Accessible Weight Scale for Seated Users

Week #2

February 6, 2008

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Work Completed

During the first week of BME 290 I began work on the cardboard model of the elevated toilet compartment. The purpose for doing a cardboard model of the elevated toilet compartment is to show how much space will be available in the cardboard model of the elevated toilet compartment. The prototype also allows us to make sure that there is enough material to make the elevated toilet compartment. One 4 feet by 8 feet sheet of aluminum was ordered for this project. Only one 4 feet by 8 feet sheet of cardboard was used in the construction of the cardboard prototype of the elevated toilet compartment.

The dimensions used for the elevated toilet compartment were determined by the handicap accessible toilet in the Bronwell building. These dimensions are given in the diagram below. After the model toilet arrived last week the exact measurements of the toilet were taken. The cardboard prototype was adjusted to fit on the model toilet. The major change was the length of the elevated toilet compartment.

![Cardboard Prototype Dimensions](image)

The columns were made of cardboard rolled into a cylindrical shape 5” tall for the tall columns and 2 ½” tall for the short columns. The cylindrical cardboard columns were held together and attached to the panels with scotch tape. The short columns were taped to the top panel while the long columns were taped to the bottom column. The sides were also constructed from cardboard and attached to the rest of the compartment using scotch tape.

During the construction of the cardboard model it was decided to use short columns above the load cells to both support the weight of the user and to hold the load cells in place. Straps or brackets will also be used to hold the load cells in place in the completed project. That way if the elevated toilet compartment is moved the load cells will still not move even though there is not as much weight applied to the load cells. The setup is shown in detail below in Figure2.
It was also decided after the final construction of the cardboard prototype to extend the width of the elevated toilet compartment to 24 inches. This allows for more space for the handles on the top of the elevated toilet compartment so that the user can comfortably grip them.

**Future Work**

For future work next week we hope to start cutting the metal and start constructing the elevated toilet compartment. We plan to get the top and bottom panels cut with the inner hole and trimmed corners. The columns will also be cut and threaded. By the end of the week we hope to begin welding the columns onto the top and bottom panels. We will make sure that all of the burrs and rough spots are filed down before moving onto the next part of the construction process.
We have gotten a good start on the project and just need to continue doing so to complete the project on time. We also may want to shift more man power to the circuits portion of the project since there are a considerable number of tasks remaining if the project is to be successful.
**Hours Worked**

This week approximately 15 hours was spent in the construction of the cardboard model of the elevated toilet compartment and meeting with team members to discuss possible changes in design for the elevated toilet compartment.