Project Deliverable G: **Prototype II and Customer Feedback**
GNG 1103 – Engineering Design

The design from the last prototype has changed in a few ways. First, we have decided to scale down our greenhouse to a more reasonable size. We reduced the dimensions of the walls of the greenhouse from 6 ft wide x 6 ft high x 8 ft long to 4 ft wide x 4.5 ft high x 6 ft long. Including the roof, the greenhouse will be a total of 6 ft high. This was done to cut down on costs, use less materials and make it more manageable to build. Another change is that we have decided to make every wall to be able to be disassembled using the nuts and bolts system. Originally only one wall was supposed to be disassemblable, but during construction it was easier to build each wall by making smaller sections, and it was decided that we should implement our portability feature into every wall. As well, it has been decided that for the roof we will be using corrugated panels made from pvc. In the original plans 6 mil polyethylene was planned on being used over the whole greenhouse to save on costs, but in order to support the necessary weight we are now using the corrugated roof panels. To help keep the structure sturdy two layers of wood will be added to the top and bottom of every panel. This will link the back, front and two sides panels to the foundation and roof allowing for a more rigid structure overall. Whereas connecting every panel to the foundation and roof with nails and screws would not suffice as the link would not be as strong as using an intermediate layer of wood, which could cause structural failure if a nail, screw, or bolt breaks under pressure from the weight of the roof and anything on top that such as snow.

Once our prototype is finished being built, it will be tested by applying force to the roof to see if the greenhouse will be able to support the necessary weight as well without deforming too much. As well, we will test it for the weather conditions by leaving it outside in the cold and/or snow if possible. This will test to see if it is in fact usable in the desired conditions.