

Project Deliverable B: Need Identification and Problem Statement

GNG1103 - Solar I

Introduction

This document outlines the needs that client Sandra Cocea has for the building of the shed and the wiring of the solar electricity circuits running throughout the shed. By empathizing with the client, her problems and desires are better understood, which will aid in generating a problem statement. However, before generating the problem statement, the client's needs will be translated accordingly and will be organized and ranked based on their importance. After prioritization, the problem statement may be generated, incorporating all the aspects of most importance, which will aid to build future solutions.

Briefing

The client, Sandra Cocea who is a counselor for the VAW Program at the Eastern Ottawa Resource Centre, is aware that there are women and children who are looking for a temporary place to stay while they are relocated. There is a shortage of these homes in Ottawa and the client would like the teams at the University to build and prototype some solutions. The solutions that the University provides must follow a certain set of standards, including the capacity of people which the shelter needs to hold, and the number of devices in the house that run on electricity. She specifies that the living space must be able to accommodate one person for a two month period, and that there must be outlets for chargers on the walls. She also stressed that the shed should have a central heating system, and also placed suggested features such as a small fridge, a TV, and lights. Her preferred method of energy would be one that does not leave a carbon footprint, such as a solar powered structure, and also indicated that she would prefer to incorporate a system in which excess energy can be stored for future usage. A kitchen, bathroom, and bedroom will also be included in the shelter, and the shelter must be built with precautions in mind to ensure it will be childsafe. To improve the quality of life, windows need to be added, and the structure should be handicap friendly. According to the needs of the client, the shed should be easily transportable and should be assembled and disassembled with little effort, making it optimizable for relocation.

Needs (5 = Very High Priority, 1 = Low Priority)

General Tasks

- Client needs a viable temporary housing option for women and children who need a place to stay. [5]
- Safe living space to accommodate 1 person for approximately 2 months at a time[5]
- Includes kitchen, bathroom, bedroom (For full scale project) [4]

Power

- House powered with no carbon footprint. [5]
- Central Heating [5]
- House contains TV [2], small fridge [4], lights [5], etc.
- Outlets for chargers [4]
- Excess power storages to be possibly sold or kept for later uses [4]
- Shareable energy [2]

Structure

- Needs to be easily assembled and disassembled [5]
- Windows required [5]
- Durable (optimally no repairs needed) [3]
- Storage space required [3]

Living Conditions

- Single bed [5]
- Childsafe [5]
- Bed must be elevated [4]
- Separate bed for baby if necessary [3]
- Handicap friendly [2]

Problem Statement

To design a net zero modular house that can temporarily house a small number of people (including children) and can be easily assembled and disassembled in order to allow it to be transported easily and efficiently while also meeting safety standards.

Conclusion

According to Sandra Cocea, the shed must be built to house 1 person for approximately 1-2 months. With the needs of the individuals being kept in mind, our goal is to provide them with a viable living space, consisting of everyday essentials, such as a working heating system, lights, a fridge, and a bed. However, we are hoping to provide other appliances such as a TV, extra storage space, and outlets for chargers to improve the overall living quality of the individual. After compiling a list of needs for the client, we have developed a better understanding of the situation they're in, allowing us to generate more relevant and precise solutions.