**GNG 1103 – Engineering Design Project Deliverable B**

**Need Identification and Problem Statement**

**Deliverable B**

**Group #12**

John Kenny 300008709

Shehryar Malik 300005338

Victor Cheung 300027309

Cameron Meyers 300011075

**Introduction:**

The purpose of this project is to improve a hydroponics system for our clients. This hydroponics system is intended to educate children about entrepreneurship. It should be able to successfully grows plants without soil. The three main parts that need to be improved are the reservoir, the size, and the branding. Many other avenues for improvement also exist including cost and vegetation yield.

**3 Main Client Needs:**

Portability , Size and Branding.

**Need Identification:**

Our client has requested that we build a hydroponic system with the following needs

|  |  |
| --- | --- |
| **Customer Statement** | **Interpreted Need** |
| I don't want to pay too much. | The hydroponics system needs to be low cost and inexpensive to maintain. |
| I need it to fit inside an elevator | The system needs to have proper dimensions allowing it to be the right fit for the clients surroundings.(portable) |
| I need it to be easier to reach the higher heights of the hydroponics system | Adjustable height to allow anyone to be able to access the system |
| The plants die to dehydration over a long break. | The reservoir system needs to be automated |
| The plants die when the janitor suddenly shut off the hydroponics system. | The hydroponics system needs a fail-safe that can detect when it is suddenly shut off. |
| The hydroponics system needs space for sponsors/branding. | There needs to be space for branding. |
| The plants had a pest infestation. | The hydroponics system needs to be easily accessible for cleaning. |
| The hydroponics system needs a high vegetation yield. | The plant spacing could be more compact and efficient. |

|  |  |  |
| --- | --- | --- |
| **Number** | **Need** | **Importance(1-5, where 5 is most important)** |
| **1** | The hydroponics system needs to be low cost | 3 |
| **2** | The system needs to have proper dimensions allowing it to be the right fit for the clients surroundings.(portable) | 5 |
| **3** | Adjustable height to allow anyone to be able to access the system | 4 |
| **4** | The reservoir system needs to be automated | 3 |
| **5** | The hydroponics system needs a fail-safe that can detect when it is suddenly shut off. | 3 |
| **6** | There needs to be space for branding. | 5 |
| **7** | The hydroponics system needs to be easily accessible for cleaning. | 3 |
| **8** | The plant spacing could be more compact and efficient. | 5 |

**Problem Statement**

Our clients need to improve their hydroponics system capable of educating children about entrepreneurship. The hydroponics system should be portable and easily accessible, with branding space, and it needs an improved reservoir system that can sustain itself over long breaks.

**Conclusion**

The following report lays out the interpreted needs from the customers statements. The needs mainly address portability, space for branding, size, overall efficiency, etc.