quite short during the first few months of the year but you can see how quickly light comes back to the community. (NRCAN, February 8, 2019.)

sunset (NRCAN, February 08, 2019). The town's location between surrounding mountains lends to what feels like a shorter day as the mountains cast a shadow on the town for some of those precious daylight hours. The second challenge to northern design-build at this time of year is related to the temperature. During the first month of my arrival the average temperature was  $-30^{\circ}\text{C}$  with extremes of  $-41^{\circ}\text{C}$  in the first week of the month.

All the particular aspects of this community creates a complex yet manageable scale of community to prototype a community focused design-build strategy.





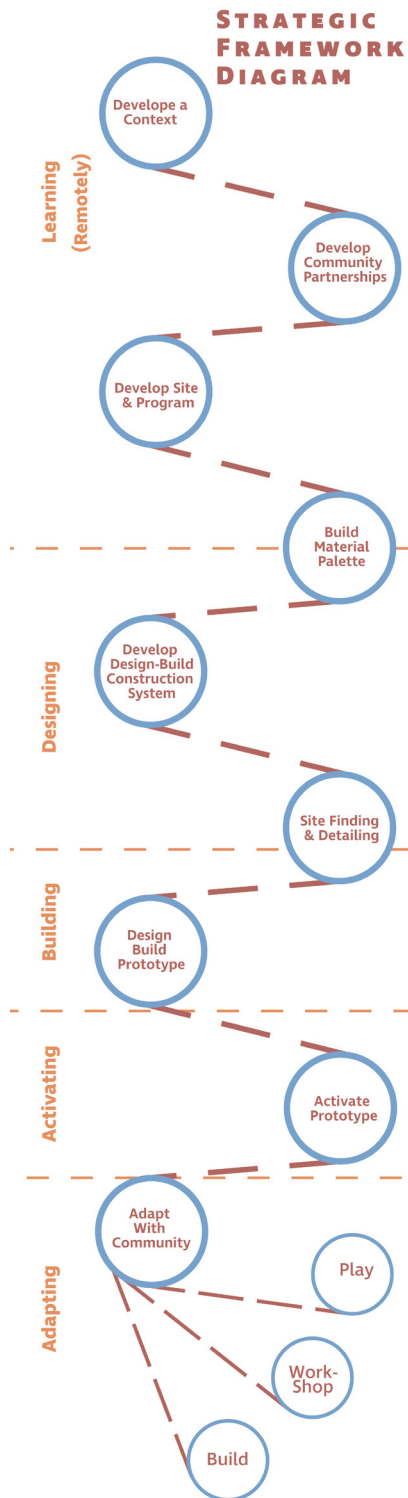
Map of Dawson City. (Data from Google Earth, Accessed October 2018)

## Strategic Framework

The following framework is influenced by design-build and participatory design methodologies and the idea that tacit knowledge of our experience helps to define a sense of place. This framework proposes a method for working with communities to produce site-specific and place-sensitive design-build projects in the public realm. In the framework, each step should be informed by the steps before.

1. Develop a context
2. Develop community partnerships
4. Develop site and program
5. Build a material palette
6. Develop design-build construction system
7. Site finding and detailing
8. Design and build prototype
9. Activate prototype
10. Adapt with the community.

Each step is informed by theory, community partners, a guiding principle or a case study.



Strategic Framework Diagram

## Chapter 2: Ideal Design-Build

### Community Partnerships

This design-build has two central community partnerships in Dawson City, one with the education system and one with the arts community. This project's education partner, Robert Service School (RSS), is a small school in Dawson City with students ranging from K–12. The school has an existing wood shop, metal shop and arts program in place. Educational partnerships are beneficial to a design-build project because they understand and appreciate the potential to learn in the design-build process. This partnership with RSS was further beneficial to me as it also provided access to an interior workshop, making manufacturing parts far easier with the cold temperatures of the time of year and region.

The *(s)Hiver Winter Arts festival* has taken place in Dawson City every January since 2015. This arts partnership was beneficial because it identifies a program and provided potential funding through artist stipends. The art festival's mandate this year was to turn the frozen Yukon River into a public art space, and they encouraged artists applying for installations to occupy the river in some way.

The design-build's participation in the art festival provided a hard deadline. The short time period required the build to be smaller in size and complexity and was thus more manageable. The temporary nature of an art festival helps to avoid scope creep as it gives a defined time frame and should limit expense because of the



short term of impact. Hailey defines the phenomena of scope creep as "the impulse to increase a project's size and the intricacies of its construction. By extension, increases in time, work, and expense result from the changes" (Hailey 2016, 28). Participants in design-build have the impulse to add complexity just like other approaches to design, the temporary and time constricted nature of building for an art festival keeps the project manageable.

In many ways, this intersection between education and arts created the optimal combination of partnership as they were able to collectively support and develop a program and break down barriers to provide more accessibility for the community.

## **Guiding Principles**

The guiding principles for this design-build framework and this design-build project series in the north are influenced by research and context, and are directed by the design-build framework. This framework, this construction strategy and these outcomes strive to be adaptable, accessible, communicative, site-specific, timely, and playful.

In order to be truly place-sensitive, the strategy has to be able to adapt to the site and location it is intended for. The solutions and strategies within this framework must not be so rigid that they do not have any malleability for community input.

The framework and construction strategy in particular has to be accessible. If the goal of the project is to integrate participation with community members, it is

important that the skill level needed is not too high or that the skills can be quickly and easily taught. In the case of the Dawson City design-build, my participants were high school youth. While most youth were workshop and tool friendly, it was important that youth who are not could participate as well. Design-build should be reactive; students need to be able to react to site, program, each other and the problems faced on a project (Hailey 2016, 18). If the contents of the build is too difficult, how are the participants supposed to react as needed? The process is as much about creating an avenue for communication as facilitating an end product.

While the overall goal is to work with communities to invite more place-sensitive outcomes, it is also important to identify environmental conditions and create site-specific work. As previously discussed, site specificity is not interchangeable with place-sensitivity, but site-specific work still contributes to a better understanding of place, depending on how people experience that site.

The project, although easy to expand into larger and more complex projects, should remain of a manageable scope so as to be able to complete the project. In order to successfully achieve community engagement, the framework will attempt to keep the project timely and avoid scope creep.

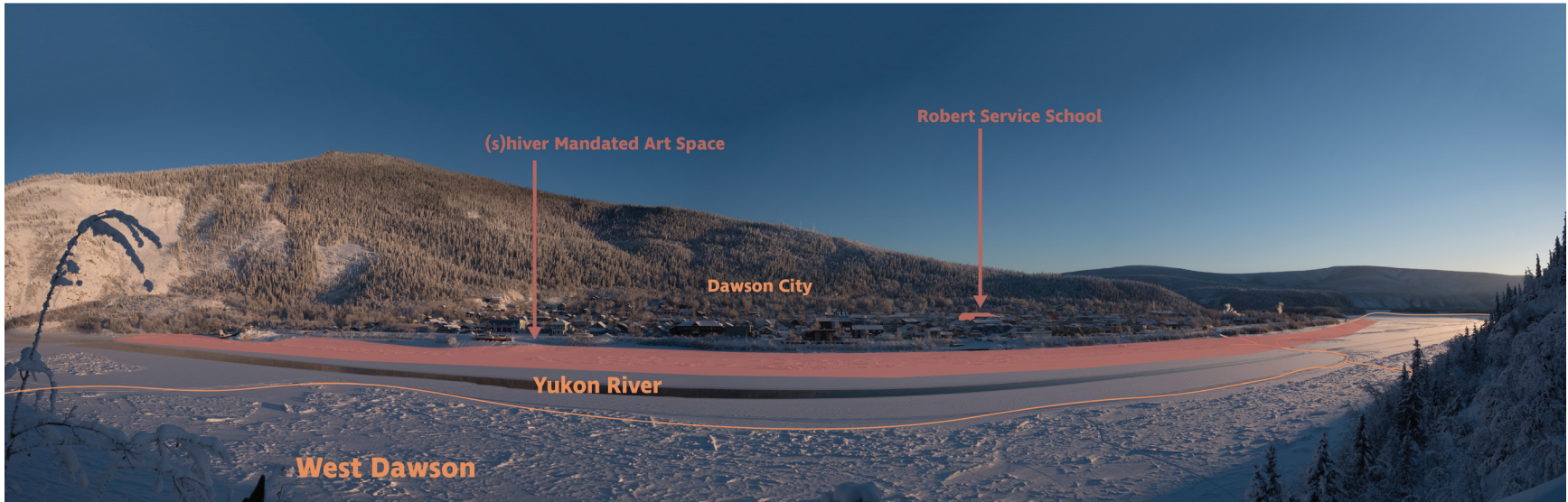
The last, and potentially most important, guiding principle for this framework is that of playfulness. In my experience, particularly working in northern communities, it has been important to keep the process fun. The community focus of the project is motivating, but a

level of playfulness and fun helps keep people engaged. Nils Gore explores the idea of serious play and its benefits. He identifies two types of play: telic play (play with a goal or purpose, such as a game) and paratelic play (play without a goal, such as dancing without choreography to music). Telic play helps to attain purpose and accomplish goals while paratelic mode of play allows one to explore with psychological safety (Gore 2004, 42). Play in the second sense of exploration in safety was particularly appealing to this project, as Peter Menzies (RSS shop teacher) had informed me of recent issues regarding student fear of failure. According to the teacher, the current group of youth in the shop lose all motivation when confronted with failure. Gore suggests that telic and paratelic modes of play are not oppositional and that they can be two cycles in one process (Gore 2004, 42). As such, someone orbit between accomplishing a goal playfully for motivation and exploring playfully without consequence. In response to working with youth struggling with overcoming failure, this framework will attempt to integrate a sense of playfulness to embrace exploration and competition which is less stressful.

## **Program + Site Development**

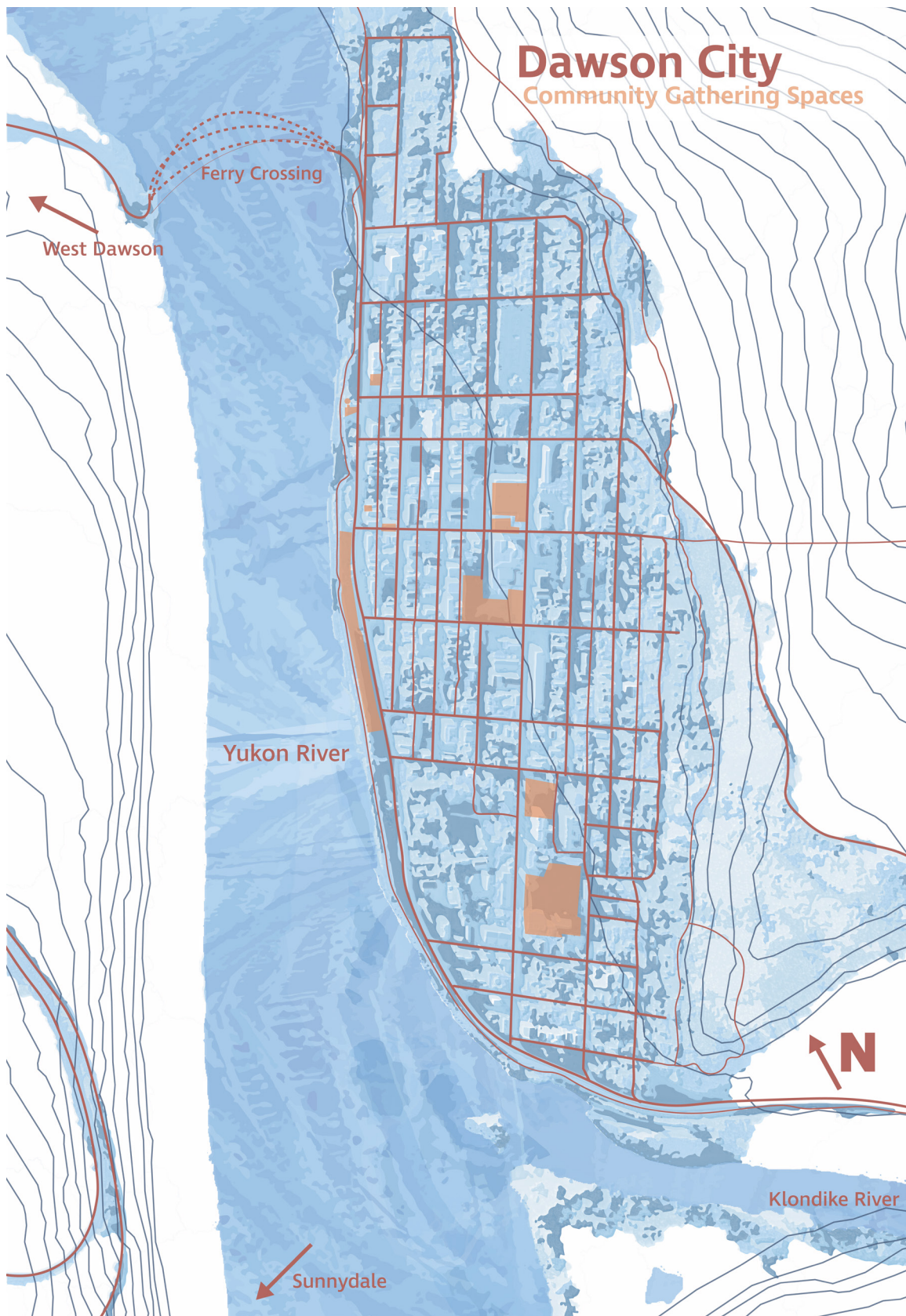
The mandate of the art festival was to occupy space on the river throughout the weekend to create a public art forum. This design-build takes advantage of the people already out on the river by offering a gathering space where people can come together, warm up and have a snack. The arts festival did not dictate the location of the site beyond having to engage with the river to some extent. It was important to take into account

community access, location in relationship to the other installations and the level of ice-related risk. To develop a program for a gathering structure on the river, I examined the community's gathering agents.



(s)Hiver winter arts festival mandated art program space and proximity to RSS.





Map of community gathering spaces to begin to understand how people gather in Dawson City. (Data from Google Earth, Accessed October 2018)





Community Gathering Agents Diagram.

The initial inspiration to have a gathering space on the river comes in part from the river's ability to gather people informally around activity—for example, isolating factors for the people living on the west side of the river or moments of excitement such as the forming of an ice bridge. The river's ability to function as a public commons drew me to build on the Yukon river; however, it was looking more closely at how people gather within the community that helped me to form a better program. By looking at gathering spaces in the community, I identify a series of gathering categories: event, fire and food. Unsurprisingly, the community gathers around events such as, arts, sports and festivals throughout the year. In the colder months people gather indoors and around fire where there is warmth. The community, especially the indigenous community, gathers around food and feasts. TH often puts on feasts for the community at their government hall. The design will therefore attempt to take advantage of these three gathering categories to use warmth, a event and food to bring people together. In order to draw visitors to the installation it is plainly titled the Riverside Gathering and Warming Pavilion.

## **Building a Regional Material Palette**

The building of a regional material palette comes from the idea of the building store palette introduced by Professor Carmen Corneil in "the Building Store: Direct Modelling as a Studio Process." Corneil builds a limited selection of materials and scales them down, making it easier for non-designers to understand the scope and capabilities of the materials in use. The article details a series of design studios where limitation facilitates

design through “offered media with which to compose built form and space by directly modelling it” (Corniel 1987, 46). Integrating an element of limitation is beneficial as a youth or community member who is given too many options does not know where to start and may be discouraged. Corneil agrees that one benefit to a scaled material palette is that it provides new designers with a tool to confront an array of decisions (Corniel 1987, 48). Corneil draws a parallel to children's play where a children's toy box creates a type of building store capable of creating a miniature version of the world. Thus, the building store palette's limitation and ability to help with decisions focus on more regional materials and the potential to integrate processes. Building a regional palette adapts this idea of the building store palette to draw from a locale rather than merely a selection of materials, to make the method more place-sensitive. Acting like a survey of local materials the regional material palette enables the choice of a project palette, a curated version that can be specific and seasonal, allows the community partners to influence what is used, and the designer to integrate new and novel ideas.

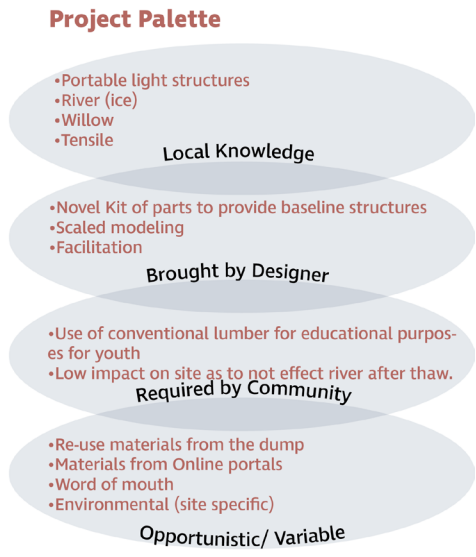
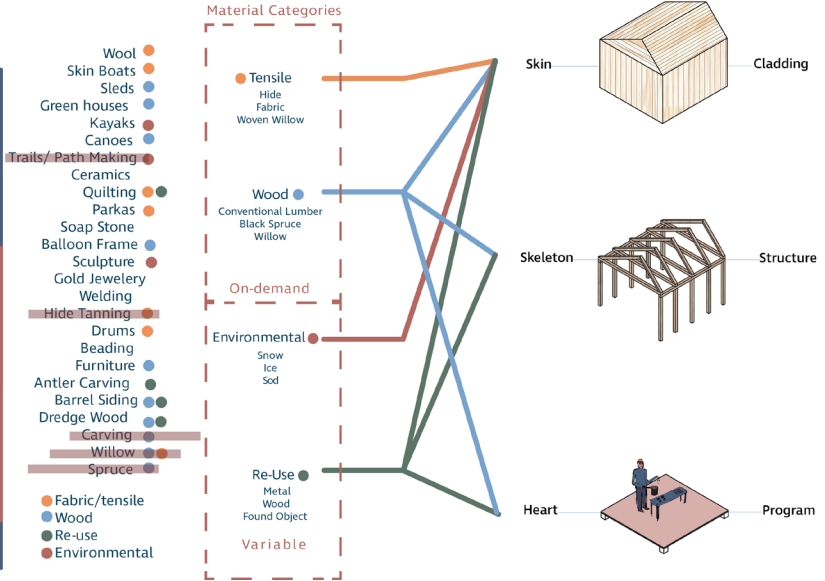
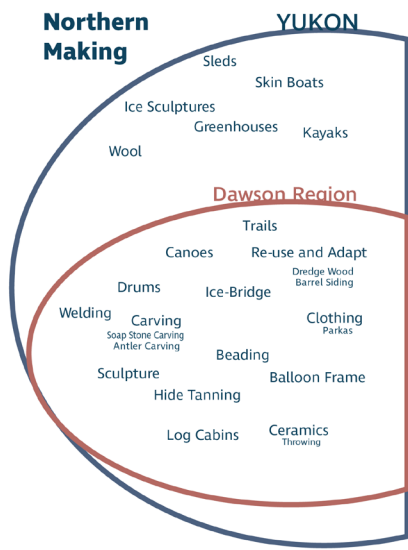
## **Dawson City Site-Specific Strategy**

### **Dawson City Design-Build Material Palette**

Building the regional material palette for the Dawson City design-build began as an exploration of northern making, a collection of processes, approaches and materials that were observed as happening either in the territory or in the region. These processes and materials were not necessarily traditionally local but still a part of local building culture today. This exploration of northern making drew out two material types and

a series of material categories. The two types include on-demand materials and variable materials. The material categories include tensile, wood, environmental and reused materials. Dawson City's history of temporary and semi-mobile structures led to a long-lasting culture of light frame, tensile clad structures. Additionally, winter culture in the north entails a making culture of sewing clothing to stay warm. The wood category comes from both the inevitable use of conventional lumber in the community but also from log building. Environmental materials weave their way into regional building culture through sod roofs, through art pieces which use snow and ice to create art installations, and through the local ingenuity used to build ice bridges for transportation. The last material category, re-use, has long been a part of the local community because of its isolation. While northerners have always managed to get materials and objects to the north, historically they did not often leave the region and materials from the south would often take long periods of time to acquire. This gave rise to a culture of using what you had, from reusing metal barrels as siding, to sifting through the free store at the local dump to find objects for your projects, to collecting wood from the construction pile to build your woodshed.

On further examination of these categories and in an attempt to identify what they could be best suited for in a temporary design-build, I identified three project elements: the skin (cladding), the skeleton (structure), and the heart (program). The skin is inspired by materials of the region that are used to enclose and shelter our homes and bodies; the skeleton element is inspired



Building a palette digram which follows the process of researching northing making, the formation of material categories, project parts and elements of a project specific palette.

by the strength of local materials, primarily wood frame structures; and the heart represents the activity or the program that the skin and the skeleton are enclosing.

The project palette curates the regional material palette into a specific selection of what the project will draw from. It is made up of four elements: local knowledge, processes brought by the designer, conditions required by community partnerships, and opportunistic/variable elements. This project draws upon the community's knowledge of light portable structures, which are clad with tensile materials, as well as their collective knowledge in regards to responding to the environmental conditions of the frozen river. My addition to this palette is a kit of parts that responds to the goal of adaptability and brings an element of novelty to engage the community in new conversations. RSS required conventional lumber for educational purposes, and (s)Hiver required me to leave as little trace on the build site as possible so it would not impact the river after it melted. The final element of the project palette was to embrace the reactive nature of design-build and to work with materials that could be re-used and were sourced from unknown opportunities via the free store or through community avenues.

One of the complications in this material palette was that it was generated remotely. The short nature of a design-build project within a one-year masters meant that this could not happen more collaboratively with the community. In an ideal scenario, I believe this material palette could have been generated with the community to not only incorporate my experience in



Dawson City but to tap into the collective knowledge of the community. Through partnership and direction, the community still had influence over the palette and were not completely unrepresented, but before leaving for the build portion of the project the palette relied heavily on my knowledge and on the opportunistic nature of re-using materials to give the palette a sense of place.

### **Kit of Parts**

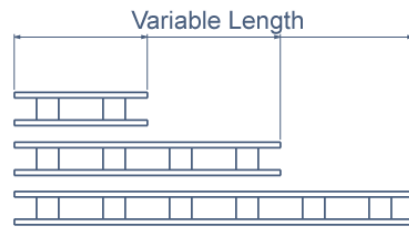
This kit of parts was developed as a tool to respond to the principles of adaptability, accessibility, and locality. The kit needed to allow a sense of play and exploration in the design phase, but it also needed to provide an opportunity for education and conversation with non-builders throughout the manufacturing phase. The kit of parts acts as the skeleton for the structure, a tool for teaching and participation, and a trigger for community engagement.

In order to create a sense of play in the design phases of this strategy, the kit of parts needed to be adaptable to a range of different forms. Because this strategy is targeted at working closely with the community, the form has to be adaptive enough to accommodate room for exploration and change according to what the community wants. The kit of parts creates a skeleton structure as opposed to a module that includes the cladding. This separation of elements is inspired by the regional tradition of light portable structures which separate skin and skeleton. The curved form encourages designers to create space that enables a circular gathering, which is often seen in activities such as meeting around a table or a campfire.

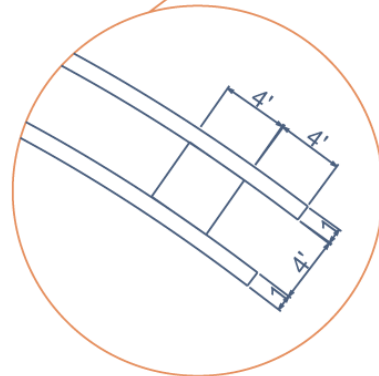
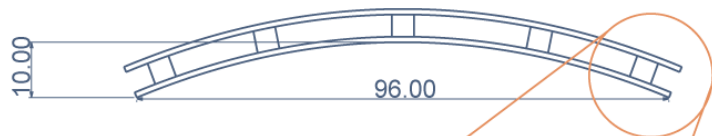
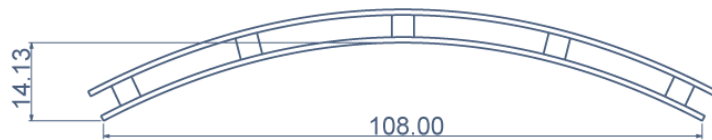
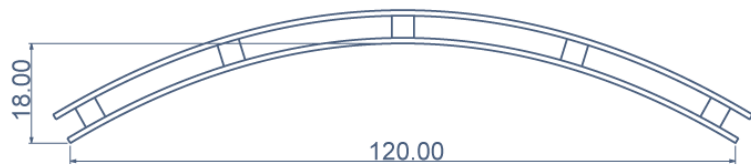
Since the first stage of the project takes place on the ever-changing Yukon River, both the form and the program of the structure needed to be able to adapt. The combination of pre-determined curved beams and variable straight beams ensured adaptability. Both types of beams were made out of 1 x 4 rough cut spruce with 4 x 4 inch rough cut spruce as blocking. Originally, all lengths of curved beam had a rise of 18 inches, but the final curves were an 8 foot length with 10 inch rise, a 9 foot length with a 14 inch rise, and a 10 foot length with an 18 inch rise.

The use of conventional rough-cut lumber enabled identical dimensioning of the blocks and beam widths on both the straight and the curved beams create an experience much like playing with Lego and provided some limitation in form without constricting it too much. The beams were constructed out of spruce lumber because it is available on demand from a local mill. Thus, I could count on the construction of the kit of parts at any time of year. The use of local lumber meant that the students were working with material that was available to them after the design-build. I introduced a new method for using the material, but their elevated understanding of the material was still valuable beyond this project as the material was locally sourced and they could use it again.

## Straight Variable Beams



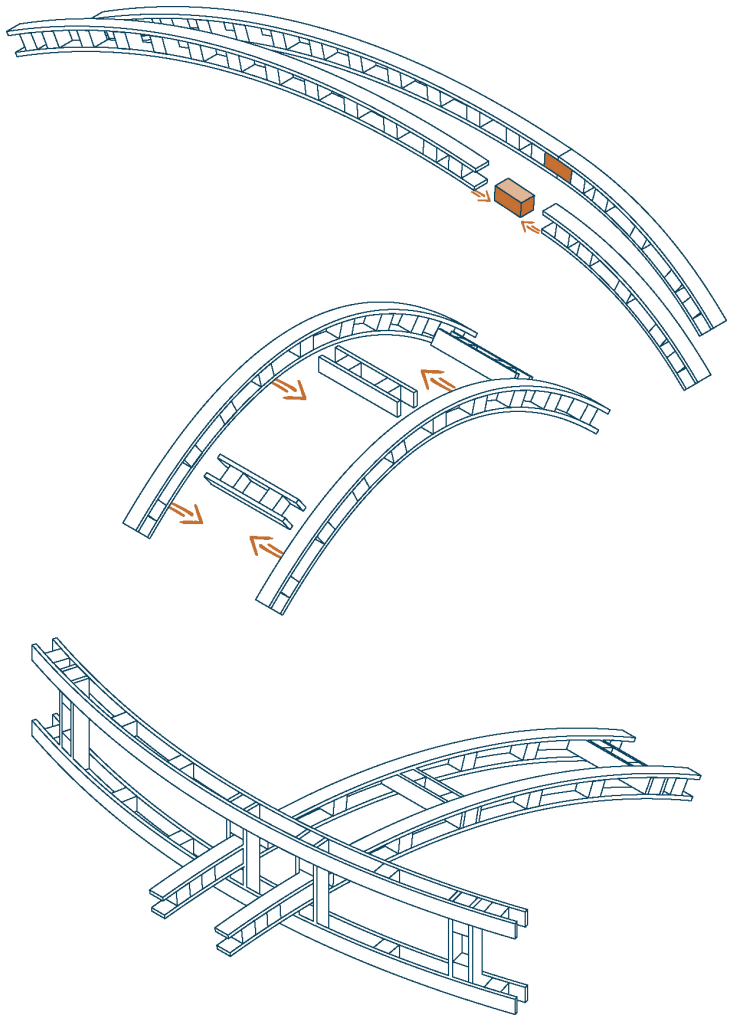
## Curved Beams



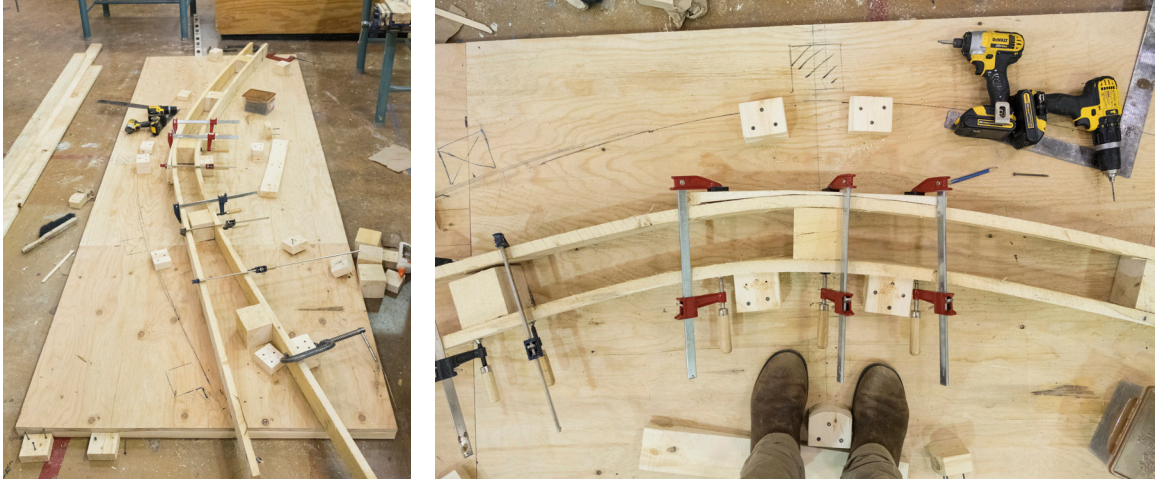
Kit of Parts: predetermined curved beams at 8 foot, 9 foot and 10 foot lengths. Straight variable lengths.



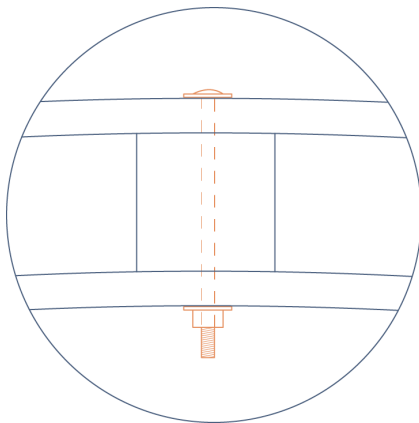
Scale Kit of parts



The benefit to the kit of parts rough cut dimensions is that they can come together in a variety of ways.



Curve beam being built using a 4 by 11 plywood platform jig in the RSS wood shop.



Technical drawing of a carriage bolt in a curved beam.

The curved beam was constructed by using a large jig and following the below steps.

- 1- Thaw the 1 x 4 inch beams
- 2- Bend the first 1" x 4" into place on the jig and secure with a series of clamps for safety.
- 3- Glue and screw 4 inch cubes (blocking) at even intervals along the curve, with one block in the center, one block 4 inches from each end point, and a block between the center block and each end.
- 4- Bend and place the second 1" x 4" into place using clamps. The location of the second 1" x 4" is not important as the ends will be trimmed so that the run of each curve is either 8, 9 or 10 feet.
- 5- Screw and glue the second 1" x 4" to the blocking.
- 6- Remove from jig and let glue dry.
- 7- If any force is applied onto a curve in a downward fashion, add a carriage bolt to strengthen.

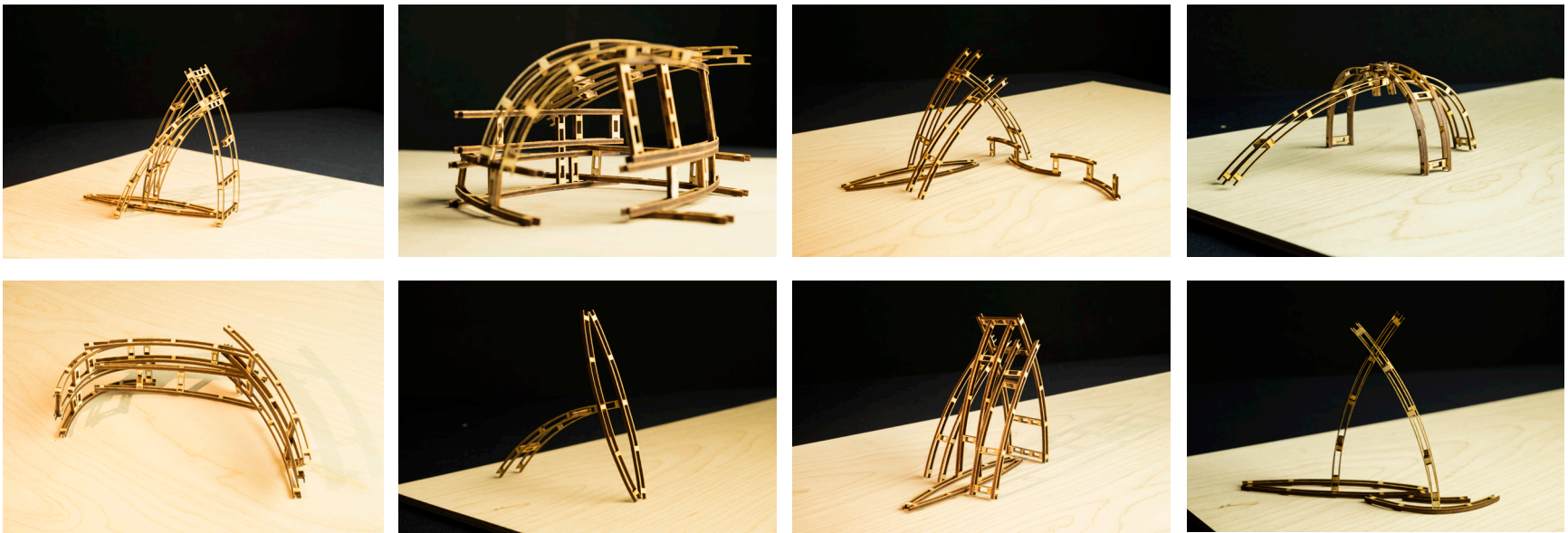
Whatever form the kit of parts took needed to be accessible to a range of different users, from random public on the river to youth with and without built experience. The building of the kit of parts needed to be accessible enough that youth could participate in the construction of the pieces as a way to break the ice, learn skills, and—most importantly—to have conversations while developing relationships quickly through action. While the form of the curved beams is different from the local style of building, the manufacturing occupies space in an attention-grabbing way and the learning curve is shallow.

### **Exploring Potentials in Plan, Section and Model**

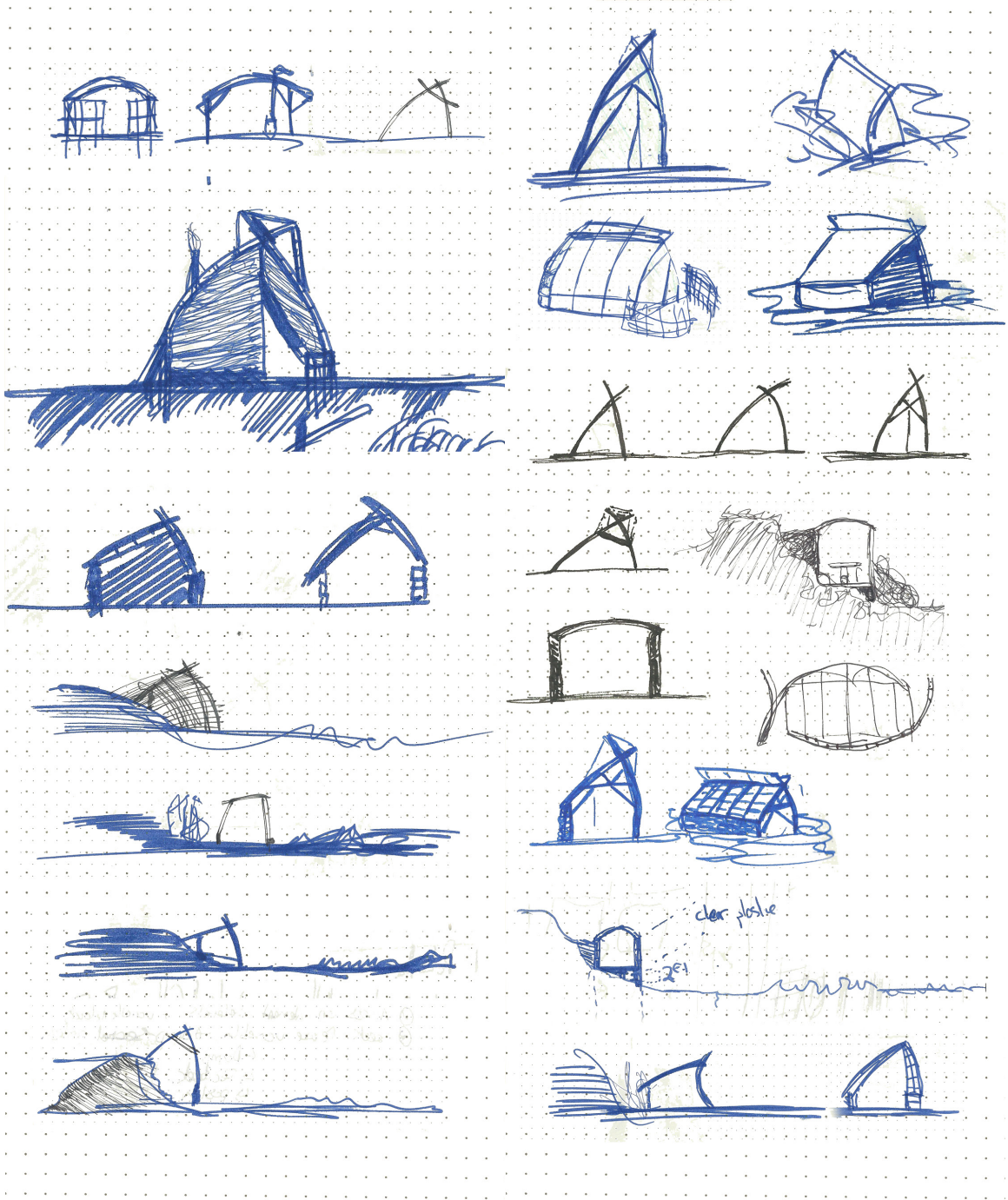
During the design of the kit of parts, a group of Dalhousie architecture students were asked to test the scaled model pieces and draw a sketch of their model in plan and section. The following images document some of my own exploration as well as the explorations of the students.

The initial sketches and sketch models focused on the skeleton portion of the construction strategy. The sketch designs were created with the gathering categories in mind: fire, event and food. There was only 17 days between my arrival in Dawson City and the first evening of the festival, thus the intention of these initial designs was to create a space which was quick and easy to build. These explorations detailed two design types: one was more influenced by a lean-to style structure and the other was made up of walls and roof as separate elements.

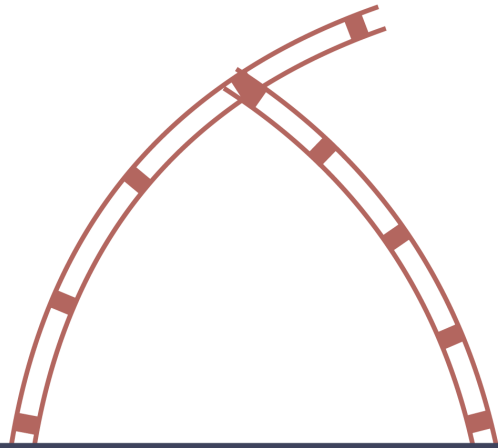




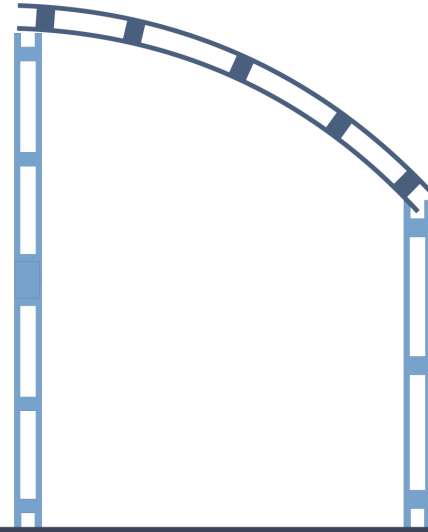
Exploring potentials of the kit of parts through scale modeling at 1:32



Exploring potentials of the kit of parts through sketching in plan and section.



Lean-to Style Explorations



Seperate Wall and Roof Style Explorations



Initial building Types revealed from the exploration of the kit of parts.

## Chapter 3: Design-Build

### Site Finding

After arriving in Dawson City, finding a site was one of the first tasks. Finding a site in January is logistically challenging because of the extreme cold. The temperatures for the first week were below -40. Beyond the arts festival's directive to engage with the frozen river as much as possible, there were no constraints provided. One of my main concerns regarding site finding was risk assessment as I would be working on and beside the river and the site was meant to attract community engagement. Site finding allowed engagement with the river in a way that I had not before. Transportation on the river in winter is quite diverse; the river becomes a highway of sorts as people live on both sides of the river and up and down river from the community's center. Forms of transportation ranges, including walking, skiing, sledding, snow machining, and when possible, cars and trucks. The cold temperatures and the snow level in early January meant that skiing was a great method for site finding as it was a good speed to cover ground and notice detail. I initially identified potential sites based on key elements of interest, such as trees, infrastructure, community uses and historically relevant locations. Then, based on their qualities and a preliminary risk assessment, I would decide on a final site.



Risk Assessment, Cutting ice with a chainsaw to assess thickness and water depth under the ice.



Site finding on skis.





View of Dawson City and the path taken during site finding. Photo taken from west side of the river.





Site finding map detailing locations of potential sites for riverside gathering and warming pavilion. (Data from Google Earth, Accessed October 2018)





### 1. The Big Spruce Tree Site

The big spruce tree site's appeal focused on the central large spruce trees. Spruce trees in this area take a long time to grow to such sizes. This site is located near sites of historical significance such as Moosehide Slide, Father Judge's grave-site and the old location of St. Mary's hospice. Perched above the Yukon River, the site proved a beautiful vantage point looking both up and down stream. The risks and disadvantages of this site were the lack of security of the cliff edge in the winter and the risk of falling while working or using the space.



### 2. Stand of Trees site

The stand of trees site was appealing in a similar manner to the Big Spruce Site, as it has a stand of trees

sitting directly on the bank of the river. The trees could play a role in the structure itself. When assessing risk, tree roots would help to ensure ground stability and the low level of the bank reduced the risk of falling. On assessment of the surrounding area, a lot of government activity occurs in this region of the shoreline due to the Yukon government's attempts to make an ice bridge by the ferry landing. Later in the season, on January 22, a snow CAT fell through near this section on the river while trying to construct an ice bridge (Kenny 2019).



### 3. Ferry Landing Site

The ferry landing site is very close to community activity and buildings. It has nearby car access, which is beneficial in the building phase and for accessibility during the utilization phase. While risks regarding ice safety and transportation were low in this area, jurisdiction was questionable because of the ferry docking equipment under the snow.



#### 4. The Klondike Spirit Site

The Klondike Spirit site is located where the Klondike Spirit docks. The Klondike Spirit is a side wheeler steamship look-a-like. The boat's size led to the construction of a metal barrier and large dock system that is removed during the winter. The steel wall element could provide additional support for the design-build. The risk at this site, however, was the snow pile which, if it continued to grow as a snow dumping site, would be potentially dangerous and unpredictable.



#### 5. The Crossroads Site

The crossroads site is appealing due to its proximity to community spaces and its high traffic. This site is located in the center of town close to many commercial businesses. I named it so because of the network of

skidoo, ski, walking and car trails that make a web of transportation around it. It is located near last year's community made ice bridge, and a couple of weeks after the site was surveyed it was the location of the 2019 community made ice bridge. This site is at extremely low risk in regards to ice safety and overflow. This season the river level dropped significantly before the river froze, meaning that this site sits above the ground or a minimal amount of water. While in many cases the high traffic of this site was an advantage because it generated opportunities for engagement, it also proves a disadvantage as it increased risk of danger from the movement of skidoo's.



6. The Community Sledding Hill Site.

The community sledding hill site was interesting because it is already a community space that gets a lot of use. Each year a local snow Cat driver piles snow from the river onto the dike to create a wide sledding hill with banks to increase safety. The site has low level risk regarding ice safety but it has a lot of snow mobile traffic and a lot of sledding children creating more people management during a building period.





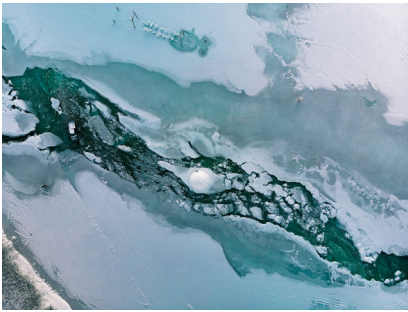
#### 7. The Borough Site

The borough site is interesting because of the dense stand of willow and what seems like an active fox den. The terrain elevation change could be an interesting challenge for a site specific intervention. While the site was low risk for humans, there was potential to cause harm to the non-human residents of the site.



#### 8. River Confluence Site

The river confluence is where the Klondike and Yukon rivers meet at the southern point of town. This site is historically significant for both the first nations and settlers of the region. The complex history of this area make it an appealing site for art installation each year. Although the site had an interesting history that could



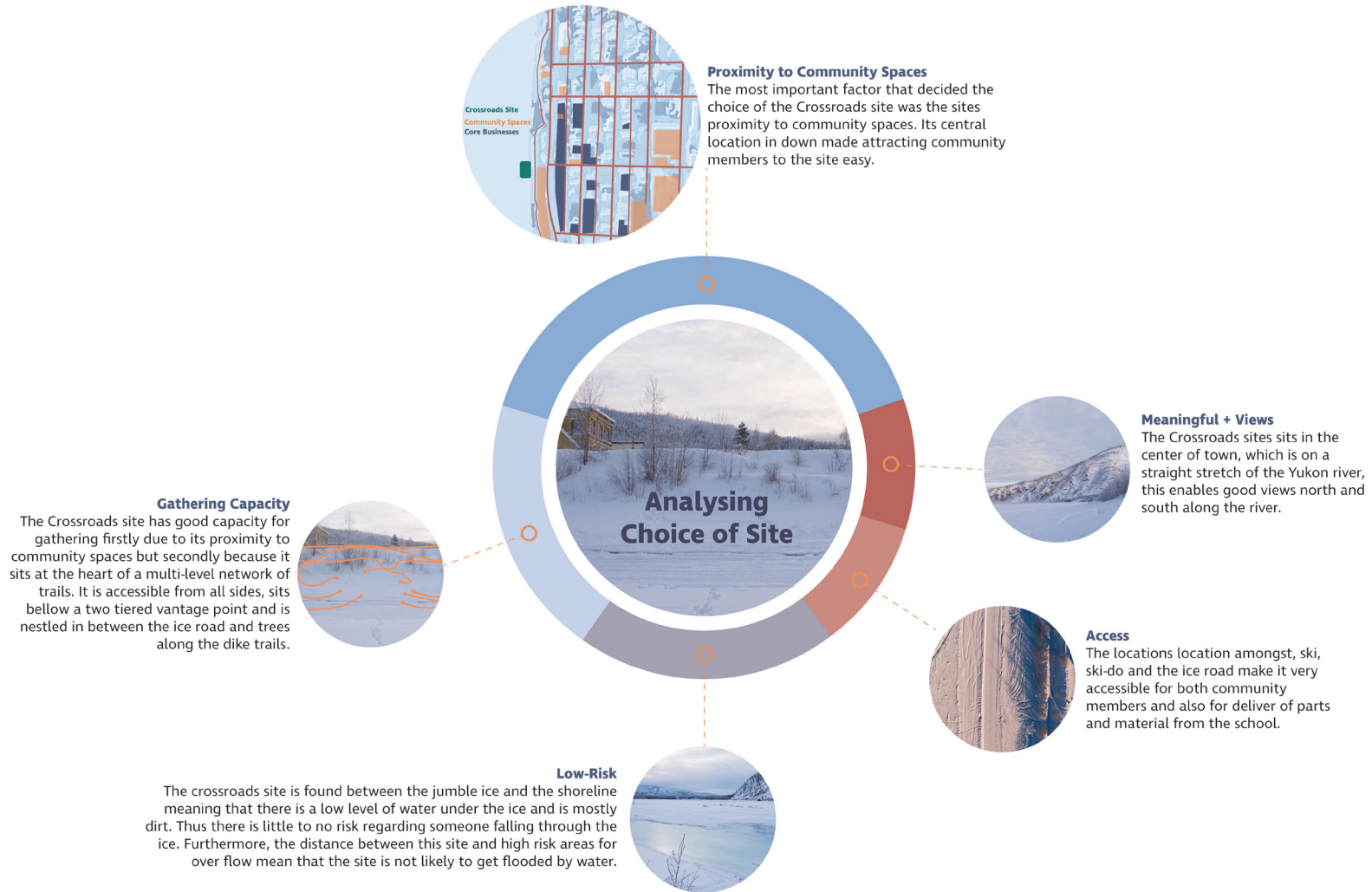
Klondike River overflow causing art to be surrounded by flowing water and vehicles to be stuck. Further underlining why this site was not a good choice despite its contextual possibilities. Photo: Benjamin Steffes-Lai

help fuel a design, this section of the river is often unpredictable since it is constantly changing. These changes make judging a safe site next to impossible. A number of people decided to build installations for the 2019 art festival at this location because of its interesting contextual background. On the third day of the festival a crack opened in the Klondike river and the entire area around the art installations flooded the site, making the art inaccessible.

### Site Detailing: The Crossroads Site

The crossroads site quickly became an attractive location for the program of gathering and warming due to its central location, high level of traffic, proximity to community spaces and low level of risk. It sits approximately 50 metres from the local grocery store, and it is close to amenities and community spaces for a range of age groups. This site would allow the gathering and warming space to sit in the middle of a network of diverse transportation trails. The river's low water level this fall left a wide shoreline which created a space on the river where there is snow and ice but not water below it eliminating the risk of the ice creaking, breaking or people falling through. The distance between this site and the much more unpredictable Klondike River meant that the risk of being flooded by overflow was extremely low. Finally, because of the amount of space between the trails on this site, the high traffic is not a risk but a benefit in that many people will be passing and thus generating opportunities for conversation and engagement.





Analysis of the choice of the crossroads site based on the following elements: proximity to community spaces, gathering capacity, low-risk, access and meaningful context.



Street access approximately 50 M from build site, looking east.



The trail crossing for a mixture of transportation forms, looking north.



The trail crossing for a mixture of transportation forms, looking south.





View of site looking east towards town from the river. The historic CIBC bank is visible in background. Ski trails, snow mobile trails and location of the ice road is visible in the foreground.





View of site looking north up down the river. Moosehide slide in background on right. Snow mobile and ski trails are visible in the foreground on the left.



View of site looking north-west. Historic CIBC is visible in the foreground and a pile of materials is visible on the riverside build site. Photo: Benjamin Steffes-Lai





Site Panorama looking east from center of the river.



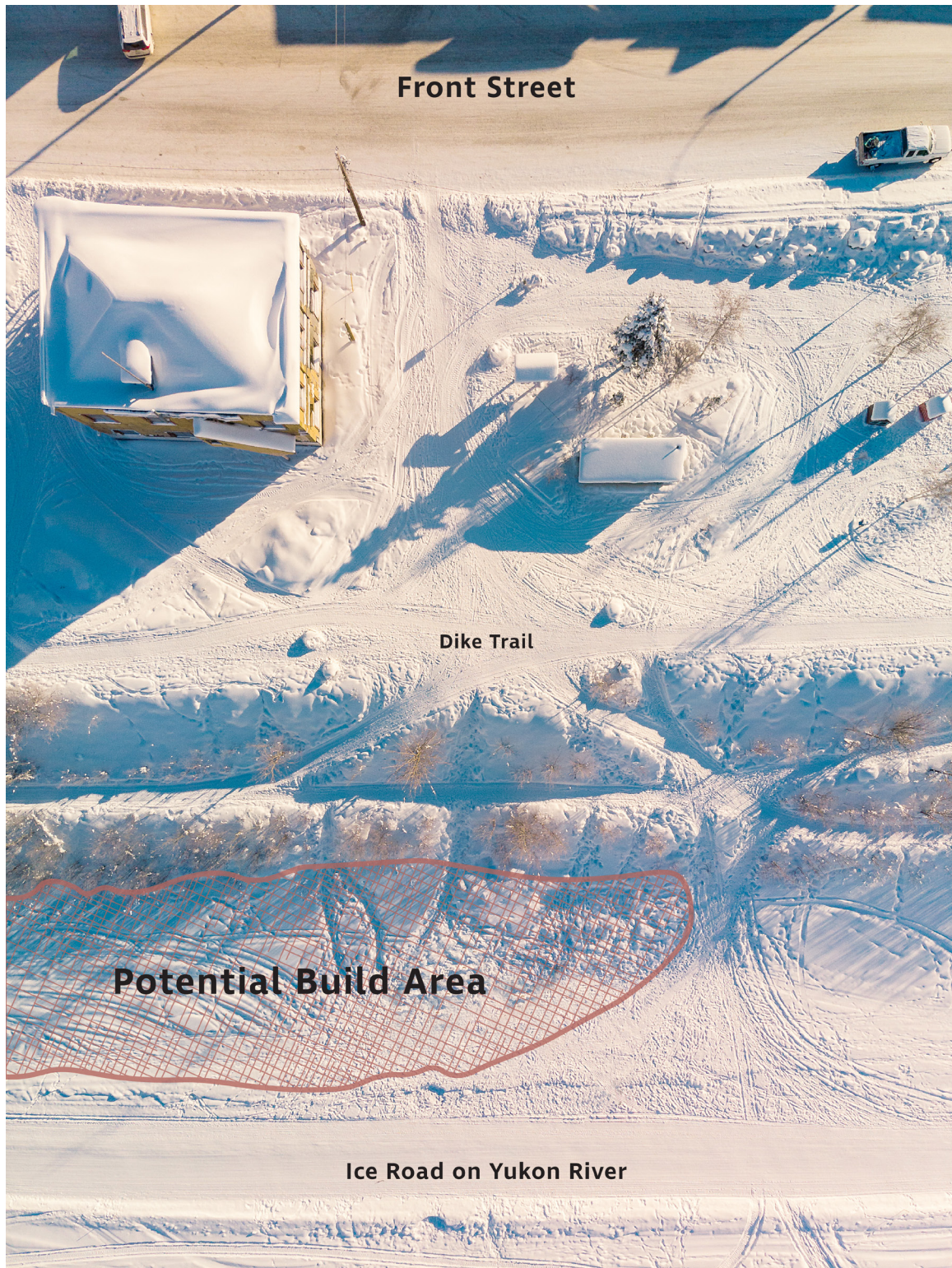
Site Panorama looking north from the upper dike trail. Yukon river, Dike Trail, SS Keno, historic CIBC building, Front street (visible from left to right)





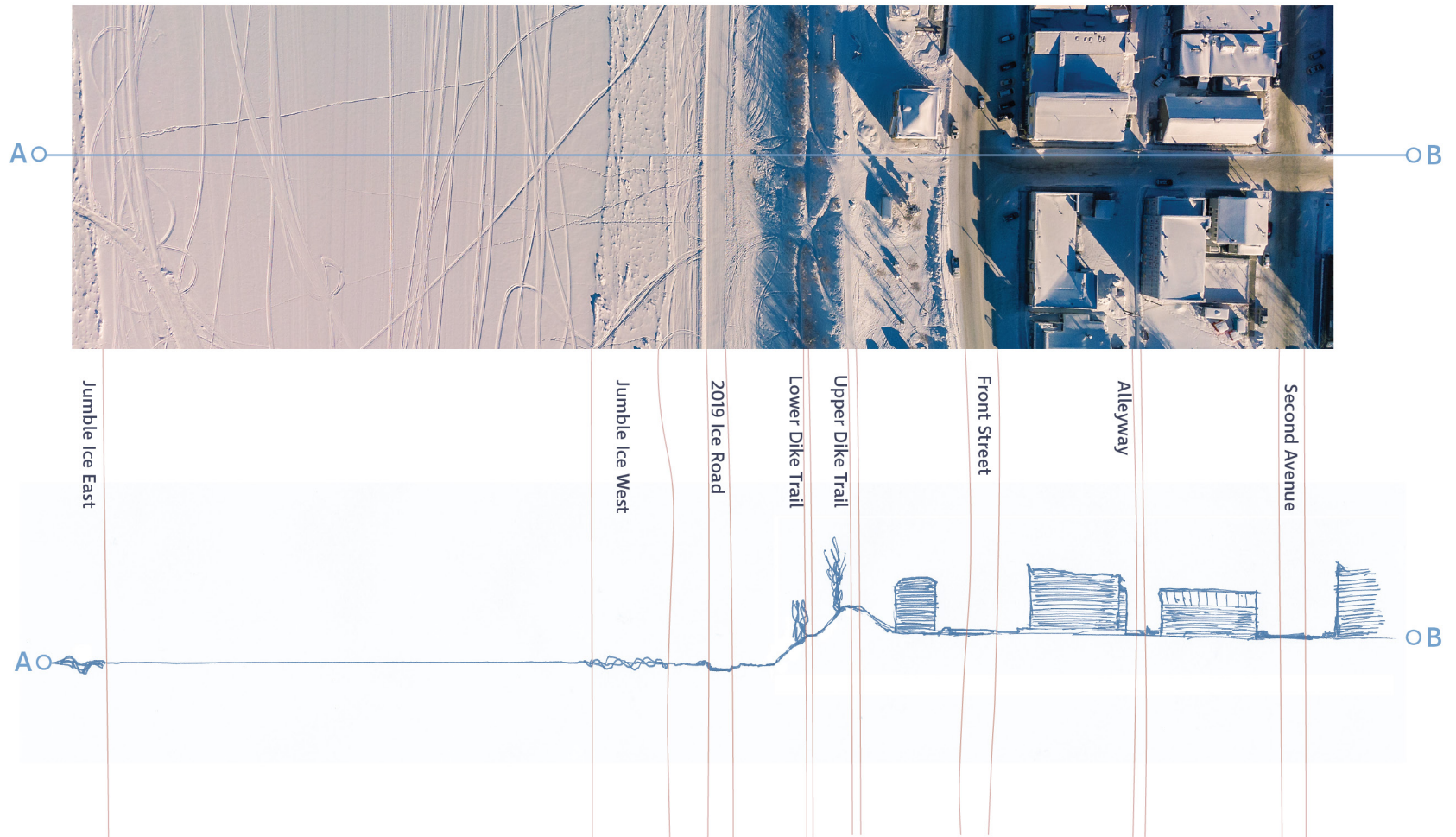
Drone photo of site showing proximity town and shoreline of the Yukon River. (Drone image credit Benjamin Steffes-Lai, 2019)





Drone photo of site showing highlighting the safest build area between the shoreline and the ice road. (Drone image credit Benjamin Steffes-Lai, 2019)

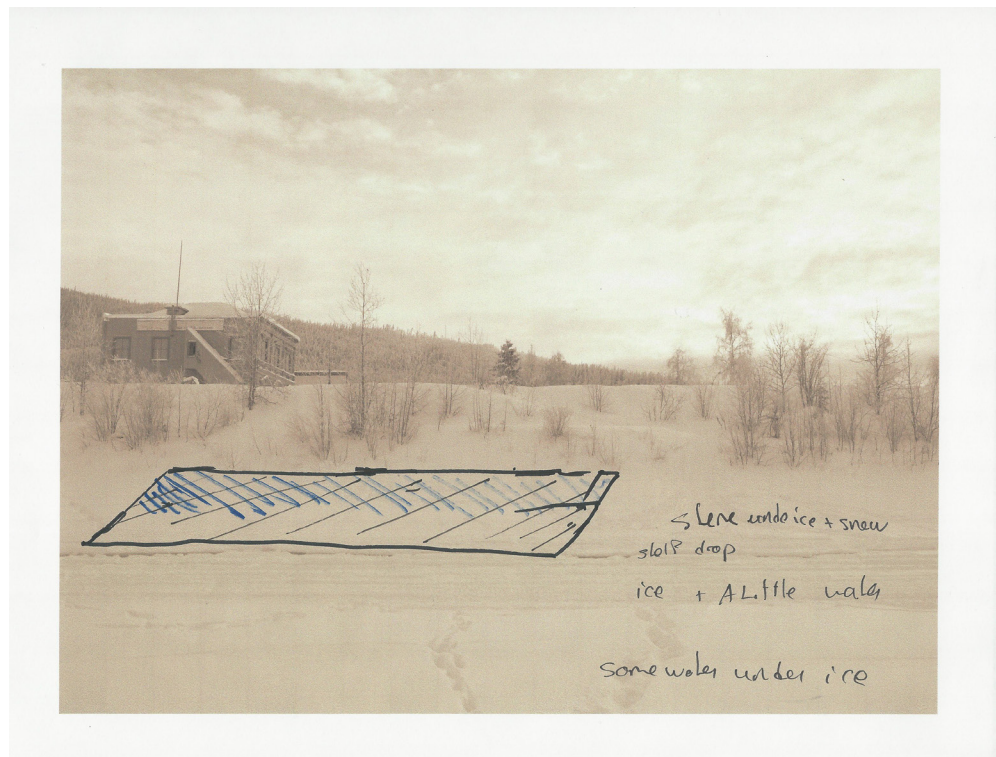




Anatomy of the river diagram, which details west side jumble ice to second avenue. (Drone image credit Benjamin Steffes-Lai, 2019)



Site study of movement and transportation pathways.



Site study on useable area to avoid transportation pathways.





willow + tree study

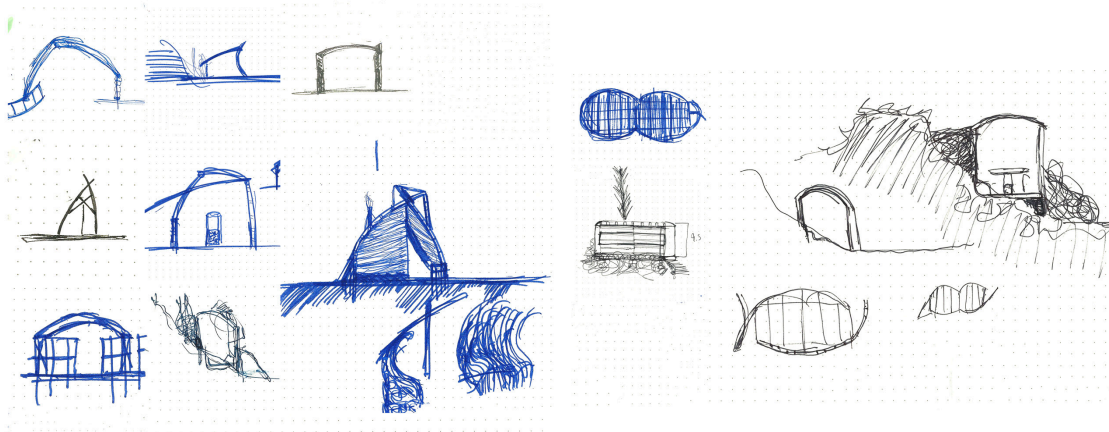
Site study on Willow and tree cover.



Site study on visible buildings.

## Riverside Gathering and Warming Pavilion Design

After choosing and detailing a site I moved to sketching based on a site-specific understanding of the design. The sketching was informed by the two building types that were developed during the design exploration before arrival in Dawson City. I wanted to develop an understanding of how the different forms might respond to site conditions. I was interested in where the structure would best suit the landscape between the top of the dike and the safe zones on the river ice.



Site-specific sketching for the crossroads site using the two initial building types (lean-to and wall+vault) initially explored before arriving in Dawson City.





Site-specific sketching on photographs for the crossroads site using the two initial building types (lean-to and wall+vault) initially explored before arriving in Dawson City.





Sketch that led to the final RGWP





Wood thawing in high-school wood shop

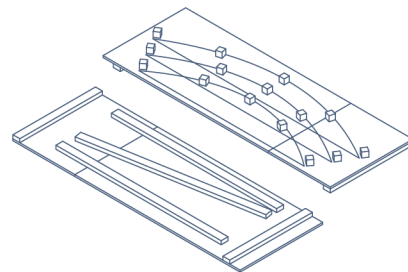
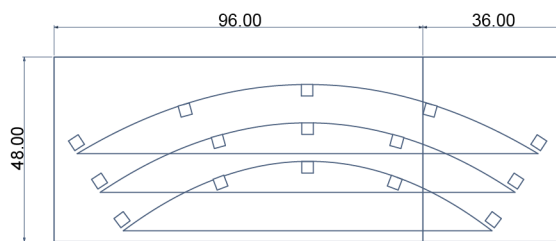


Empty jig with blocks for three sizes of curved beam.

## Building The Kit of Parts

The kit of parts provided a great opportunity to work with an existing education system. This design strategy leaves a lot of openness and unknowns which made pitching to funding bodies difficult. However, having a predefined set of parts provided an excellent way to pitch to both the community partners and potential funding bodies without having all the final answers. I was able to communicate with education administrators and provide a concrete plan of what I was to begin doing with youth in their classroom setting. Without this anchor in a very open process it would have been far more difficult to acquire support.

Both the curved beams and the variable straight beams were built in the RSS wood shop using 1 x 4 inch and 4 x 4 inch rough cut spruce beams. This indoor work space was crucial to both community engagement and the logistics of building the curved beams. The curved



1:50

Orthographic drawing of the curved beam jig.

beams needed a large bending jig and a dry and warm space to allow the wood to thaw and bend into place. The jig and the rise of the curved beams had to adapt to the ability of the wood to bend as there was a limit to how much the wood could bend without breaking. When the wood broke I reduced the rise of the curve to adjust according to the run of the curve. This adaptation to the curve rise resulted in a variable height of curve, which reflected the capability of the wood to bend without steam.



Broken 1 by 4 due to attempted bend on frozen wood.

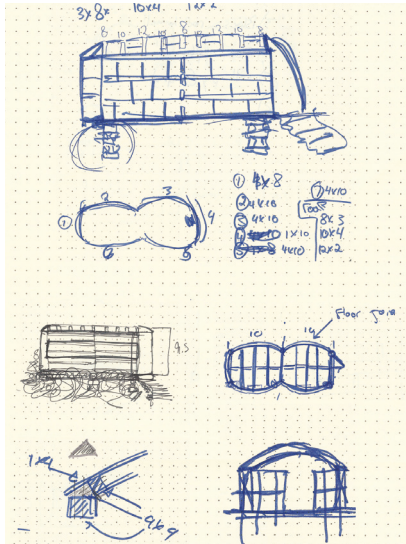


Dawson City youth per-drilling a hole for a carriage bolt.

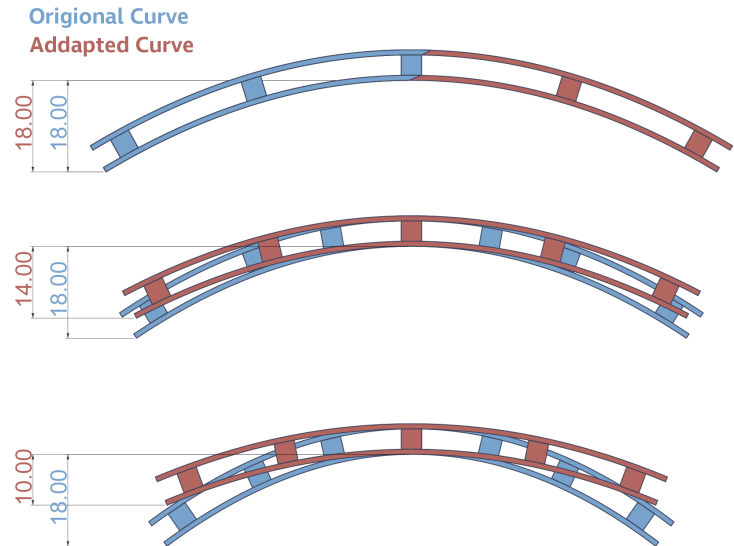
## Design Development

The final product was developed from the initial explorations of the wall and vault type. The number of people at any given time was unknown. As such, it was important to have walls that were variable in height, allowing the roof to rise to an appropriate height so people could stand against the walls without hunching. Furthermore, the curves of the walls in plan would bring people together in a circular collective way like how people come together around a table. The curved walls in the plan could also help to create smaller spaces for breakout programming. Initially I had intended

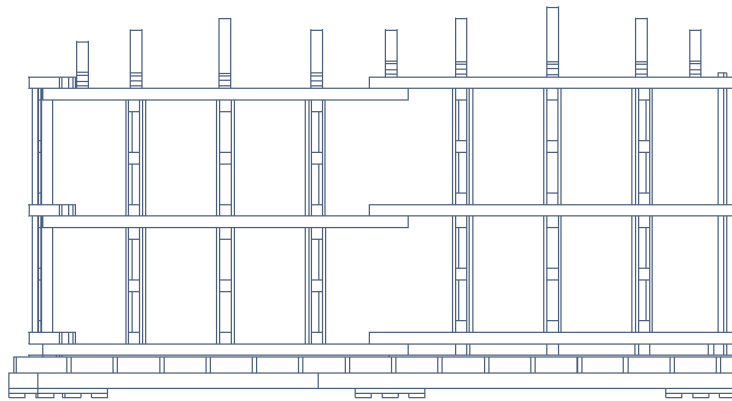
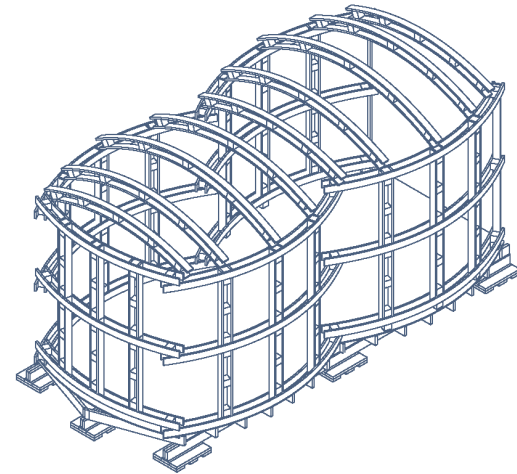
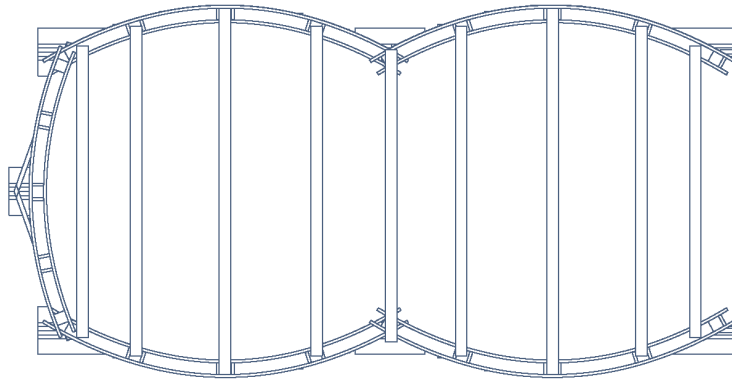
the roof vaults to have the same height throughout the space, but because the spruce could not bend as intended the curved beams were adapted to have different rises according to each length of curved beam. This change in the beam heights caused the roof of the RGWP to undulate. To mitigate the risk of injury by the



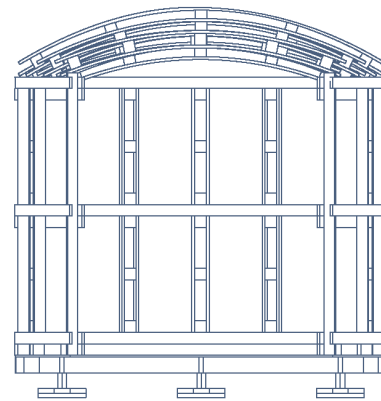
Technical development sketches collage.

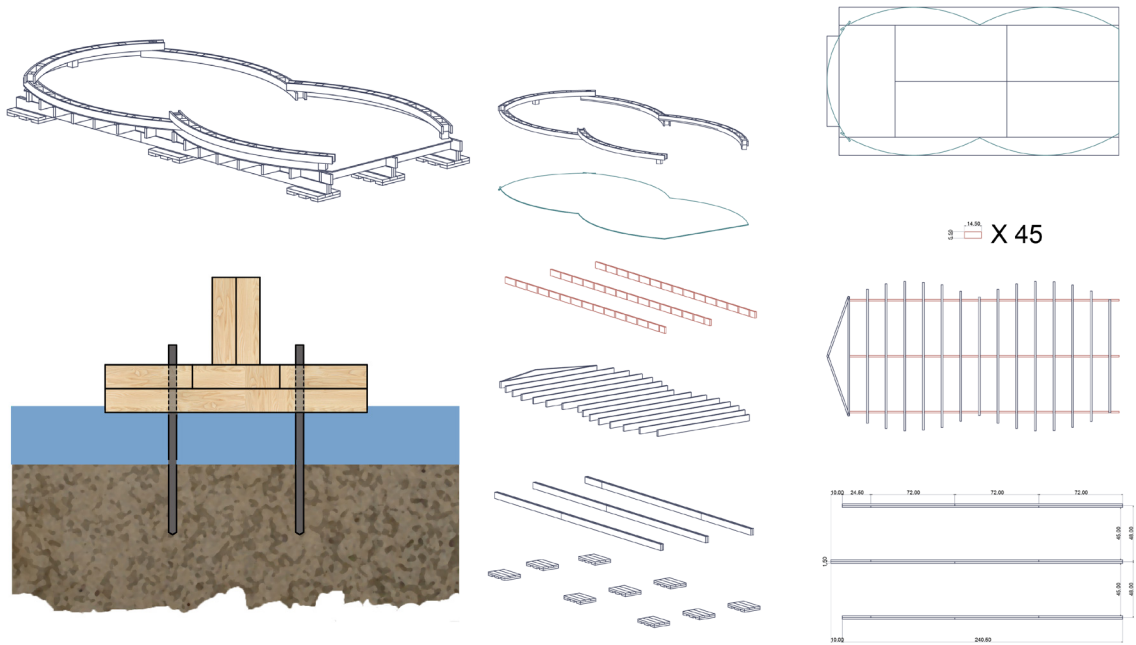


Change in the curved beam due to the woods ability to bend.

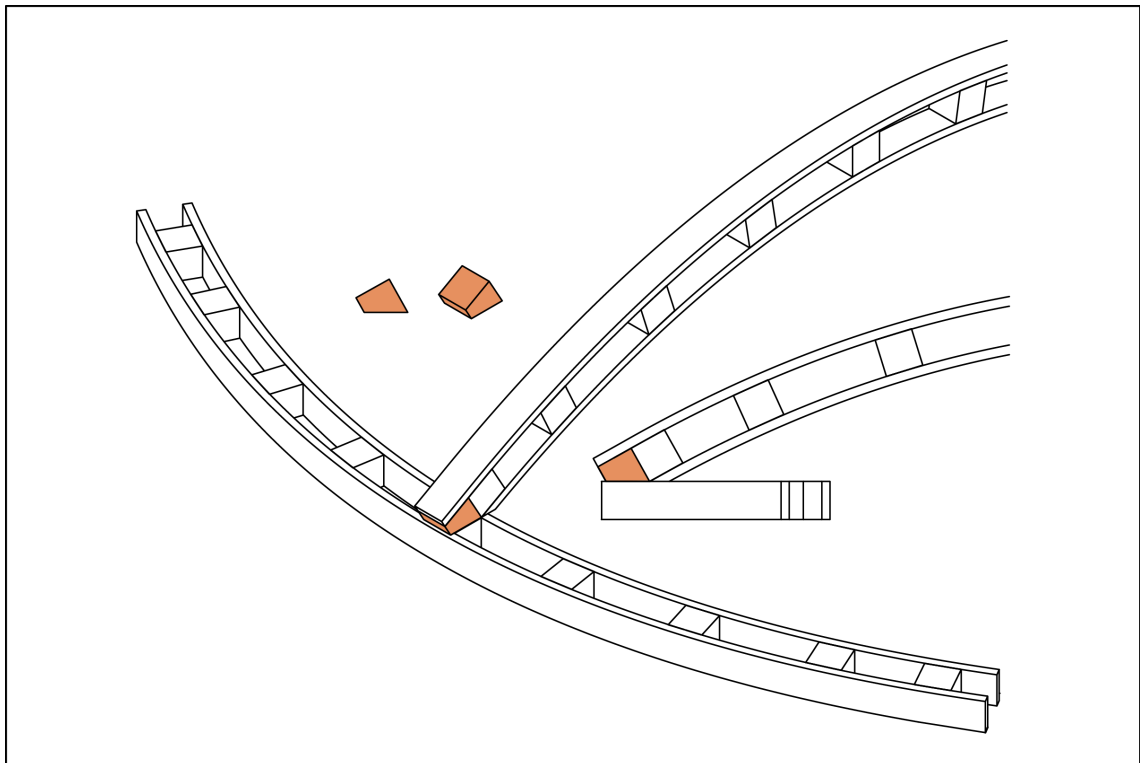


Final skeleton structure for the RGWP.





Platform detailing



Roof to wall connection drawing.



potentially high number of visitors, I built a robust platform that could stand up to the weight of a crowd.

The development strategy for the skin/cladding portion of the design was informed by the availability of materials. Before I arrived in Dawson City, my intention was to use only tensile materials. The hope was to source tensile materials through harvesting or from a second hand source. This included trips to the community dump and free store, online avenues such as Facebook, and word of mouth. While the dump/free store trip did not lead to any useable tensile materials, asking around the community led to the donations of an old, ripped up canvas wall tent. The wall tent had some useable sections of canvas, but the most valuable part was the wall tent's rubber stove pipe hole which we could cut out and patch onto the structure wherever the stove pipe was installed. This increased safety during operation of the RGWP.



Exploring the dump found many items such as old crutches but no usable tensile materials.

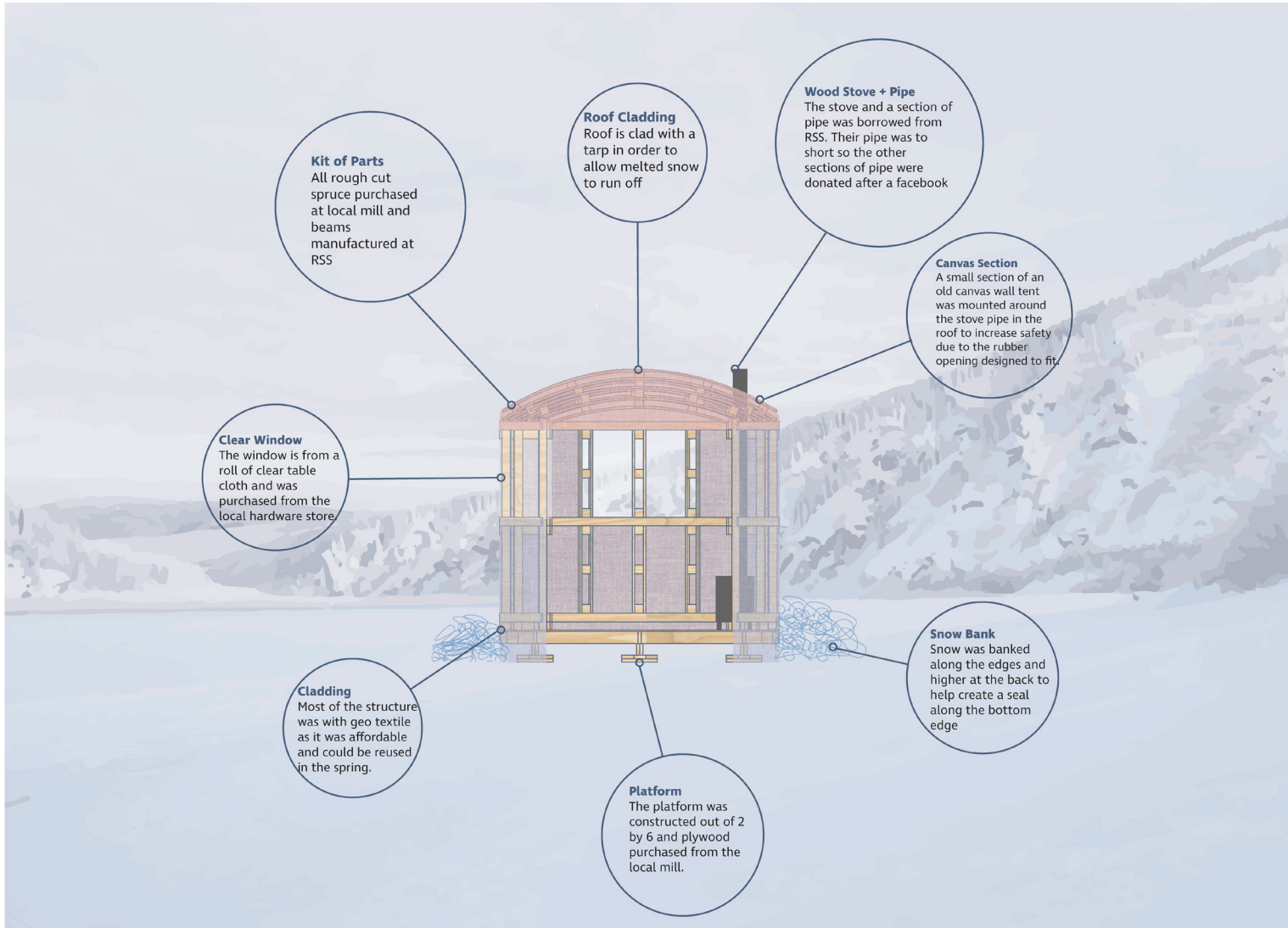


Donated canvas wall tent allowed us to cut out an important rubber stove pipe hole in order to achieve more safety during operation of the space.

Materials to clad the structure had to be purchased as the numerous art installations and the short notice meant not a lot of materials were left to be found via second hand sources. With more lead-up time in the community, fabric could have been sourced from one of the hotel owners as they often replace their stock.

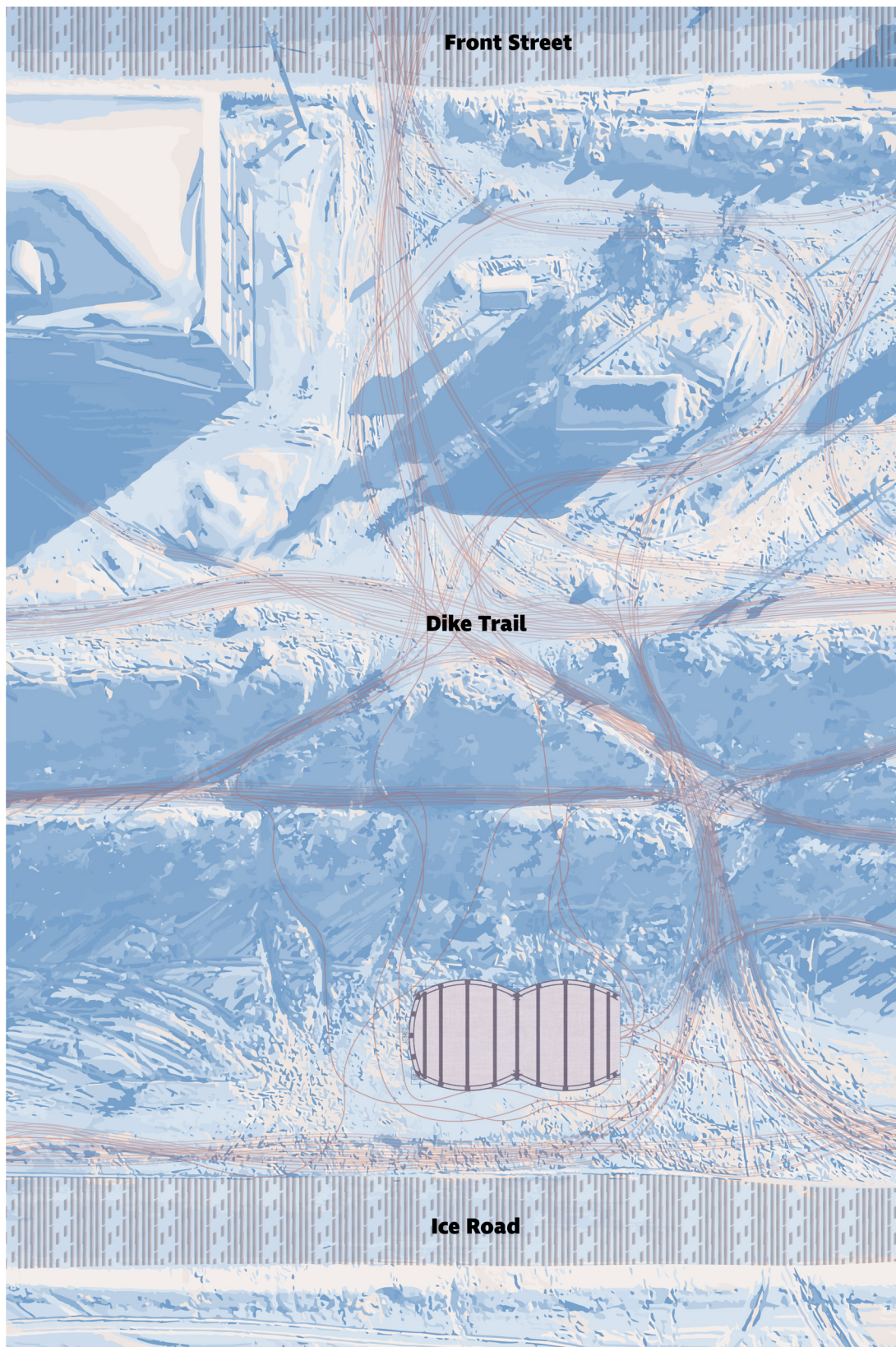
## Final Drawings

The final design to its form through the site specific sketching and was developed through material selection, and availability. The gathering structure's final location was specifically chosen to allow the trails around the structure to continue to operate as they were before. The snow created visible paths which helped to define where that area was, much like the use of desire paths in urban planning.



Section + building elements and materials used diagram





Riverside Gathering and Warming Pavillion Site plan



Elevation Drawing for Riverside Gathering and Warming Pavilion



## Final Design-Build Images



Riverside Gathering and Warming Pavilion. Photo taken looking towards town from frozen river.



Riverside Gathering and Warming Pavilion, Looking south up river. This photo was taken during (s)Hiver Art Festival.





Riverside Gathering and Warming Pavilion, photo taken from the west side of the river looking east at town.



Riverside Gathering and Warming Pavilion, Chopping wood for the wood stove.





Riverside Gathering and Warming Pavilion, looking west from river bank. Photo taken by Nate Jones





Riverside Gathering and Warming Pavilion, looking south during a public concert.



Riverside Gathering and Warming Pavilion, Lit up at night with a bonfire for the arts festival.





Riverside Gathering and Warming Pavilion, interior view.





View through window looking out onto the river.



Central wall connection



Roof to wall connection at the Riverside Gathering and Warming Pavilion.

## Chapter 4: Community Interventions

### Activating the Design-Build

The space's core program encouraged community members to warm up by the wood stove with coffee, tea, and snacks between 11 a.m. and 11 p.m. One of the principal goals of the strategy was to encourage engagement through participation, and with the RGWP's intention of using event making as a gathering agent. Once I arrived in Dawson it became clear that because of the active arts community there was potential in inviting further programming. In an effort to encourage community participation, members of the community were invited to host their own events. As such, the space was designed to be large enough to be used by others and capable of adapting to suit other programs if possible.

By embracing an openness, the structure could expand beyond its intended program to generate more extensive community participation. By embracing the potential risk of failure in this openness, the RGWP gave community users free and open access to utilize the space as they envisioned it. Embracing openness expanded the program of the space through the art festival weekend and facilitated further programming for the following weeks. In addition to the structure's core program, the RGWP became the location of a burlesque performance, a soup sharing space, and a kick-sled sales location. Conversations during the weekend led to programming for following weeks, which included musical performances and a grade 7 and 8 field trip location.



People gathered outside the RGWP.



Setting up tea and coffee for community members during the weekend long (S)Hiver arts festival.

The core programming throughout the arts festival provided an extended opportunity to initiate conversations and exchanges with community members. As the RGWP is neither a highly conceptual art piece nor an extremely practical design like many of the built things in the community, it provided an excellent opportunity to have conversations with people who exist anywhere on the spectrum of the building culture. Discussions ranged from some visitors questioning the concept of the structure to visitors exclaiming the more practical side in its potential as an ice fishing shack. Both types of conversations often led to topics such as the origins of the space, the collaboration with the high school, potential locations for the structure, and the possibilities of the kit of parts.

The collaboration with the high school yielded an interesting result: on the Saturday of the art festival, one of the youth build participants from the RSS shop classes arrived on his skidoo without an invite but stayed for the whole day, helped design and build the furniture, and kept the fire. Moments like this demonstrated the sense of pride participants had in the structure they had helped to create. The youth answered the visitor's questions and told them how we built the bent curve how the bending jig worked.



Spruce log and 2 by 6 benches made with youth participant.



Spruce log and plywood negative table made with youth participant during (s)hiver art festival.

The partnership with the arts festival made it easy to facilitate this openness in the program. The Burlesque performer, Chevonne of the Yukon, had expressed interest in performing on the frozen river on the first night of the festival. Logistically, performing nearly naked on the frozen river at  $-20^{\circ}\text{C}$  has its challenges and inherent



difficulties, so the organizers of the festival made the RGWP the location of her performance to provide a safe place for both the viewers and the artist to warm up. The performance attracted approximately 100 people to come down to the river to gather around the fires in the RGWP and watch Chevonne perform her burlesque routine.



People gathering around the fires before Chevon of the Yukon's burlesque performance.



Chevon of the Yukon's burlesque performance.





Chevon of the Yukon's burlesque performance from above. The contents of the image are the RGWP (left) and two bonfires and Chevon with people gathered around.



Another element of the arts festival was a series of soup exchanges. In a different location each day, an artist would offer a bowl of soup in exchange for a soup recipe, drawing or story. Because of the art festival's goal of using the river as much as possible, artist Andy Pelletier decided to use the RGWP as the location for her soup exchange on the second day of the festival. The concentrated activity in one area of the river prompted a kick sled salesperson to use the RGWP's location on the river as a demo and sales area. She left six kick sleds



Artist Andy Pelletier's soup exchange event for (s)Hiver art festival.



Kicksleds left on the river to demo.

in front of the structure for people to test on the river ice road.

In addition to the arts festival programming throughout the weekend, a concert and a school field trip for design workshops and outdoor education were planned. The idea for the concert event began as a conversation that suggested the pavillion was a good performance space. In an attempt to explore that program idea, I expressed the possibility to a few local musicians and quickly there was four acts lined up for an evening event in the structure. Music is a major gathering agent in this community and brings people together all year long. In this pay-what-you-can event, community members were encouraged to keep it a non-alcoholic space so it was accessible to all ages and economic brackets. This even provided a great opportunity for members of the community to see the capability of the space as there were approximately 30 people in attendance. At this event, I spoke with an educator at the high school who was interested in a similar structure for an outdoor classroom. These conversations resulted in a grade 7 field trip to the river to workshop a design for the outdoor classroom.



Tunes in the Warming Hut Event. Community members gather around artists and the wood stove on a cold evening on the river.



Embracing openness and risk of potential failure within the program yielded events, and more importantly, conversations that were not expected or possible. I interacted with new parts of the community and by embracing other people's ideas and thoughts for the space the prototype was able to adapt to a new form and program.

## **Adapting with Community**

The RGWP became not only an avenue for community events but also a tool for designing its future life through housing design workshops with small groups of youth. After the representative from the school expressed interest in adapting the space for something in the outdoor classroom, I continued the conversation and included the wood shop teacher who was my liaison for partnership with RSS. After involving all parties, a grade 7 field trip was planned. The youth's time would be split between three activities: design workshops with me, outdoor education with their core teacher, and photography with their French teacher.



Workshop during a grade 7 field trip to the RGWP



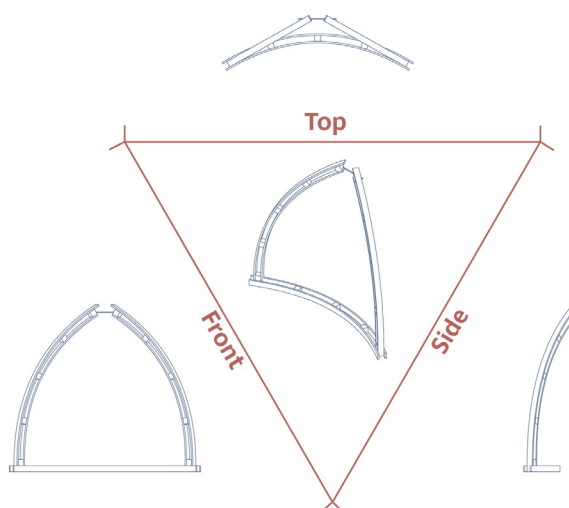
Grade 7' design workshop.

This enabled smaller groups for a concise session split up into three phases. Housing the workshops on the river offered two major benefits. Firstly, it got the youth out of the classroom and elevated their engagement. Secondly, the one to one prototype became a tool for understanding. In each stage of the workshop, having the prototype to point to helped break down barriers of understanding. I pointed to specific parts of the beams to explain how they were built and the youth were able to touch the structure and look at how parts came together. The size of the structure also encouraged the youth to see what was possible with the scaled parts in front of them. The first phase was conversation about the outdoor classroom, its users, what it was used for, and how could it be used differently. The second phase was modelling with the scaled kit of parts, and the third phase was drawing the model in plan or section.

Within the first phase, we discussed that the primary users of the outdoor classroom were students and that the secondary users of the space were elders and teachers. The youth informed me that space had been misused lately (which was one of the reasons the teachers wanted to build something new in the space) and we discussed why they thought that was happening. The representative from the school had decided the structure should focus around the firepit. I directed the youth to think about what elements the design needed, and with some help, they came up with the following list: benches, a fire pit, and something to protect from wind.

We looked at the scaled kit of parts and I explained

how each beam was built. I was able to explain that I designed the structure using the same kit of parts. They were easily able to get a sense of scale because they could measure the 1:32 version up against the full-size version. Initially, the youth had explored the same building types I had before arriving in Dawson City, but by the end of the workshops they had discovered other approaches and started to focus mostly on a style that used a triangular three curve module.



Triangular three piece curve beam module.



Grade 7' design workshop. Modeling phase.

In the last 10 minutes of the workshop I asked the youth to attempt to draw one of the models they had played with from the top or from the side. In the first youth grouping, they immediately lost engagement and made statements like "I don't draw" or "I can't draw." In the second group of youth, during the third phase, I asked them to use the scaled kit of parts to help draw in plan and section and this broke down a barrier and produced some results.

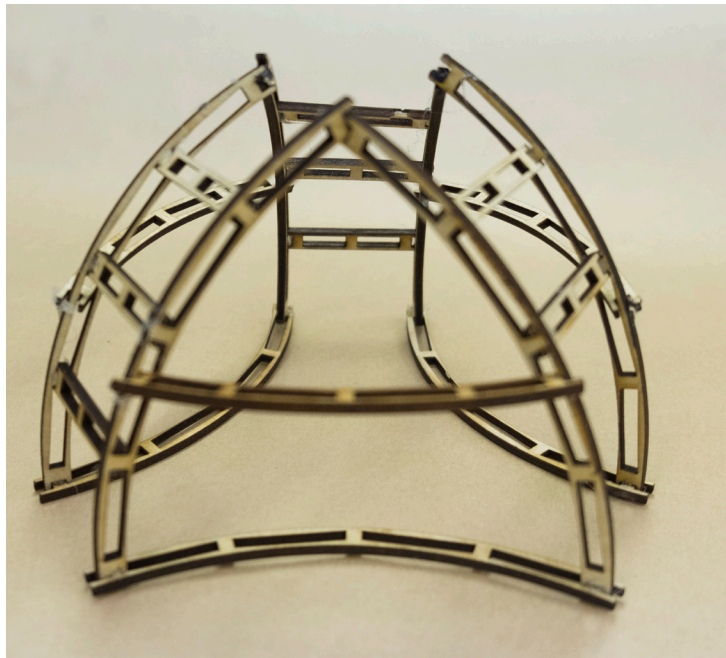
The workshop resulted in the adaptation of the structure to one which used the three curve module the





Grade 7' design workshop. Drawing phase.

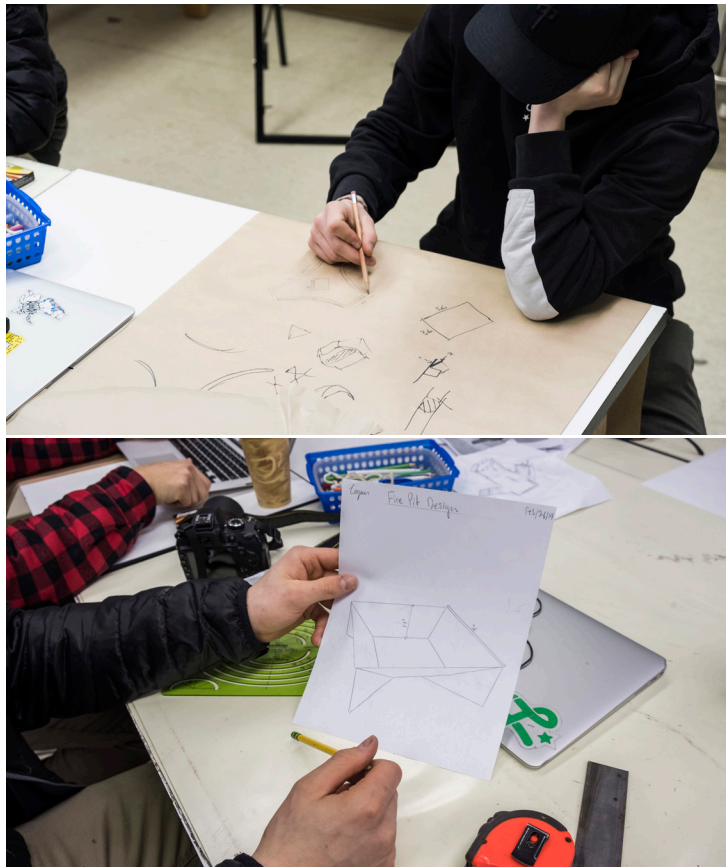
grade 7 workshop had designed. During another after-school program I was helping to facilitate, one of the grade 7 students helped me to finalize a design through modeling by adapting the two module system the grade 7s were exploring into a three module system with straight connecting parts.



Final adapted design with three triangular modules

## Building with Robert Service School

This adaptation of the RGWP helped to continue my partnership with RSS. The outdoor classroom structure facilitated the last-minute take over of a grade 8 wood-working enrichment program and the grade 11 welding and metalworking course for a week. I facilitated the design-build of the metal fire pit with the grade 11 students and the grade 8 enrichment group worked with me to place the structure within the site, prep the site, work on technical design development, build new parts, and assemble the structure. The grade 8s helped to sketch a plan of the site with existing trees, basketball court, areas which flood in the spring, and any existing structures.



Grade 11 fire pit design-build session.



Outdoor Classroom Site



Laying out the footprint, only to decide that the connectors should be a bit larger.

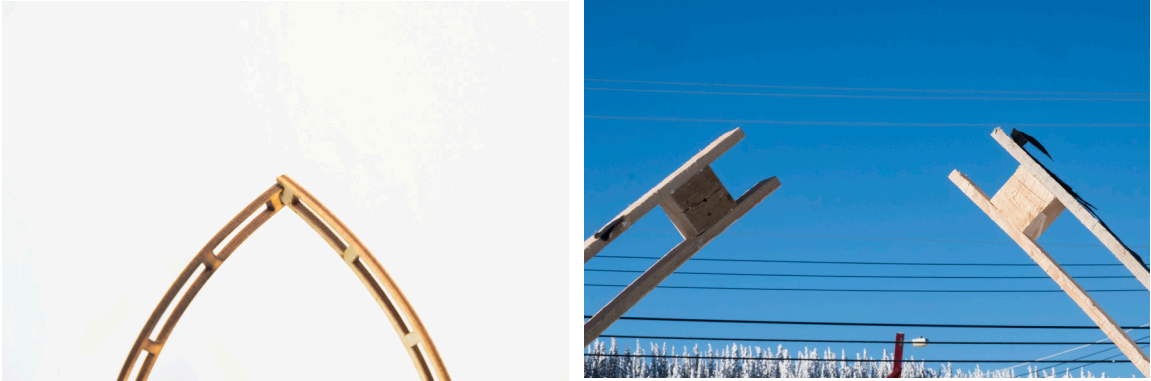


Digging out the footprint of the outdoor classroom structure.

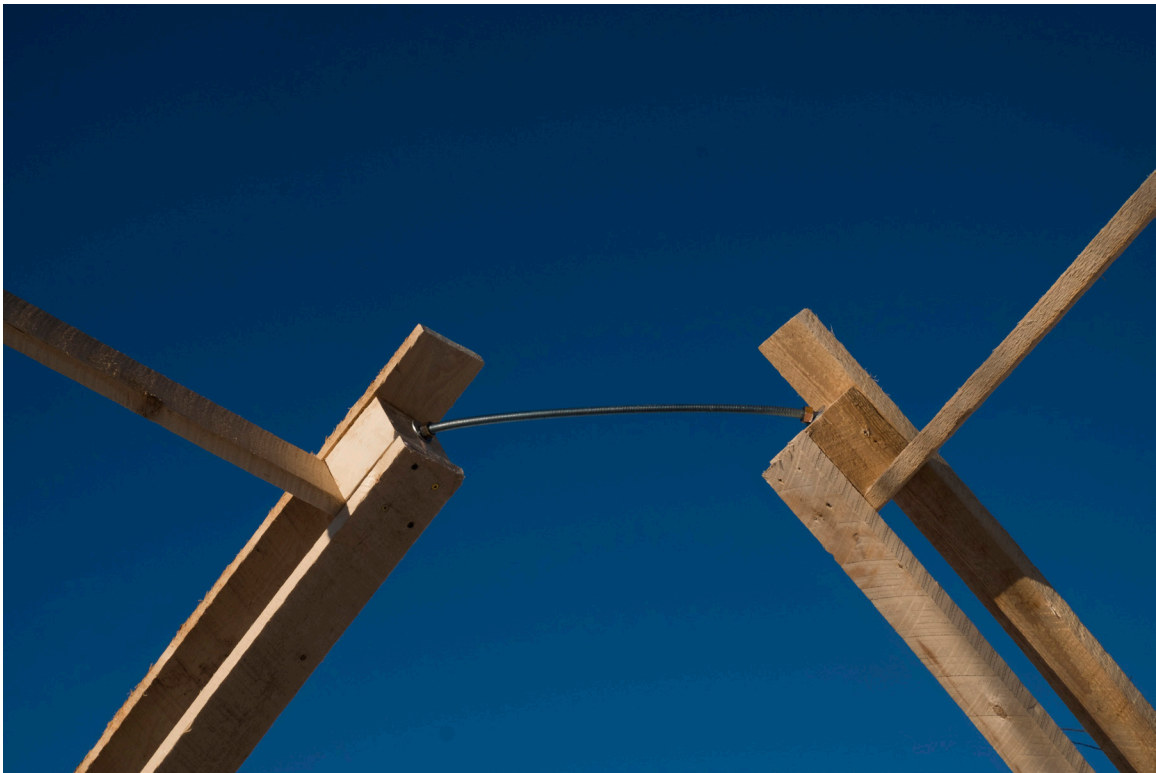
After grasping an understanding of the site, we brought the full-size kit of parts onto the site and laid out the footprint. We decided that 4 foot connector pieces were not big enough and that expanding it to 6 foot connections would suffice. While waiting for more material for the connecting beams, the youth helped to prepare the site by digging the compacted snow to expose the ground. Upon arrival of the materials, the youth built the new straight beams and we started to assemble to the structure. In the first assembly of the triangular module, we discovered the difference between the scaled model and the full-scale version. The model's curved beams had more flex so they could connect at the highest point, the full-scale curves, however, were unable to join. The youth and I puzzled this out, and at my suggestion we tried to create a flush wood connection which ended up being very difficult due to the warping of the beams. After a number of tests the youth suggested a metal bar that would connect the two beams and hold them in place while keeping the wood separate. This resulted in a light and minimal looking connection. On the last day of the school week,



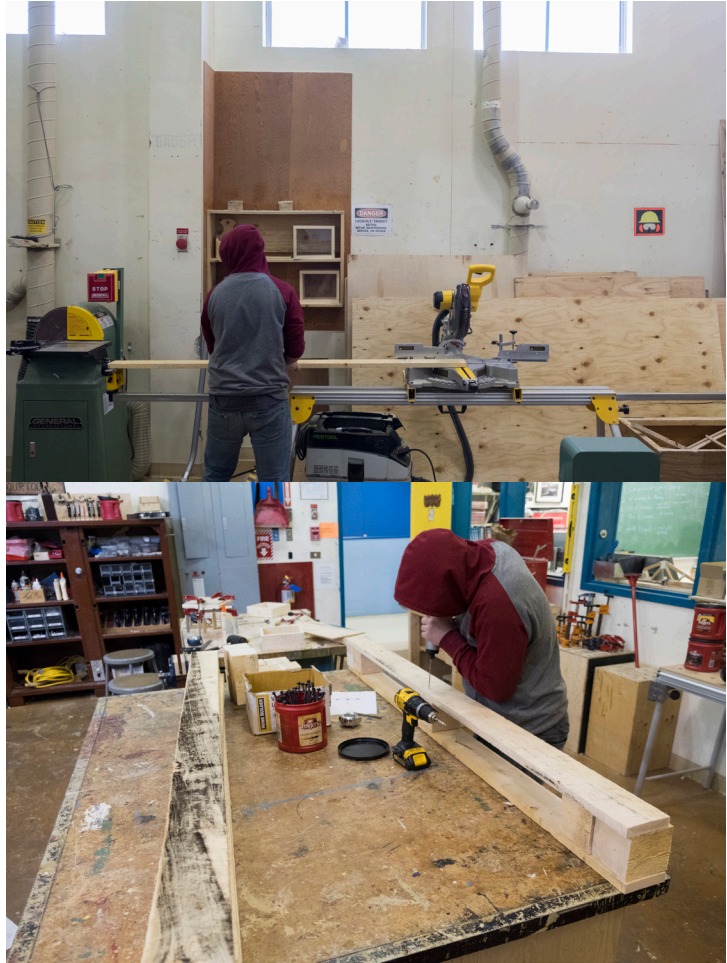
the grade 7s were invited down to see the final product, have tea and talk about what could happen next with the outdoor classroom and the structure.



How the curved beams came together on the model kit of parts (left) and how the beams came together at full scale (Right).



Solution for the separation at the top of the triangular module.



Building the new longer parts to join the structure.



Assembling the structure on site.



## Robert Service School Outdoor Classroom Project Final Images



Final view of the fire pit structure in the outdoor classroom.



View of the fire-pit structure through the entrance to the outdoor classroom



## Curved Presentation Wall

Upon return from the Yukon design-build portion, I rebuilt the beam jig and manufactured two more curved beams and three more straight vertical members to construct a presentation wall to support the presentation of the design-build in the north. It provided a full-scale example of the beams and the adaptability of the structure. A strapping and wing nut system clamp the prints in place at the top and the bottom.



Presentation of the design build in Halifax on a adaptation of the kit of parts which created a curved presentation wall. The five panels are from left to right: Background + Framework, Ideal Design-Build, Building + Site, Riverside Gathering & Warming Pavilion, Adapting + Outcomes.



Detail photos of the curved presentation wall.

## Chapter 5: Conclusion

### The Power of Process Things

Before the design-build portion of this thesis, I had a naive understanding of Jane Bennett's power of "things." I saw the potential in the finished things we build as change agents and thus the responsibility we have as designers. Upon reflection, I have begun to understand the power of the process and the power of "process things." The power of the process is in the way it can captivate and encourage participation while the power of "process things" exist in the things we use to make final products—the by-products of the process, jigs, models, drawings and recordings of processes. These can enable community engagement and activate participation. While the design-build process is no longer evident in a built thing, elevating the process by taking record is where the real potential exists. Looking at the byproducts, jigs, models and any process recordings promote reflection of what might have been as much as what is. This is the power of "process things."

The power of process objects became evident at two scales, firstly at 1:1 and secondly at the playful scale of 1:32. The scaled kit of parts was developed to explore potential form. The 1:32 kit of parts enabled Nils Gore's "serious play" to occur, which highlighted opportunities in the playful nature of scaled models. These miniature versions of the full-scale beam created a playful engagement tool and approach to designing with a community group. This idea of serious play was implemented personally in the exploration phase and again more collectively in the workshop phase of community



adaptation.

In the workshop phases the successes of playfulness in modelling modeling phase is most visible when in contrast to the resistance of producing a drawing. Integrating playfulness in the modelling stage enabled a level of participation from youth that held engagement longer than drawing did. During workshops with youth, drawing nearly caused the youth to lose complete attention in action. Drawing was intimidating, and there was a fear of failure through drawing. Drawing inherently had more barriers, while using the scaled kit of parts for sketch modelling naturally had a sense of play.

The pieces felt like lego, and the playful act of putting pieces together was familiar regardless of the different form. With a model that didn't work there was no explicit evidence, whereas with a drawing the youth had something to dislike or compare with their peers. Through the lens of serious play, this form of playful modelling was, on the one hand, telic play because the goal was to create a structure or form that stood, while on the other hand, it was paratelic because the lack of evidence removed all consequence. As the designer, everything that was needed to reflect on and adapt the design was evident, and I had conversations, the experience of experimenting alongside the youth, and photo documentation for reference. The combination of serious play and a scaled model is an excellent tool for working with community groups and members who do not have a creative background and are risk-averse. As a tool, it strikes a balance between goal-oriented action and comfort of exploration. The models created do not

just have power as representations of a larger scale; they also have the power to engage the community member in the project. The playful nature of the activity breaks down barriers and allows almost anyone to participate while creating an environment for informal conversations. The models thus have power because they can simultaneously suggest form, initiate discussions, and facilitate direct participation in the project.

The power of process things is further evident through the participatory design-build occupation of space. The process begins to deconstruct traditional dynamics between designer, builder and community member, and that deconstruction creates space for engagement and opportunity to exist. By reducing barriers between design, build, and community the objects of the process take on a new impacts beyond their power to create. They become agents of communication and create opportunities for conversation. For example, in the manufacturing process of the curved beam, the jig had thing power in its ability not only to create the essential parts for the design but its occupation of a large central space in the high school woodshop also engaged conversation with any student who entered the room. It immediately prompted questions such as, What is that? Why is it here? How does it work? This helped to break the ice and initiate conversations. The youth would ask me these questions, but they would also start helping because of their comfort and familiarity in the space.

The shift in scale from the smaller projects they were accustomed to seeing and the full-scale beam manufacturing that occupied so much space drew their

attention. The jig is the physical manifestation of a series of steps in the building process, which give it the power to aid the physical and mental understanding of the youth. The jig asserted its power through its ability to attract discussion. The jig as a by-product of the design-build process helps to draw people in; it acts as a window into action and an opportunity to focus the conversation around understanding. The jig occupies a hybrid state between a tool for building, an apparatus for teaching, and a tool for understanding.

The reduction of barriers between roles also occurred out on the river during the assembly stage of the building of the Riverside Gathering and Warming Pavillion. The kit of parts was adaptable, timely and different enough to generate interest. The strategy was designed to take advantage of rough cut lumber dimensions to reduce steps in manufacturing and produce a system that could be assembled quickly by sliding and snapping parts together. The unexpected power of the kit of parts was their simplicity at all scales. After the manufacturing stage, the building process was more assembly than construction. While both fall under the category of building, the distinction between the two is that in construction there exists significant barriers between public and dangerous tools, whereas in assembly there is limited use of power tools thus allowing fewer barriers. The prefabricated nature of the curved beams allowed meant there was minimal use of power tools on site and therefore less risk

Process things impact how we teach and engage with communities throughout the process. Understanding



the power of process things show how elements of design-build projects become tools for teaching and engaging. The integration of playfulness via a scaled kit of parts highlights the value of these process things to impact both education and how we go about design build projects.

## **Building a Sense of Place Through Activity**

Design-build projects are place-sensitive when they are community-focused or when they attempt to integrate a level of participatory design. As Dolores Hayden points out, the concept of place is subjective and not easy to define. For this thesis, I understood that place is experience based and that by designing and building together we could collectively and collaboratively generate a sense of place. Design-build is imbued with the tacit and inexpressible knowledge of the human experience of making. As such, it instills a sense of place into what is built. What I did not expect was how we could collectively access a sense of place through activity by using the built space. My assessment of place is auto-ethnographic and referential. It was limited to my understanding of the community and my observations because this thesis intended to study the design-build process and not the community members themselves.

This design-build accesses the human experience of making by collaborating with a group of youth in a variety of stages of this process. The youth in this design-build were involved in the manufacturing of parts, the assembly of the RGWP, activation of the RGWP, adaptation of a new structure into a fire pit structure and the building of the original structure. Throughout

the process, the youth collectively influenced the project through action and experience. In the manufacturing of parts phase, the youth and I worked together to adapt the curves according to the capability of the wood. As a group, there was a better understanding of what the wood could do with the condition of the region and time of year. This exploratory testing resulted in a better understanding of building in the north with rough cut spruce. Our collective experience helped qualify the constraints of the cold, humidity and need for an indoor space. I tried to allow their participation in these phases to influence the process, but admittedly this was new territory for both the youth and I. We were testing the capabilities rather than accessing their understanding of the material, though they did have a better understanding of the local condition than I did. The time constraints of this project ultimately impeded the youth participants' ability to influence the end outcome. In an ideal scenario, I would have liked to have brought with me just a kit of parts and have the youth assist more with the design of the first structure. The  $-40^{\circ}\text{C}$  temperatures during the first week of my time in Dawson City resulted in a lack of participation in the site-finding phase because educators are not allowed to work outside with youth in temperatures colder than  $-30^{\circ}\text{C}$ . With more time I believe the youth could have influenced the site selection, form, and place-sensitivity. Their participation beyond the wood shop did help me to further understand the community in regards to how people use the river. Their perspectives helped me to see the possibility of using the structure beyond what I had intended it for and in some ways inspired

me to embrace openness in the activation phase of the design-build.

I had anticipated the value of a participatory building and accessing tacit knowledge through the built experience, but the central discovery in regards to place-sensitivity was in the activating phase of this strategy. Embracing openness and welcoming community members to activate the space in their way helped me to understand what creates a sense of place. The activity also contributed to a collective memory of location, further contributing what makes sense of place. My earlier exploration of the concept of place points out that a sense of place changes over time.

Upon reflection, I realize that while the RGWP was successful in helping me understand what encapsulated a sense of place, it also contributed to the future community sense of place. For example, Chevonne of the Yukon's performance outside the RGWP captured the impromptu nature of Dawson City, as close to 100 viewers gathered around two large bonfires on the frozen river to watch a fellow community member perform burlesque in -20°C. This experience is now ingrained and associated with this location and the frozen river for all those people who attended. As Edward S. Casey and Dolores Hayden explain, memories are located in a place. Chevonne of the Yukon's performance is now associated with this location as long as the viewers remember that it happened.

Because I only had a short period of time to work in the community, my ability to assess a sense of place was limited. If I could spend more time and re-do this de-



sign-build project, I would attempt to integrate sociological assessment methods to ask questions of people, their prior experience and their feelings regarding what develops a sense of place. In this thesis, I chose to focus on the process and where it allowed interaction with people rather than on the people themselves. The next logical step in scholarship for this type of design-build work is to focus on the process, the people, and the outcomes in parallel. If a sense of place comes from human experience, it makes sense to study the human element. This design-build proves that the community can effectively participate in design-build and it helps to identify the parts of the process where a more qualitative scholarly research on often tacit knowledge relating to people and place in design-build can begin.

Led by Professor Arlene Oak, the Insight Group of the Thinking While Doing initiative have begun to dig into the “often-tacit social and cultural underpinnings” found in design-build projects (Oak, In press 2019, 1). Just like the Thinking While Doing research initiative strives to contribute to scholarship beyond architecture education, I believe the study of design-build, people and place needs further research through a more diverse lens. More specifically, research should include an approach like Oak’s interpretive sociology approach to qualitative data, which “typically uses qualitative methods such as interviews, observations and note-taking, and recording and analysis of social life that has occurred in “real” and natural conditions” (ibid, 3).

Through extensive audio/visual recording collected by the Insight Group during the Thinking While Doing in-

initiative, Oak analyses in detail the conversational interactions surrounding design-build. To better quantify design-build's ability to capture a sense of place, scholarship could embark on a qualitative approach, such as Oaks. Sociologist David Silverman addresses the topic of "authenticity" in qualitative research and the need to gather an authentic understanding of a person's experience (Silverman 1993, 21). His work in *Interpreting Qualitative Data: Methods for Analysis, Talk, Text and Interaction* helps to define the methods of analysis for interpretive sociological research.

## **Material and Process Palette**

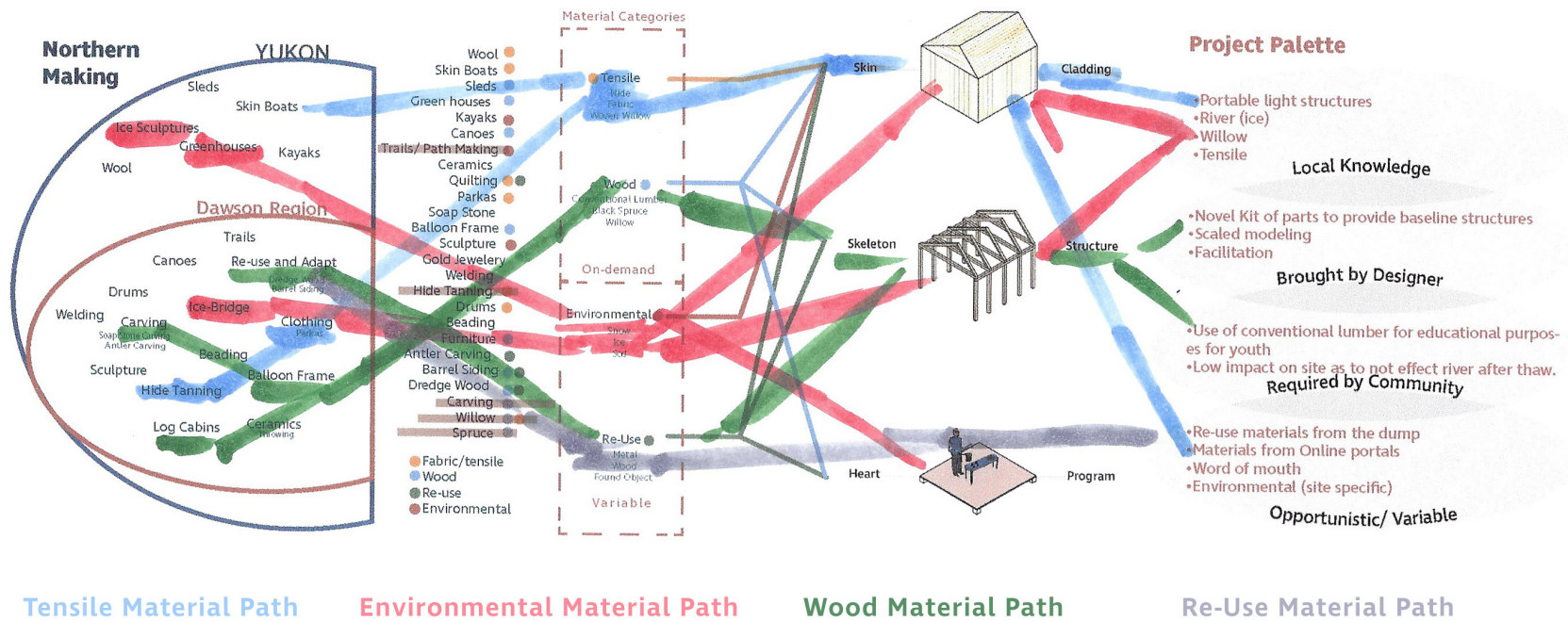
Upon reflection, the material palette for this thesis did not function in the way that Carmen Corneil had envisioned. The material palette performed as a way to survey materials of the region and provide a summary of materials and approaches that were available while working remotely from Halifax. It therefore provided a limitation for material selection but not for the design of the final product. Looking at northern making helped me to develop an understanding of potential built elements of the design-build. The first northern making material palette diagram outlines how local making influenced the final product.

The first diagram shows where each element was sourced. Further reflection is possible by creating a secondary material reflection to help make evident the source of each material or process.

The benefit of limitation was not in the design phase; rather, the kit of parts helped to keep possibility limited, while the material palette helped to direct the

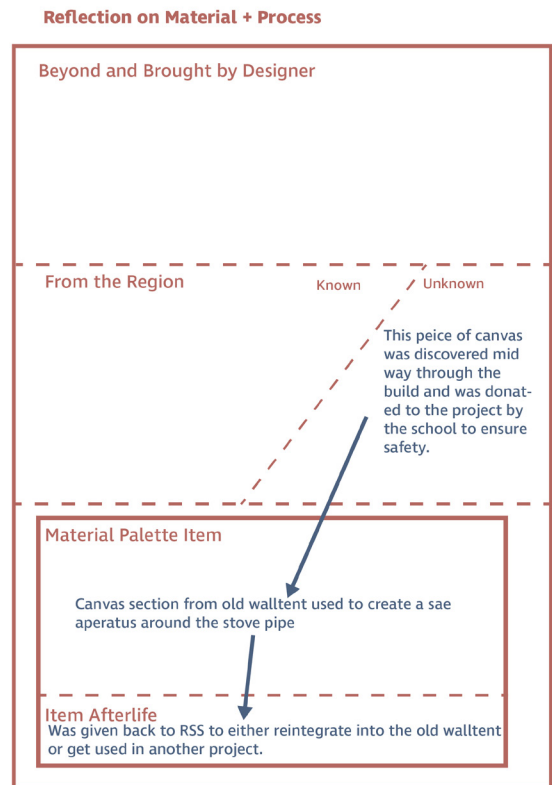
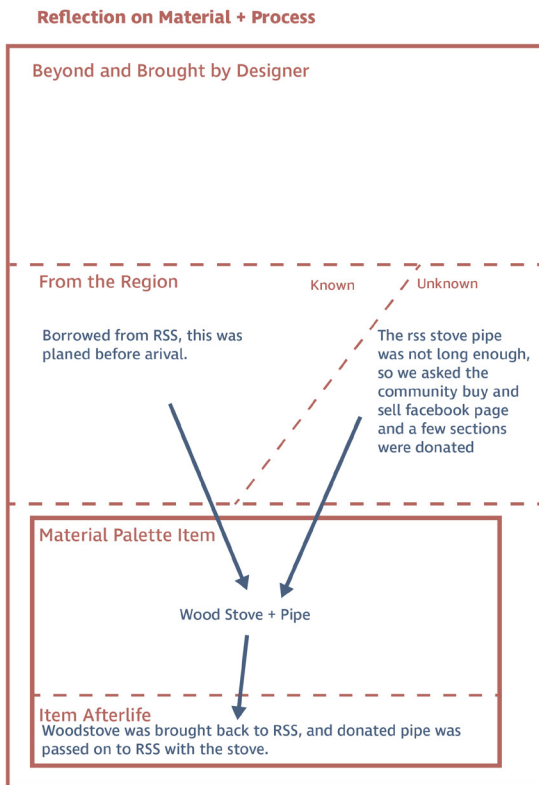
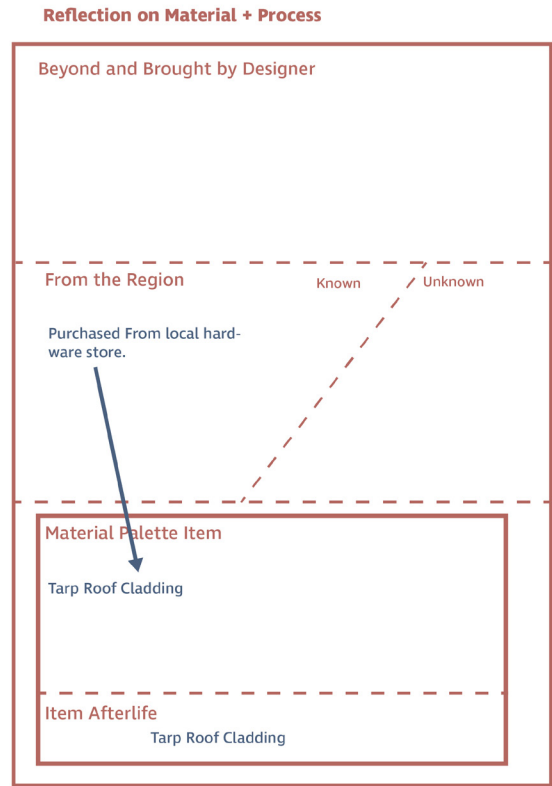
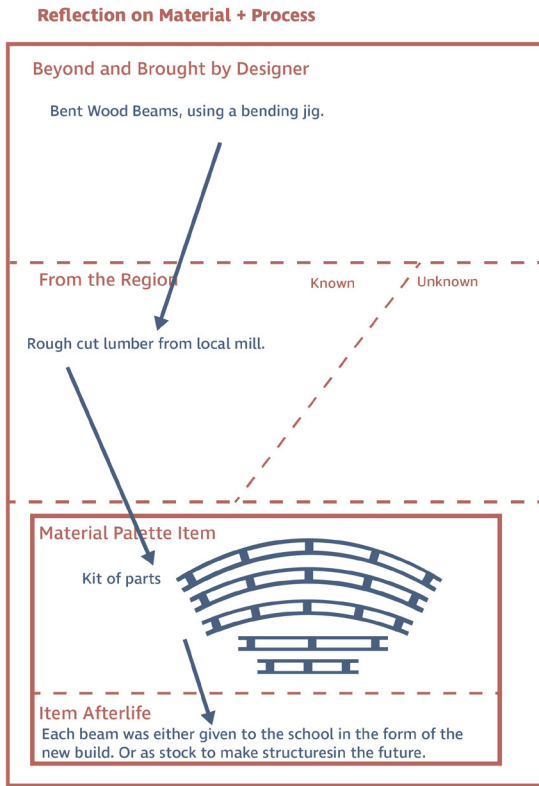
choice of materials and clarified what materials were available. In this sense, the material palette helped participants know what was available and why they were on the table in the first place.





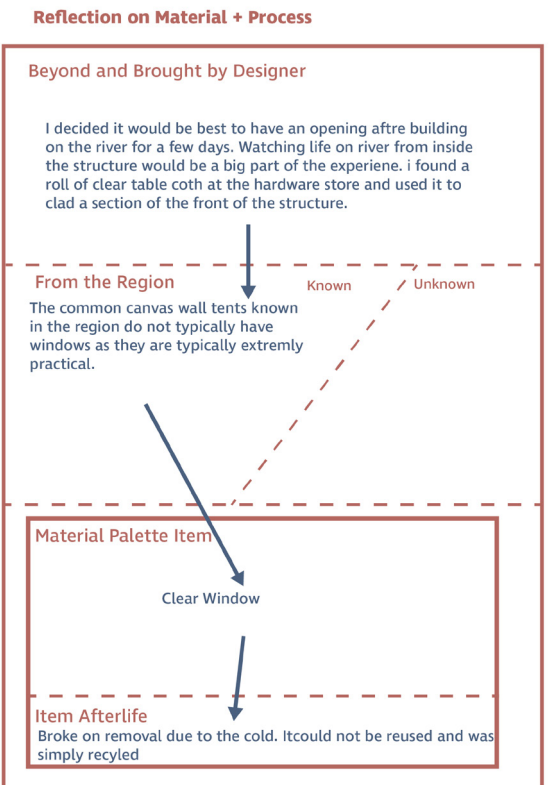
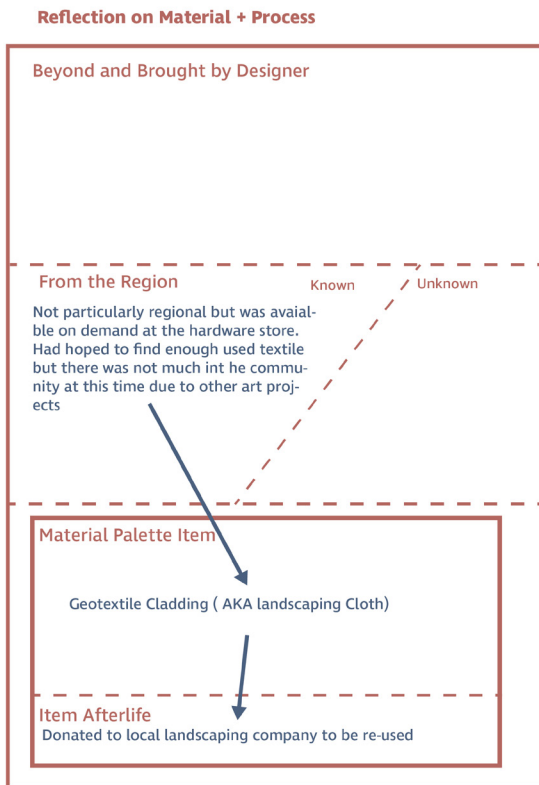
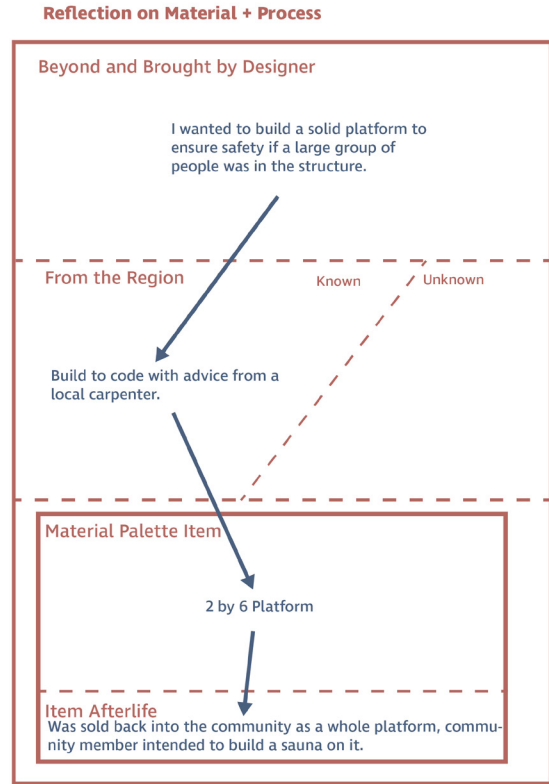
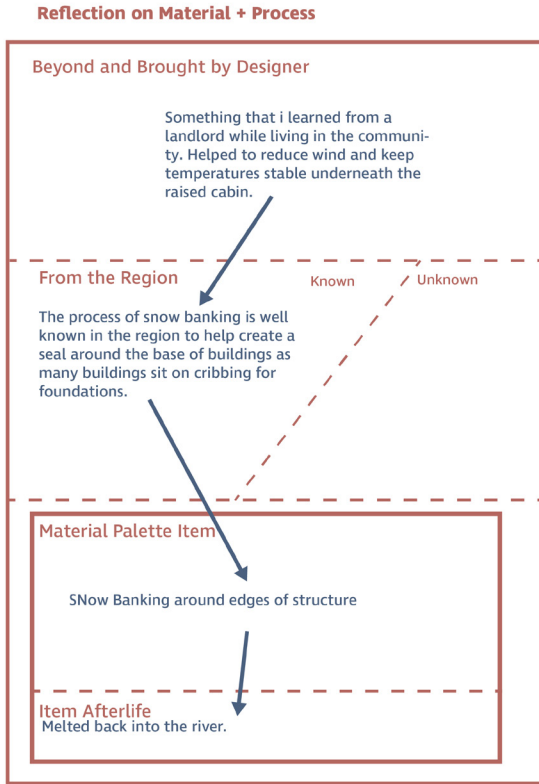
Reflection on material pathways through the material palette diagram.

In a way to further reflect upon the materials that were actually used in this project, a secondary diagram template was created to draw a path of each built element, what brought it into the project, the processes that were needed and where it ended up after the build.



Material reflection diagrams looking at the source and afterlife of different materials used.

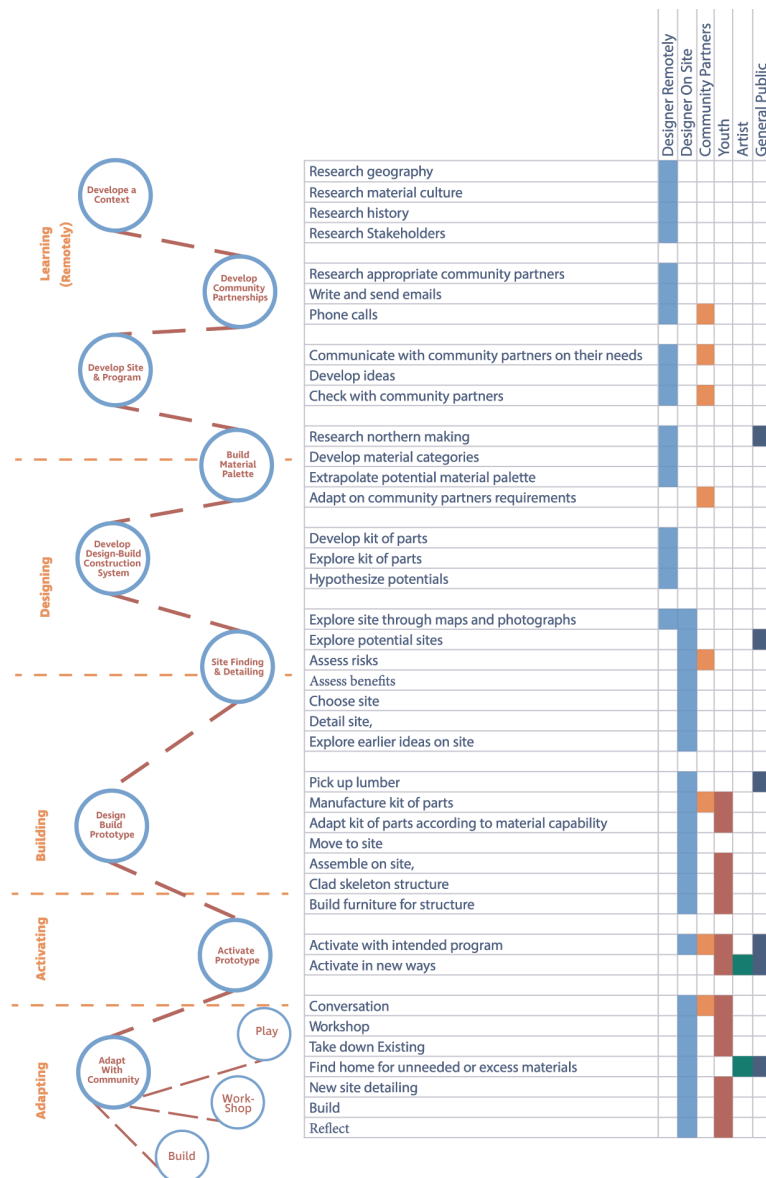




Material reflection diagrams looking at the source and afterlife of different materials used.

# My Role as Designer, Facilitator and Mentor

In reflecting on this thesis, it is essential to assess my role in each step of the process. The strategic framework outlines the critical stages of this approach and provides a path to evaluate who contributed to each section.



Stakeholder cross section diagram, reflecting on my role(blue) in regards to the roll of other stakeholders(orange, red, green, dark blue). Also diagrams which parts of the process have interactions with the other stakeholders surrounding this design-build.

The variety of roles I had to act draws to attention the need for a multidimensional approach to community work. What was my role—designer, community worker, educator, facilitator or mentor? This design-build and looking at the array of skills needed highlights the complexity required to work with communities. Working on a large portion of this thesis remotely meant that my community partners needed a high level of trust with me. The relevance of trust in this design-build asks questions about how we professionally develop trust through time, expertise, or reputation. I don't think there is a simple answer to how we should build trust with communities. For me, as a community worker, I took the avenue of partnership built upon relationships I have developed over time. With these projects came my embodied knowledge and experience in the north. I wonder if this highlights a limitation within the framework. Would it have worked as well in another community where I had less local knowledge myself? It is likely that this framework and the guiding principles acquired through this process could help ease a designer into a community of similar size, but this level of community engagement requires an investment of time before any design, prototyping or program development phase. I was able to make some accurate assumptions because I knew the town, had good community partnerships, and had already built trust.

## **Assessing Community Impact**

This project brought about community impact with the three following stakeholders: the youth involved, the school, and the general public. In this design-build project, the youth acted as my collaborators and de-

sign-build participants. This thesis was not able to assess impact through more interpretive sociological methods of surveying. As such, I assess the effects on the community through observation and prior knowledge. In many ways, I believe the youth were the benefactors of the most impact within this project. First of all, the project gave the youth an opportunity to break up the structure of their courses and learn new skills in design and building. They learned a new method to bend wood while using materials that were readily available in the community. The small school and class sizes meant that I was able to develop close relationships with youth as a mentor. Since returning to the east coast, I have been asked to skype in to classes to help youth learn modelling software.

As a community youth worker, I know the value of role models and mentorship. Often youth struggle with finishing projects, but being involved with this project allowed them to be a part of something that was not only completed but presented to the community beyond the school. The public nature of designing for an art festival brought the work of the woodshop out into public and introduced a sense of pride. As I observed with the youth on the first day of the festival, they took pride and ownership in the work. He wanted to make it better even though he was not obligated to be there. I am not sure why he stayed all day, whether it was because he was proud, because he wanted to spend time with me, or just because there was nothing better to do that day, but regardless of the youth's reasons the fact that he stayed shows the potential community impact these types of community collaborations can have. The



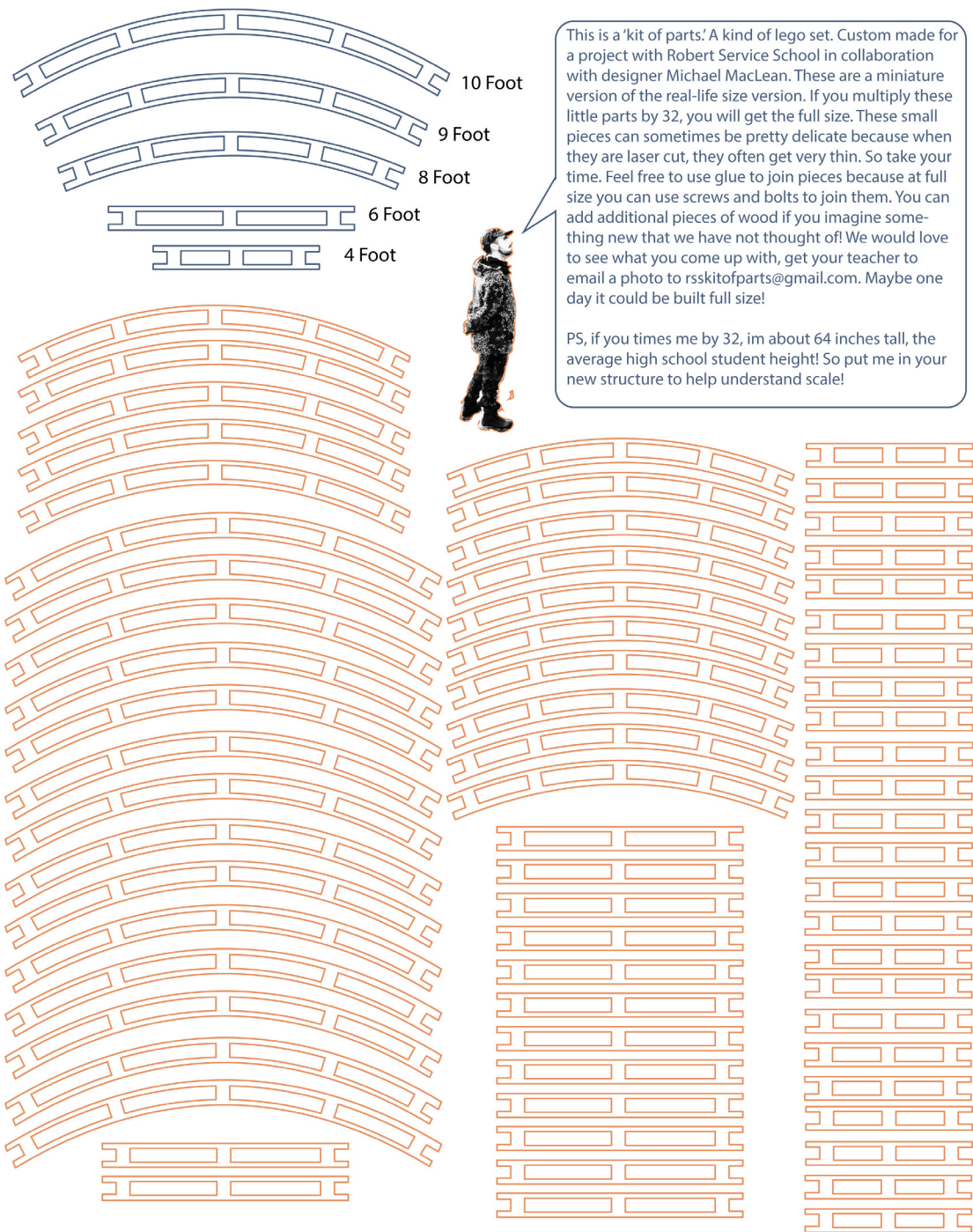
youth's participation and then the positive feedback from the community helped develop a sense of ownership over the work, and I believe it offered an encouragement for the youth to continue to work outside the classroom.

Beyond impacting the youth themselves, this project had ripples of impact in the school itself. In some ways, the school saw more value in the mentorship than the youth. I was able to help alleviate some of the pressure on the woodshop teacher by providing an extra set of hands in the wood and metal shops. Additionally, I was able to take over some of the course work by introducing design workshops and tutorials related to the design-build. In the adaptation phase of the process, we were able to expand beyond the woodshop and integrate a grade seven class to initiate some class time off campus. Workshopping the new design of an outdoor classroom brought the 1:32 scale models into the school setting. In the workshops, both the models and the full-scale structure became a tool for learning and understanding. The 1:32 version of the beams enabled recognition far quicker than a drawing or conversation. People could grasp the assembly method because the scaled parts assembled in the same way as the full-scale beams. The mono-material individual parts made it hard to discern how things came together when they were assembled, so even when in the full-scale structure, the scaled parts were helpful to demonstrate how things worked. In the workshops having both the models and the full-scale present meant the models helped to explain the full-scale structure and the full-scale beams helped to highlight the power of the scaled model.

The outdoor classroom structure that resulted from the workshops with the grade 7s was never intended to be a permanent structure. The structure was designed to activate an underused and disrespected outdoor classroom space. A one-week intensive design-build program which further developed the skills of the youth started to activate the underused space. Since returning to Dalhousie, I have had reports that there has been an increase in use by both teachers during class, and even by youth during their lunch hours. The structure, while not an enclosed space, has instituted a gathering space.

During the build phase of the outdoor classroom, the Yukon government's Department of Education was visiting RSS with one of their mobile laser cutters. Because of the small size of the Yukon's rural schools, they share larger machines like the laser cutter, and each school has these machines for a few weeks at a time. The manager of that program was excited to see that the full-scale project was developed using the laser cut scaled pieces and felt that it should be shared with the other schools. They asked me to create a file to distribute to the other schools as an example of a larger project initiated by the laser cutter.

The last level of impact was with the general public. This impact was mostly during the activation phase of the framework. The RGWP activated a space on the river further expanding the potential programming of the frozen river. Through embracing openness, the community was able to take advantage of the space in ways that I had not expected. Embracing risk of failure and openness inspired by open source movements enabled



Kit of Parts file developed for RSS and the Yukon Government department of education. Orange lines are cut out of 1/8th of an inch plywood and the blue is engraved into the wood. The engraved text acts as a prompt to the youth or as a informal guide to the teacher to start the activity.

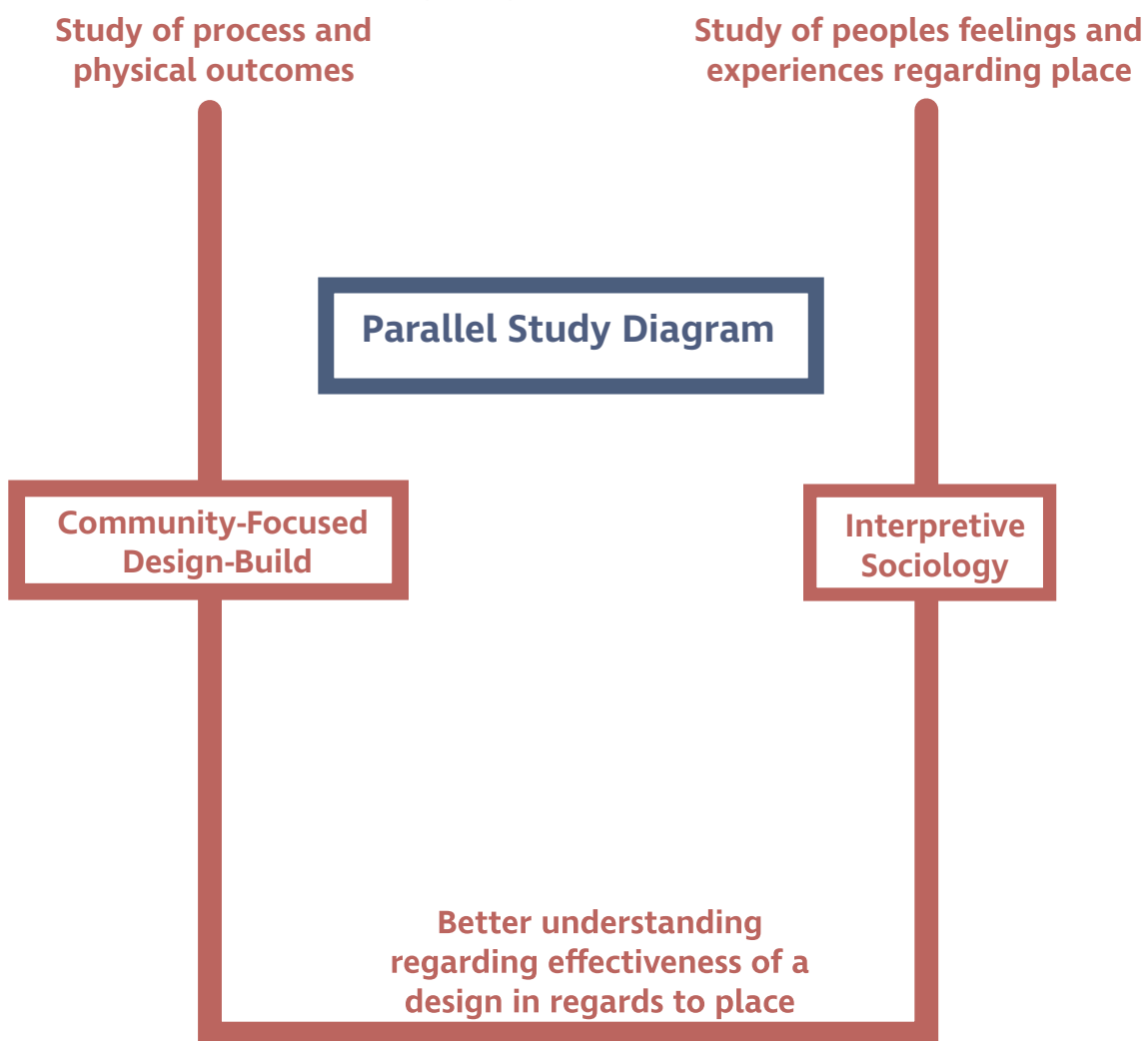
the space to expand to invite a different portion of the community, and in turn provided more opportunity to initiate conversations with members of the community I had not worked with before. Moreover, it allowed me to give back to the community by opening up the space beyond my program conceptualization. Although the RGWP was an installation in the winter art festival its initial program of gathering attempted to attract more than just the arts community. The conceptual nature of much of the art in the town has a way of polarizing the community. The conceptual artwork draws a part of the town, but another portion of the population often does not feel welcome. The practical nature of the RGWP encouraged both practical and conceptual conversations, and provided common ground between both types of visitors.

## **Possibility and Potential**

The successes, limitations and unexpected outcomes of this design-build have initiated reflection of what the process of what community-focused design-build could provide for scholarship and the professional design industry. I anticipated design-build's ability to create place-sensitive work through community participation, but where I see the future potential for the profession is in the framework's ability to act as a tool for community engagement for a bigger project. The design-build process may be a byproduct of a built thing, but a community engagement lens exposes opportunity in the process. This is where the real potential of this strategy exists. The limitation of the study of this framework highlights the potential for future scholarship in the field of design-build by looking more close-



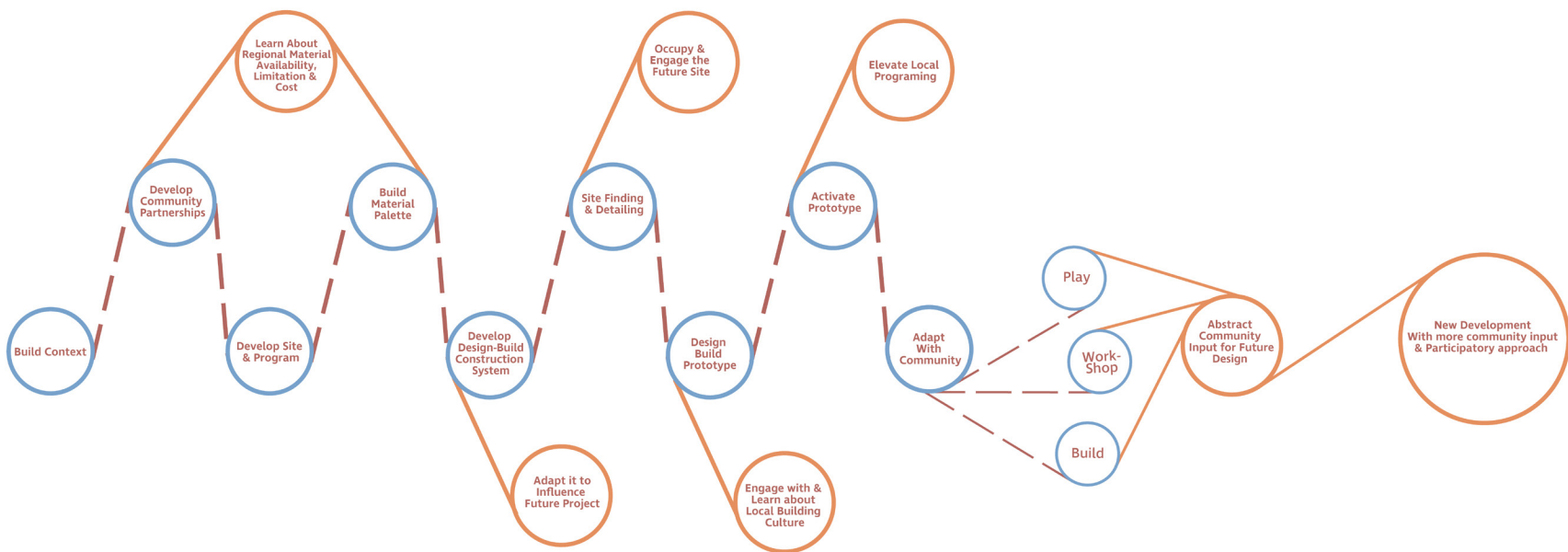
ly at the people the process intends to engage. This thesis attempted to discover where exactly the process engages participants and how that could influence design-build to make things that have a sense of place. Future scholarship on the topic should look more closely at the process, outcomes and the people involved in parallel. Could using interpretive sociological methods help us to understand how to make our designs have more impact by tapping into a sense of place through participation?



Future possibility for continued scholarship through the study of design build process, outcomes and people involved in parallel.

The level of community participation and engagement in the design-build process and utilization of the prototype both acts as evidence of this framework's success and highlights the potential for this framework as a tool for larger projects. In this temporary design-build, I sought community engagement firstly for the benefit of the community and secondly to initiate a conversation around design in the community. I was surprised at how much was possible when I embraced risk and openness. Consider then what would happen if we took all the opportunities I had to communicate with the community and instead engaged the population to influence a more significant public building to have a sense of place. An additional layer to the strategic framework diagram helps to outline where those possibilities are.

In conclusion I ask, What if a temporary design-build was used both as an opportunity to create something



Adapted strategic framework diagram, outlining the opportunities in the design build process for a professional practice to engage with a community they are working with.

for a community and also as an opportunity to engage, consult, adapt and develop *with* a community? The project would not only gain a deeper understanding of the sense of place, but it would help to establish that sense of place through activity and potentially tap into a collective potential for a larger project. The power of the process helps to develop effective teaching and engagement tools. During the research phases of the design-build, the community participants would help to develop a better understanding of regional material, availability, processes and cost.

This thesis discovered that embracing a playful approach in participatory phases of a process creates tools for understanding and reduces barriers for the community. The creation of a material palette helps to better understand, narrow, and reflect on the materials and processes in a region. By letting the process occupy space, we can embrace new ways to engage with communities, have new and unexpected conversations, and gain a deeper understanding of the environmental conditions. Initiating a temporary design-build on a future site begins an investigation with a level of closeness that would be hard to achieve with maps and site visits. Ultimately, through the activity of designing and building, we better understand and contribute to communities' collective sense of place.

This approach and design-build suggest potential avenues to engage with a given population throughout the process. This thesis proposes that the industry work closer with communities to make more place-sensitive projects and by embracing openness and risk, we can



shift the way that we approach community design work. We can use design-build to better understand, teach and engage with communities to design and build things that the community love.

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