Mechanical/Biomedical Sustainability Project

Solo Transfer Wheelchair – Phase II

Mission Statement

To develop a wheelchair which facilitates the transfer of a patient to and from a bed with minimal caregiver assistance.

Synopsis

The Solo Transfer Wheelchair project was introduced in the 2010 LSSL Program and was the original invention of Structured Solutions II LLC of New Canaan, CT. The team from 2010 consisted of eight team members.

The 2011 team picked up where the 2010 team had left off (creating a scissor lift mechanism for the base of the chair). The new goal was to complete the seat and its lateral transfer mechanism. This entailed several key developments:

- Reviewing previous team's research to bring the 2011 team up to date
- Learning to use SolidWorks to create 3-D models
- Creating virtual 3D SolidWorks models of the seat and the lateral transfer mechanism and incorporating them into the previously existing SolidWorks model of the wheelchair base
- Rapid-prototyping a proof-of-concept model of the lateral transfer mechanism and later completing an aluminum prototype

The completion of the 2011 project resulted in a physical proof-of-concept prototype of the lateral transfer mechanism and a 3-D SolidWorks model of the seat, back rest, leg rest, and reclining mechanism design.

A Phase III design will most likely be the next step in the project evolution to continue in 2012.

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