Section B_Construction Team

Needs Identification and Problem Statement

The client is looking for a greenhouse with a budget of $250 to feed around 50 people on a small reserve in Quebec. They are looking to grow hearty foods year round, even during the harsh winters. With no running water or access to electricity, the client is looking for an alternative method of retrieving water to provide for the crops. They are wanting a durable material, they have not specified a single material and are open to the team's ideas.

Community Information:

- Built on a small reserve (59 acres)
    - No running water or electricity
    - The ground is made of very fine sand mixed with forest surrounding
    - Gas is very expensive
    - Growing period is very short
        - Around a 2 hour drive for groceries
- Most cabins are made of logs
- Community of around 50 people

Materials (specified):

- Winter(cold) proof (-30)
- Wind proof
- For sand ground
- Could keep fresh foods
- Floor?
- Keeps bugs and mice out
- Gutter
- Water collection method, Filtration
- Elevation?
- Keep intruders out
- 10x15

Information needed:

- Precipitation, Rain data
- Temperature data
- Consumption of vegetables and water

Materials we could use:

- Wood
- P.V.C. Pipe
- G. steel
- Branches?
- Recycled materials (plastic bottle, CD case, tires, etc)

Materials provided:

- Solar panels
- Batteries
- Arduino
- Storage tank?

Problem Statement:

With its harsh winters and remote location, the Airport Community reserve finds it very difficult to grow and keep fresh crops year round. They are looking for a low cost, sustainable greenhouse to implement into their community and provide a reliable source to maintain their crops. The greenhouse must be lightweight and easy to carry and assemble since it must be delivered to the community.

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