

Project Deliverable B: Need Identification and Problem Statement

GNG 1103 – Engineering Design

Faculty of Engineering – University of Ottawa

Introduction

The Algonquins of Barriere Lake, are a small community made up of 791 members, in the South-western part of Quebec. This community runs entirely off the main power grid, and lack access to supermarkets or clean drinking water. This means that they must either make long trips to the closest grocery store or market, or they can gather what they can from the land that they live on (ie, hunting, and harvesting). Unfortunately since these methods take a greater amount of time and effort, many of their meals take an equally long period of time. The goal for this project is to ease their process of gathering fruits and vegetables and thereby ease their overall process of meal preparation, by designing a greenhouse for growing such produce.

Needs List By Importance

The following is a list of needs that the client brought forward during our first interaction with them. The client brought up many concerns about the greenhouse being self-sustainable/ self-sufficient as far as the maintenance of the building and the crops present. This was due to the lack of power that the community possesses to run a filtration system as well as the greenhouse. The amount of time allocated to maintaining the greenhouse should be minimal and simple to understand and perform.

Another main concern was for the cost of the greenhouse; although the budget for each greenhouse is \$500, it was made clear that the more affordable the greenhouse is, the better. Due to the restraints on the size of the greenhouse the cost should not be a large issue to deal with. There are ways to use the tools that are already present to create what is needed and asked for.

Lastly, although this need was not ranked high on our end, it was made clear that the safety of those who use it, as well as the wildlife and children that live around this building should be taken into account. The most simple way of doing this, is by using a straightforward an easy design that would also make it easier to use. This greenhouse needs to be able to withstand the multitudes of weather that this community faces, which also means that it needs to be durable.

Number	Need	Importance
1	To run through at least 3 of the seasons	5
2	Self-sustainable	5
3	Protect from wild animals	3
4	Low cost	3
5	Easy to maintain, and use	4
6	Modular(Max 4x8, high enough to stand in)	4

Problem Statement

The community of the Algonquins of Barriere Lake are in need of a safe, self-sustaining and affordable greenhouse that can provide produce for an extended amount of time, throughout the year.