



Land Project

Design Principles and Guidelines

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Introduction

Purpose Statement

At all scales the development should be a quiet one. It should be subordinate to and compatible with the outdoor human experience. The outdoors and wilderness areas shall remain the centre of attention - not the built form. The development shall support sharing and mutual experience. The built form shall frame views and focus the collective user experience to the outdoors. Development will be light on the land to continue to uphold DOS's main principle.





How to Use

The design principles and guidelines are presented to assist the DOS community in their mission to establish an outdoor space for student and community use. The document will discuss all important aspects of the project that are not limited to the design development of the site.

Land Purchase

This is a guide to help the users through the purchase of land and what land is best suited for their intended purposes. Where on the land is the right location to situate certain elements of the build and other developments of the experience.

Growth

We will discuss the possible growth of the facility, it is not expected that all of the elements are to be constructed immediately, the plan provides a baseline for the user to establish what should be constructed in what order.

Design

The design principles provide a breakdown of what is necessary to include within the structures and key placement of structures to allow them to be used most efficiently.

Implementation Phases

The implementation phases give a baseline for order of construction that is most systematic and what other Dalhousie societies can be “allowed” to use the site in the later phases of the plan. Allowing the facility to be “multi-purposed.”

Feasibility Study

Finally, the document provides a general breakdown of the cost of the project to allow DOS to have an approximate understanding of how much the project will cost.

Location and Context

Eastern Shore

The Site is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.

Mi'kmaq

The Eastern Shore fell within one of the seven regions of Mi'kma'ki, called Eskikewa'kik (Hodder 2018). Treaties respecting land boundaries of the Mi'kmaq but the immigration of British loyalists in the late 18th to early 19th century claimed increasing amounts of land and soon the British gave land to the Mi'kmaq as reserves, often not where previous settlements had been and placing restrictions on the Mi'kmaq people (Hanson).

Acadians

French settlers lived throughout Nova Scotia until the late 18th century when the British began the Grand Dérangement (Expulsion) of the Acadians. Some communities remained, one of which was on the Eastern Shore. Acadians and Mi'kmaq families lived together peacefully before the Expulsion.

British

When the British settlers arrived they were assigned land parcels along the Eastern Shore tended to have access to the ocean for fishing, necessary for survival due to the poor agricultural land in the area.

Landscape

The Eastern Shore is mostly made up of fishing villages and mines. The soil in the area is not very appropriate for farming. The land itself is very forested but due to weather and fires much of the rocky land is occupied by dead trees or blown over bush. This is not ideal living, which explains why the area was never very developed. The area is covered with coves, bays and small lakes making it a beautiful drive across the coast. Many of the Eastern Shore communities are located right along the coast for easy access to the water.



Image 1: CBC's Article "Mi'kmaq atlas reveals secrets behind Nova Scotia place names"

Sites

Function

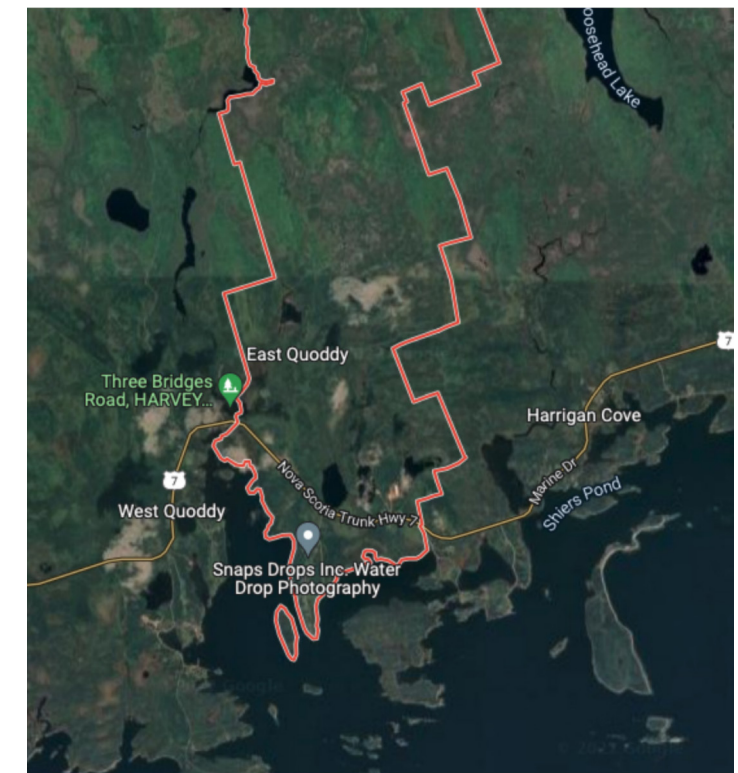
DOS has selected three parcels for the students to exam. Whether one of these parcels is to be used in the final design or not they were important in understanding what type of property DOS is looking for. The goal of the site is to provide a dwelling space for all users to be able to stay the night at the location with hopes of having hiking trails, gathering spaces and a launch for boats.

Size

The land parcel should be of a significant size, 5 or more acres is to be suggested as this allows the camp site to be set back from the waters edge to prevent any intrusion on the coastal ecology or an effect on the view from the water. A larger space allows for an opportunity to create hiking trails throughout the property.

Forest

Forested properties are much more common to find on the Eastern Shore and provide opportunities for hiking trails through the tree cover. The cover is not necessary but it is better for the camp site. With a barrier between the water and the camp, the trees will act as a shield from the harsh winds and bad weather that often hit the shore of Nova Scotia. Longterm with is good for the structure of a cabin.



Access and Circulation

Land and Water Access

Water Access

It is crucial for the property to have access to the water. The access allows for easy use of boats and ability to study coastal ecology. The “view” of the ocean is not essential to the project but can aid the design principles later discussed.

Boat Storage

One of DOS's main goals in the future is to own surfboards and kayaks for the students to use but there is no place on campus that these can be stored. Having a site with access to the water provides the society with a space to store the boats were they can be used. Instead of just an off campus facility in which they have to move the boats from.

Road Access

The site must also have road access, many of the visitors will be driving in from Halifax and will need to be able to drive into site from the road. Enough space for parking is also crucial as many of these small villages on the Eastern Shore do not have wide enough roads from on road parking.

Reducing Access Limitations

The road access is also important because visitors should not have to go through someone else's property to get to site. Direct road access prevents any chance of intruding on land that might be owned by someone else or land which should remain undisturbed.



Trails and Site Circulation

Trails

Adding trail paths throughout the site will increase the use of the site, helps the promotion of growth and encourages people to come to the site to go for a hike. Hiking trails are usually taken to explore the land and be rewarded with a view. It is important to weave the trail paths throughout the site to give the traveler the opportunity to explore the different elements found within the site.

Trail Location

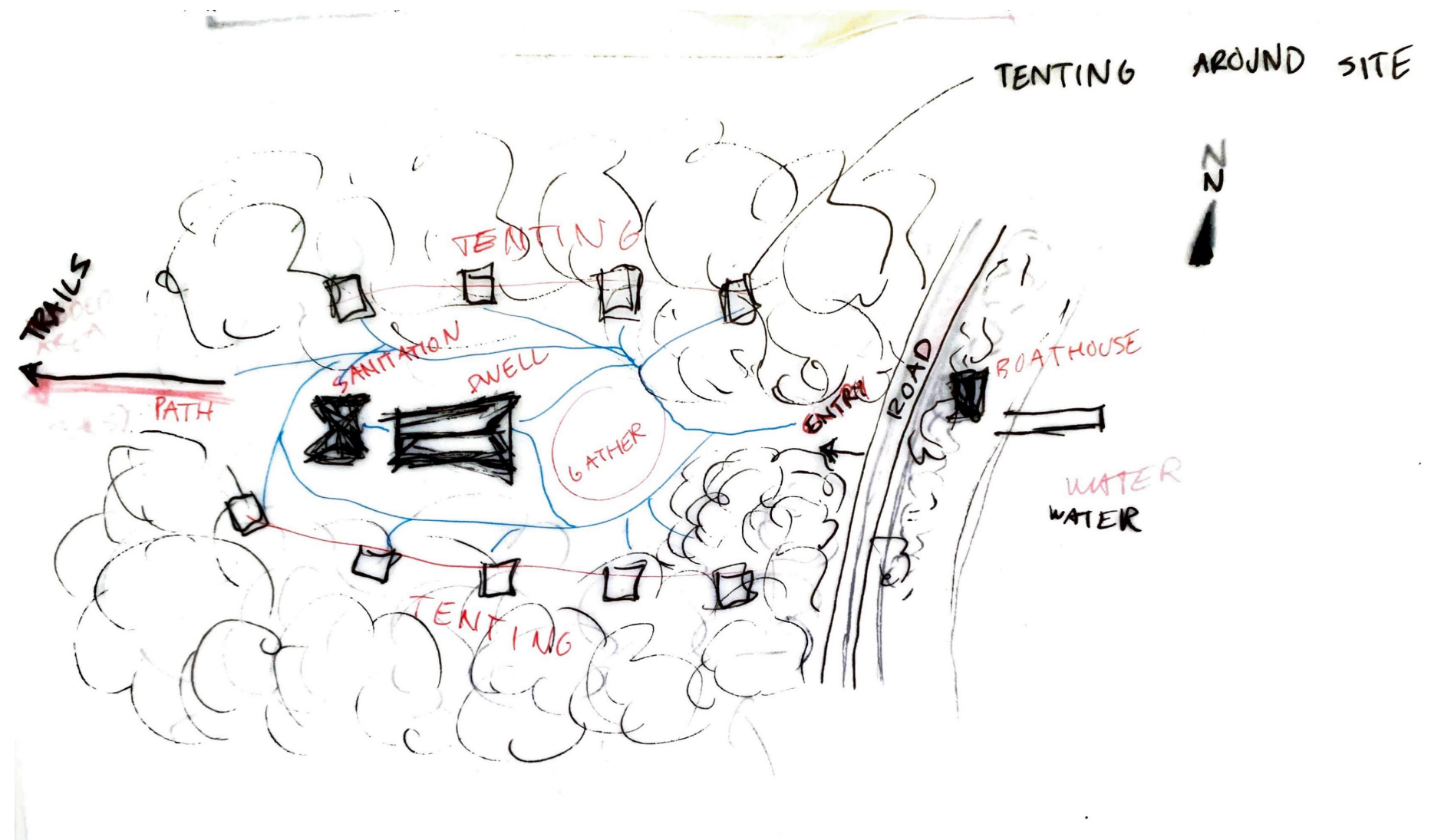
The location of the trail must have a minimal effect on the environment around it and it should be easy to maintain over time. Usually it is best to create a rest spot or opening where the traveler can experience the view or the most interesting part of the site, such as cliffs or lakes. The trail must be careful of ridge lines, bluffs or cliffs, and stream bottoms.

Trail Perks

In the case of the DOS proposal it will most likely be an ocean view. Placing these breaks at the peak of a hill will encourage people to rest and enjoy the journey before they can continue on or take a break and return back. Looped trails are often better than dead ends because it allows the traveler to experience something new along the whole journey instead of having to back track to get all the way back to camp or their cars. Having a path lead down to the water allows for people to enjoy the view and it also promoted research of the coastline.

Site Circulation

Connecting all elements of the site together is very important for site circulation. In most cases a boat storage will be very close to the water whereas the camp will be set back within the trees. Connecting these spaces together and to the entrance of the site is important for creating good circulation.



Growth and Development

Site Size

It is not expected that the society build all of the necessary resources on the site as soon as possible. The plan for the site is to include the essentials to the site use and also have the opportunity to expand over the years when new resources or ideas become available. A larger site is suggested as it allows for more opportunity for growth.

Project Essentials

The main essentials for the project include storage: a space for DOS to keep some of the gear library such as boats or other equipment to be used on the water. As mentioned there is not space on campus for this storage so this is essential to have on the site. Dwelling is the next most important space to have on the site. This does not necessarily mean a permanent building. A space for tents and tent pads to be assembled is important to the development of the site. It allows a space for students and other visitors to stay over night. An outdoor gathering space or fire pit provides a space for visitors to prepare and cook food. Later in the development a cabin or hut can be added for a more comfortable stay and a space for storage, indoor food preparation and tables for serving. The cabin provides students with the opportunity to stay throughout the winter months, it shelters users from the harsh winter winds and snow.

Site Occupancy

The site is currently set up for groups of 10 or so people. If the opportunity presents itself and more space is needed, the site can continue to develop to meet the need for more students to come and visit at the same time.



Design

Gathering

Gathering

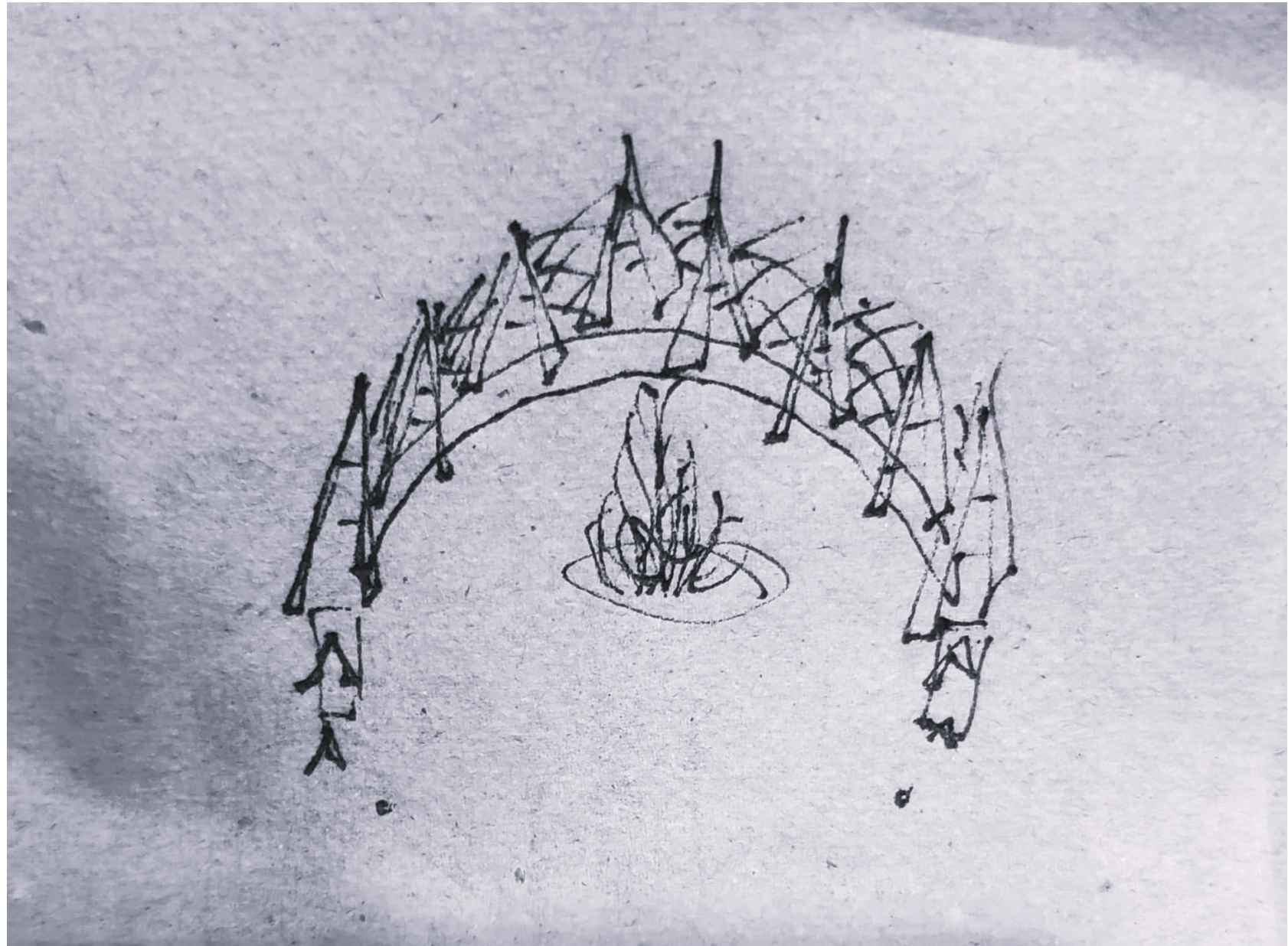
A space of gathering creates a community environment between the campers and other individuals using the site. This is a space that can be both interior and/or exterior and should be adjusted to be inclusive of all those who wish to join the gathering. The space is meant to create bonds and connect people together as a group.

Circular Shape

A gathering space should be circular or u-shaped. These shapes are best for gatherings because each person in the same distance from the center. Each person is equal with one another. The circular shape can be used for spaces such as fire pits or tables. Making everyone feel equal when sharing stories by the fire or while everyone is enjoying a meal.

U-Shape

A u-shape creates the same idea but on the open end it allows for an object for the participants to interact with. Such as a fireplace or hearth. Which is most commonly known as the centre of the home. Significant furnishings such as the hearth are meant to bring people together, so these object promote the same affect that the shape of the gathering does as well.



Dwelling

Tent Pad Location

Dwelling can take two different form at the campsite. Tents can be brought in by visitors and pitched on designated tent pads to keep them off the ground. This provides a dry space to place them and ensures that there is no overgrowth on the tenting location. This is easier upkeep and “stops” the need for a lengthy setup when the campers arrive.

Tent Pad Layout

Tent pads are kept in groups to allow everyone easy access to the same resources. The tent pads can be placed in groups in multiple locations throughout the site. The collection of tent pads should have equal access to gathering spaces, sanitation such as washrooms or showers and spaces to cook/eat.

Cabin 1st Storey

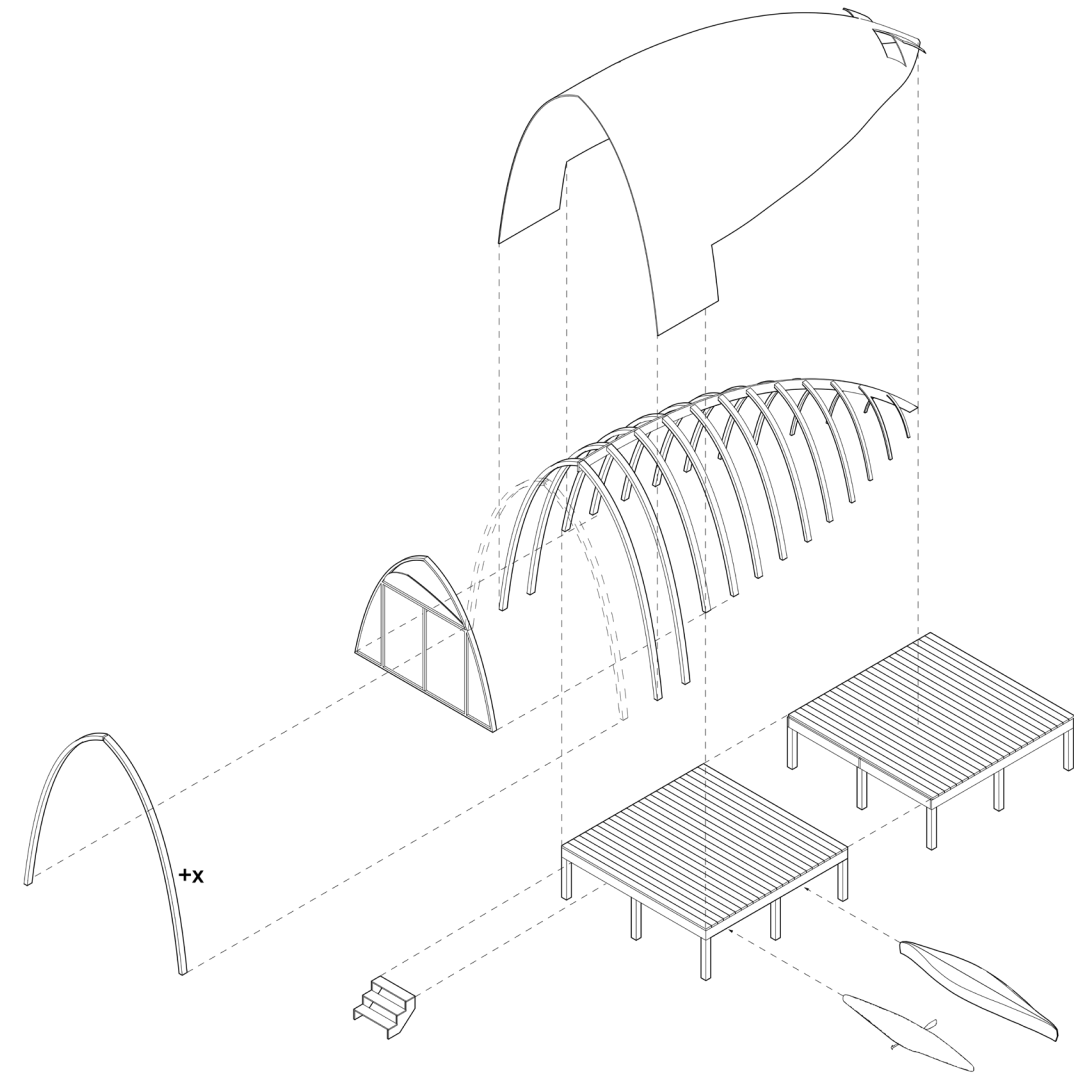
The second form of dwelling is a more permanent build. A cabin or hut can be constructed on site. Multiple cabins can be constructed depending upon the interest but only one is necessary to fit up to 10/12 people. Cabins should have 2 storeys. The bottom or ground level of the cabin will be storage space for some of the equipment, kitchen or cabinet space for preparing food, and seating to eat food or connect. These are essential elements that a cabin needs, but additional aspects like a fireplace or hearth can be added to create gathering inside.

Cabin 2nd Storey

On the second storey there will be an open space for sleeping. Bunk beds or mattresses can be used or installed but these will limit the amount of users in the cabin. If guests are to sleep in the loft or upper storey space with just their sleeping bags it allows for a wider ranger of visitors. If there is a larger group, members can squeeze together to fit a much larger group. But if a smaller group is visiting there is much more space for people to stretch out and claim.

Windows

Windows in the dwelling allow the visitors to capture the view and operable windows provide good ventilation into the space.



Storage

Boathouse

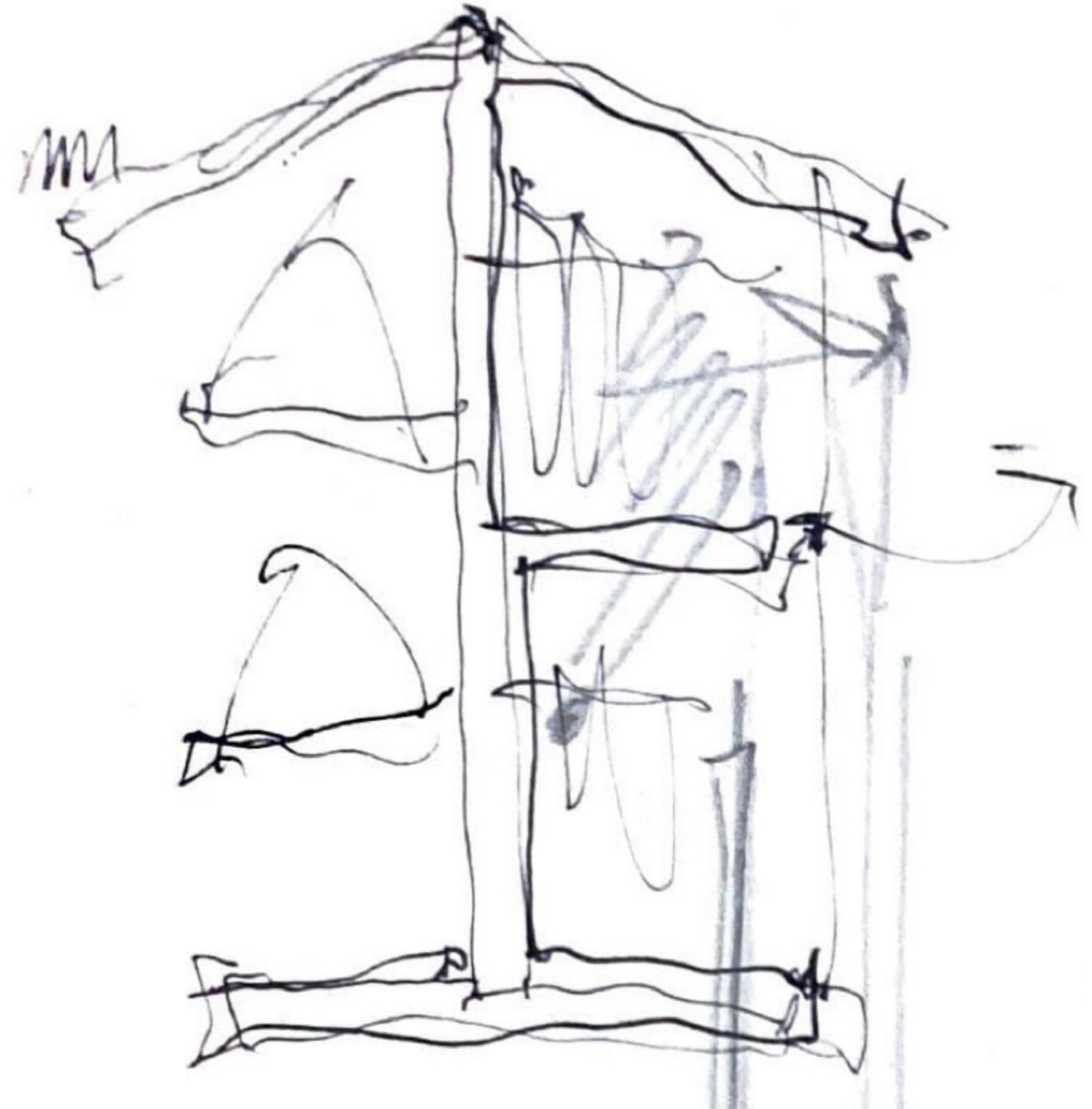
The boat house or boat storage will be the primary location for the gear library on site. The boat storage is located right off of the water to make it easier for people to move their boats, kayaks and surfboards into the water without having to walk them all the way down a trail or path. A driveway should lead down to the boat storage "as that" cars can easily access the storage and individuals do not have to portage the boats through the site to get to the water access.

Water Activity Storage

Storage "shelves" for the boats are essential to have in the boat storage. Usually sheltered or contained within a structure. A separate indoor space attached or close to the boat storage should store gear such as life jackets, whistles and other water related gear. It is more functional to have the water related gear stored here instead of back at the campsite. It ensures people will not forget something before they take off and they are more inclined to use the gear if it is easily accessible.

Basic Storage

Non-water related storage for camping, cross country skiing and other such activities should be kept at the camp site. After the construction of a closed dwelling is complete there should be cabinet space for dried foods, Hooks or under the bench storage can be located inside for hiking and camping gear. Finally there can be outdoor storage to hang equipment for some of the outdoor activities during any season.



Sanitation

Showers

Cleanliness on site is very important. It is important to keep yourself clean, shower facilities are a component that can be added to site if we begin to see groups staying on site for longer extended periods of time. This provides a space that people can use their cleaning products without affecting the ocean or lake water.

Washrooms

A set of washrooms or better known as an outhouse is important to have installed early in the project. The outhouse should be located close to the dwellings on site but it should be located downwind and slightly out of the way to prevent the smell from lingering too closely to sleeping quarters and foot preparation.

Water

Water for cooking and drinking is extremely important. Water from the ocean or rivers can be used for showering but it cannot be used in food preparation or drinking. It can also be difficult to bring out enough water for drinking that will last the whole trip. Including a wood stove in an indoor facility can encourage good sanitation as lake water can be boiled into water that is safe enough to consume. A sink can be installed to allow individuals to clean their dishes. If dishes are not kept clean it creates mess in the shared spaces and a smell that might attract animals to the site.

Food Waste

Keeping everything sanitary is a job that only the guests can complete, they must be responsible for bringing any food waste with them and washing up during or after. As there is no guarantee that everyone will follow the rules of camping there is a possibility of creating a food disposal or compost somewhere separate from the main campsite. This is a phase that might come later in the project as this compost could be used to help grow a garden. This implementation would have to occur when the site is popular enough for visitors to care for it weekly or someone is sent to monitor services such as this.



Source: iStock

Passive Mechanical

Passive Ventilation

Mechanical systems need a lot of maintenance and would not be easy to keep in good conditions on a campsite but there was passive design principles that can create the same affects without any maintenance. A cabin can become hot and stuffy throughout the summer months, by providing the cabin with functional windows it allows for air to flow throughout the facility and it cools the interior of the space passively.

Solar Orientation

In the winter months, it is the opposite. The cabin or tent spaces can be extremely cold especially in Nova Scotia because of the harsh winter storms. By incorporating solar orientation into the plan of the dwelling placements, the sun can be used to heat the spaces below. If windows are placed facing the east and west there can be direct sunlight within the cabin throughout the day.

Wind Shelter

Additionally, making sure the dwellings are pushed back deep enough within the tree cover allows the tree to be used as a shelter from the strong winds that often run up and down the coast. This stops the dwellings with interfering with the coastal ecology but it is better for the shelter to be pushed further back into the tree-line.



Fresh Water Collection

Water Collection Source

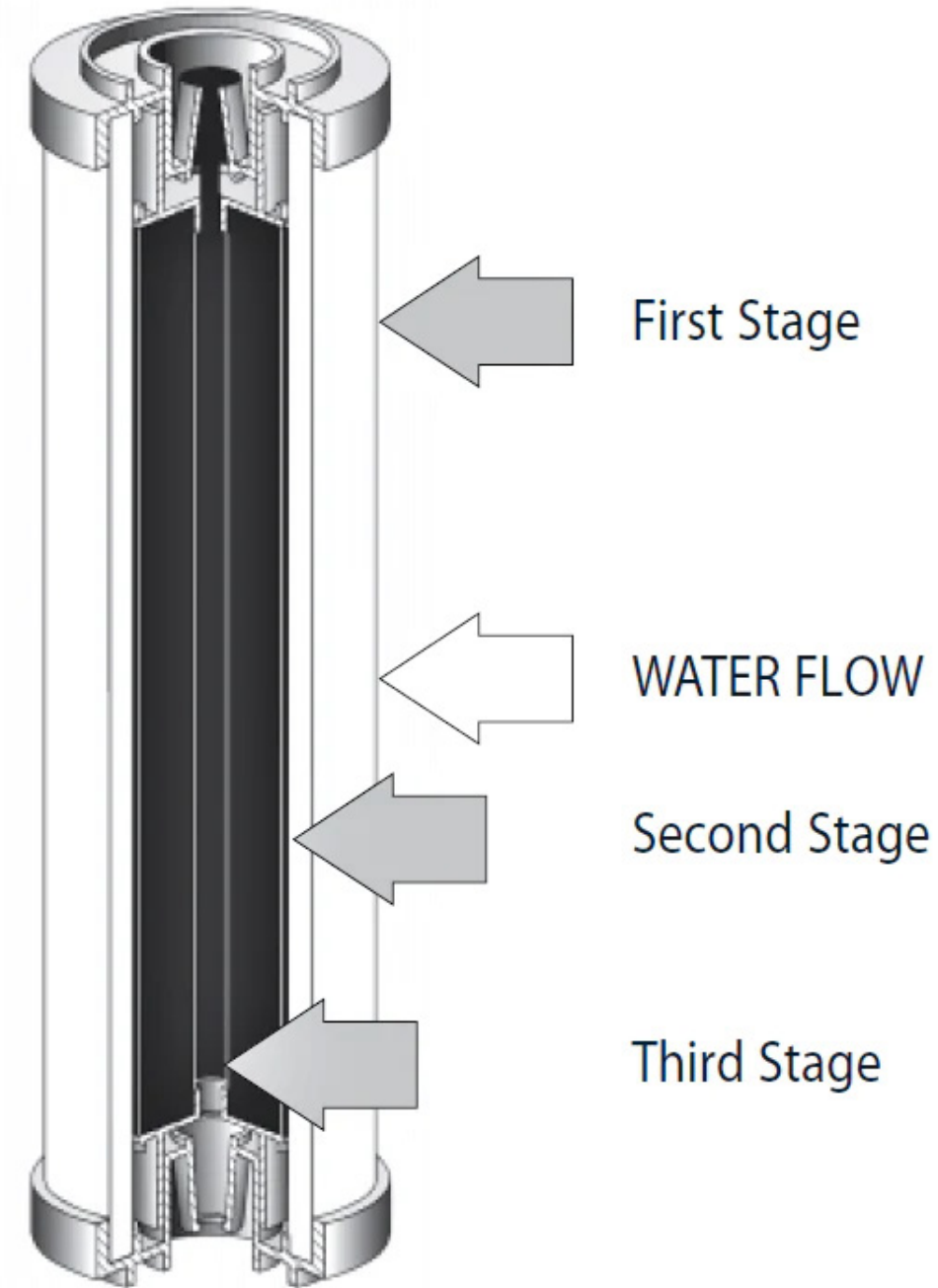
The best fresh water collection that do not require any additional system installation on site would be collection of lake water, collection of dew through long grass or collection of rain water.

Water Collection Type

Clothes can be used to capture the water and then “wrung” clean into a pot to be sanitized. A firepit outside or the wood stove within the cabin or hut is perfect for boiling the water for the correct amount of time till it is sanitary enough to drink.

Water Collection Systems

If the facility wishes to include a fresh water collection system, they can install a rain water barrel that can collect the water that ends up in the gutters of the cabin. Large ceramic water filters can be used to clean out the rain water to remove bacteria but boiling the water on the wood stove might be necessary to deal with any chance of viruses



Source: Fresh Water Systems.com

Implementation

Building Phases

Phase One

The most essential parts of the site development are an entrance into the site, the gear storage for larger supplies. A space for overnight dwelling, an outdoor gathering space with a fire for cooking and community building and trails to connect the three main components. The initial construction must contain these essential elements, this is the base for which the rest of the spaces can be built off of and they can easily be developed over time to include more space and amenities. Since the one of the main reasons the site will be chosen in for storage of larger boats and gear for DOS the boat house or boat storage is essential in the build. This should be included into the first stage. The gathering space and area for some sort of dwelling most likely a cleared space for tents or tent pads if work permits. This will provide space for cooking and sleeping for those who want to experience the site early or even for those who are there to assemble the boat storage.

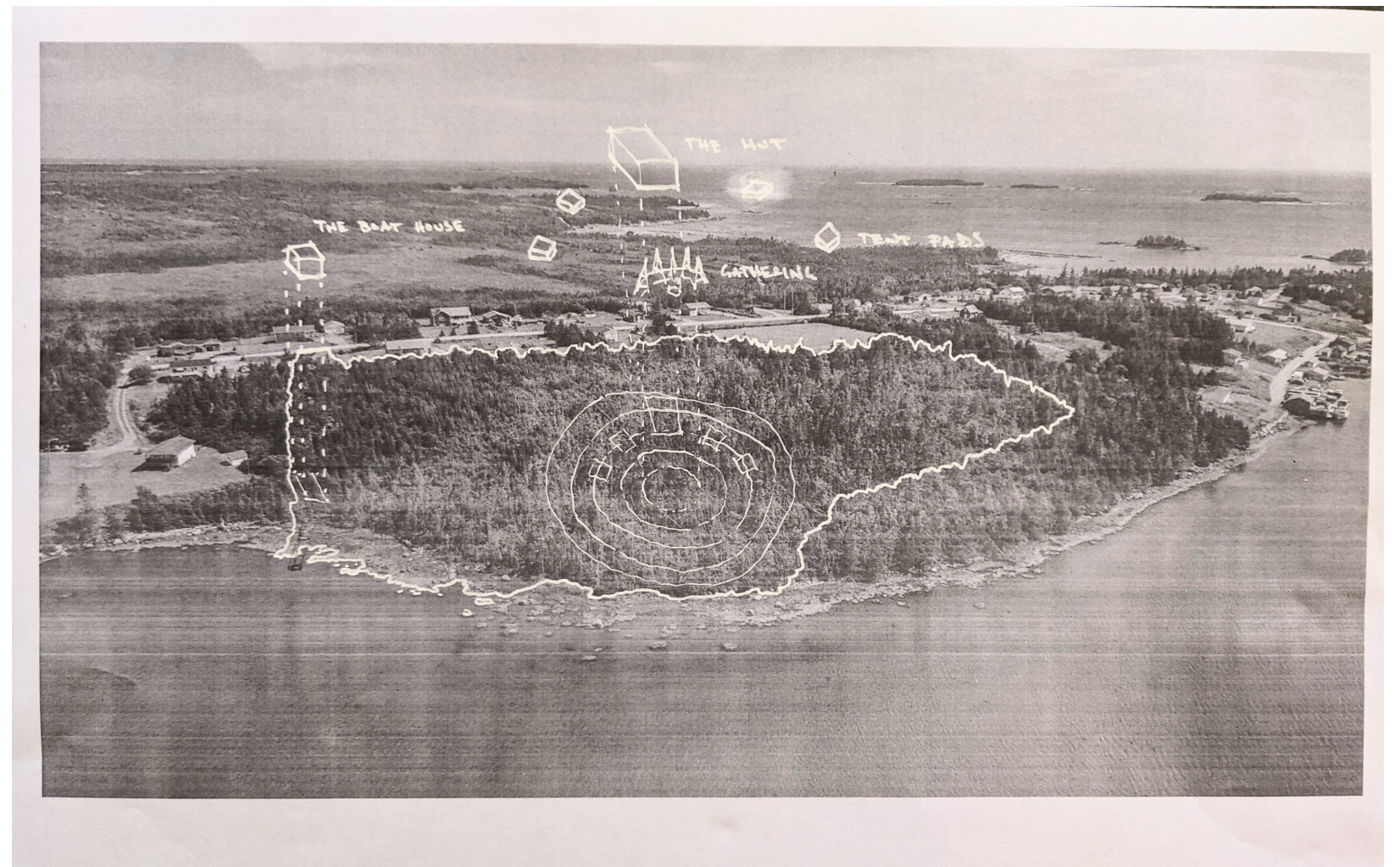
Phase Two

Following these initial developments, these spaces can be upgraded and a cabin or hut can be placed on the site. Providing the opportunity to use the space comfortably during all seasons and allows for a more secure storage space for objects that do not go in the boat storage. Trails and other paths can be developed within this time to allow better use of the whole site.

Span of Phases

Additionally when the site becomes popular more camps or additional cabins can be added. This is not necessary for the original development but maybe 10 years down the line this is something that can be developed to allow more users to come to the site.

As a side note: if there is any additional use of the site. Facilities for those can be added much later into the building phase plan.



Additional Use

The initial intention of the DOS off-campus site is to have a space to store the larger objects from the gear library and offer a space off campus for people who love the outdoors to be able to use freely.

Dalhousie

Later on in the development the site can also be used by other societies and departments of the school. Dalhousie has a number of projects that participate in labs and off campus research. Such as the Oceanography department. The site could offer a space from these departments to collect, sample and/ or test some of their studies on the ocean waters, ecology and ecosystems in the area. The campsite would allow them space to store their supplies and stay over night if they need to be on site for multiple days. The space can be shared by those who are there for school and those who are there for pleasure. Later on in the development phases there is a possibility to add additional spaces or storage for some of the departments if they would like to be separated by those who are on site for pleasure.



Source: Dalhousie University, Oceanography Department

Feasibility Study



Cost Analysis

This is a cost breakdown for some of the components on site. This cost analysis does not include the purchasing of the site.

Tent Platforms \$100 each - \$300 total

An average size tent can hold up to about 4 people. This initial document is setup for a group of 10 to 12. Therefore about 3 tent platforms would be needed for the initial project.

Ceramic Water Filter \$100 each

Compost Toilet \$1300 each

Storage 6'x 8' \$1200 each

Cabins

2 Person Cabin- 24' x 24' \$54,632 each

These estimations are based off a studio space that can accommodate 2 people. This is usually about 600sq ft.

4 Person Cabin- 24' x 28' \$60,937 each

These estimations are based off a one bedroom space that can accommodate 4 people. This is usually 700sq ft.

The estimates for the cabin and storage sizes are based off of a pre-constructed cabin setup from a specific site. This number is most likely reduced if the cabin and storage is built on-site with lumber from the store. Pre-constructed can be much more expensive but easier to install.

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Glossary



Bluffs- sand or rock that has been pushed back to create a cliff like face from the erosion of water

Ecology- The study of the environment

Gear Libaray- All amenities owned by DOS this can include but are not limited to, pots or pans, kayaks or surfboards, and backpacks

Hearth- Usually a fireplace or heated element for cooking. Architecturally the hearth is the heart of the home

Parcel- A plot of land

Passive- A component in the project being achieved without the use of a mechanical or electrical system.

Portage- Carrying a canoe across land, typically carried above the head with the help of multiple people

Ridge Lines- A peak in a landscape that usually spans a large distance, that dips off on either side

Stream Bottoms- The deepest part of the stream, trails can go through streams but the moisture and water can cause the trail in the surrounding area to be muddy