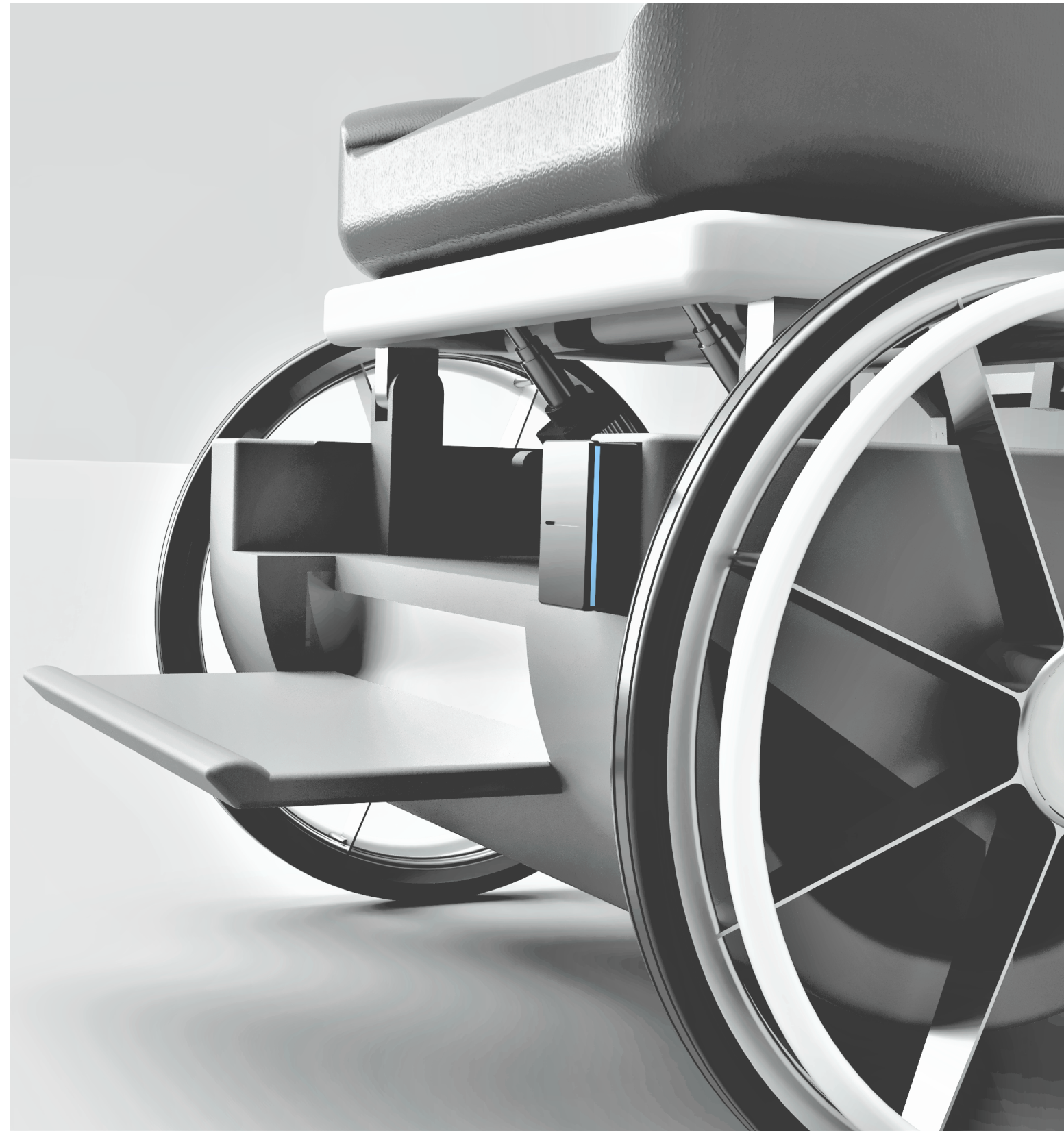


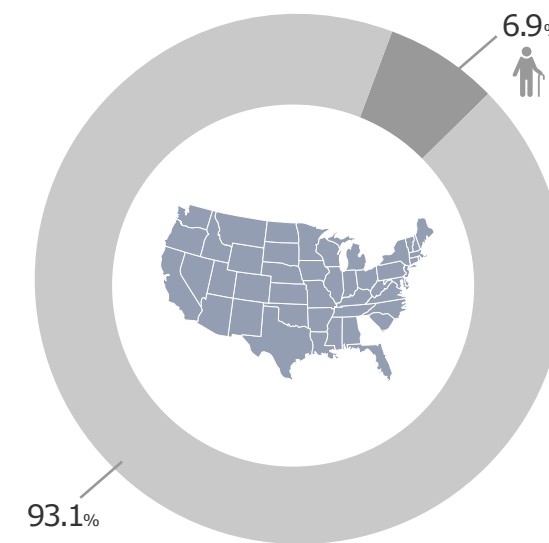
Mobi



Mobi is a powered standing electric wheelchair that enables the user to sit/stand and move around in a confined space like the kitchen. It is designed in a way that it is configurable to the user needs.

Problem Identification

People with disabilities have trouble moving around or performing chores in tight spaces like kitchen.



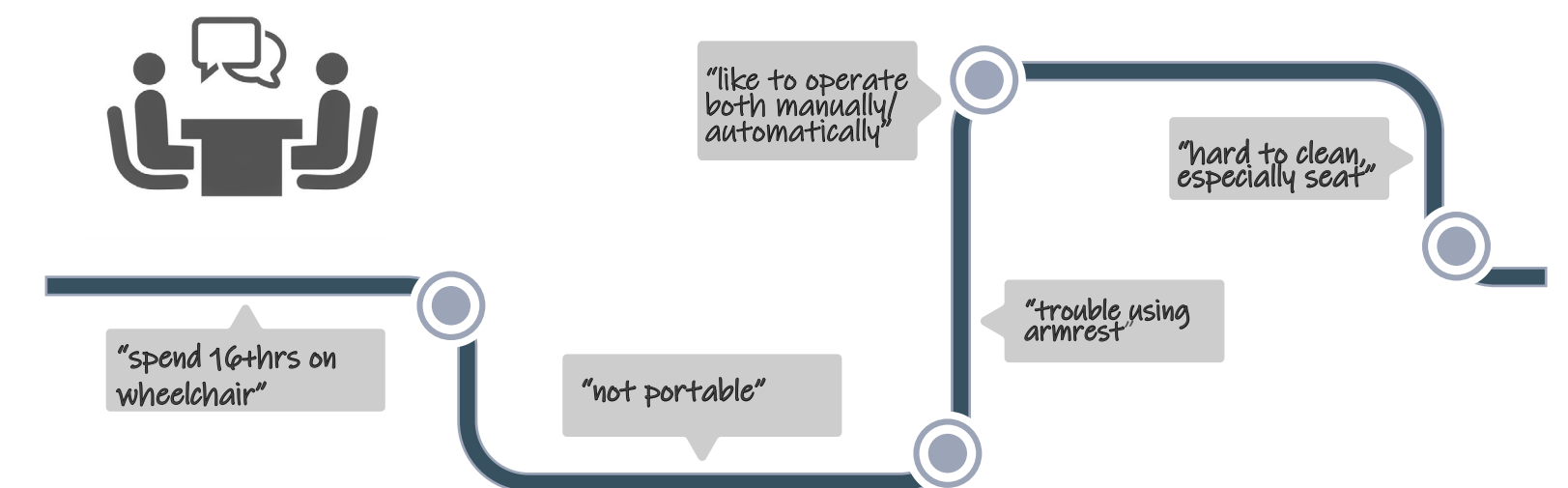
Disability Statistics from the American Community Survey(ACS), 2017 proved an estimated 6.9 percent of non-institutionalized, male or female, all ages, all races, regardless of ethnicity, with all education levels in the United States reported a ambulatory disability.



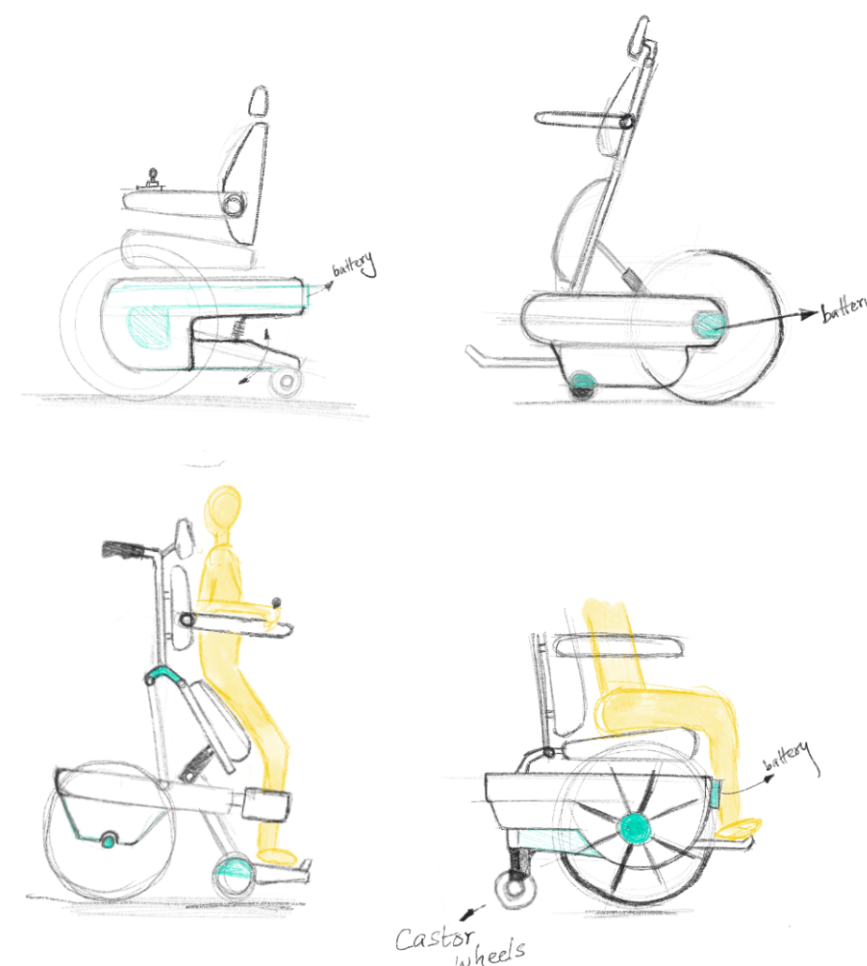
Existing devices are too high-tech, bulky, not easily transportable and unaffordable by general users.

User Interview

I visited CP Rochester, a local facility for the people with Cerebral Palsy and conducted few interviews with the wheelchair users, physiotherapist and the manager for volunteering services to understand the user better. Here is what the users had to say:



Ideation Sketches & Foam Prototype



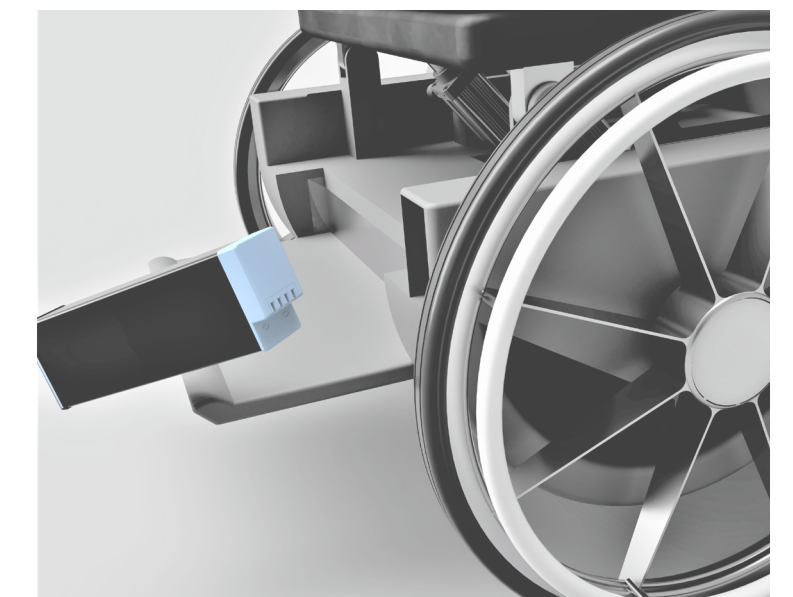
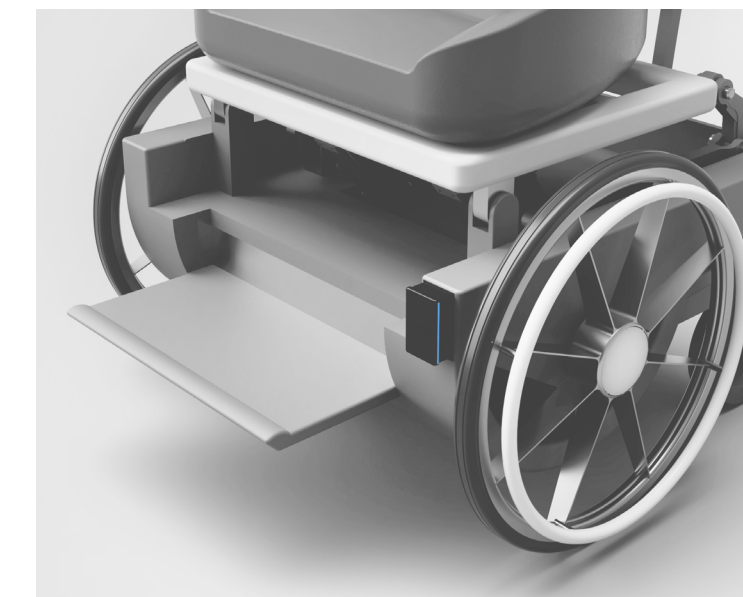
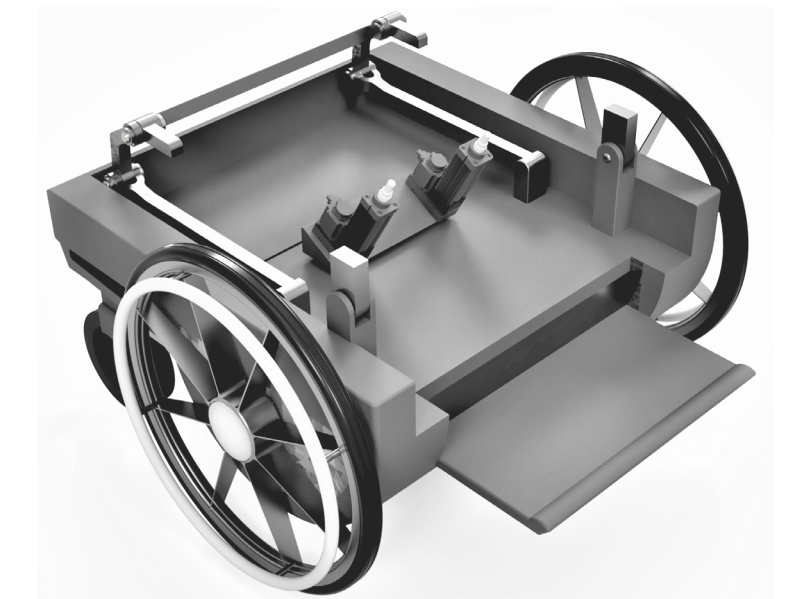
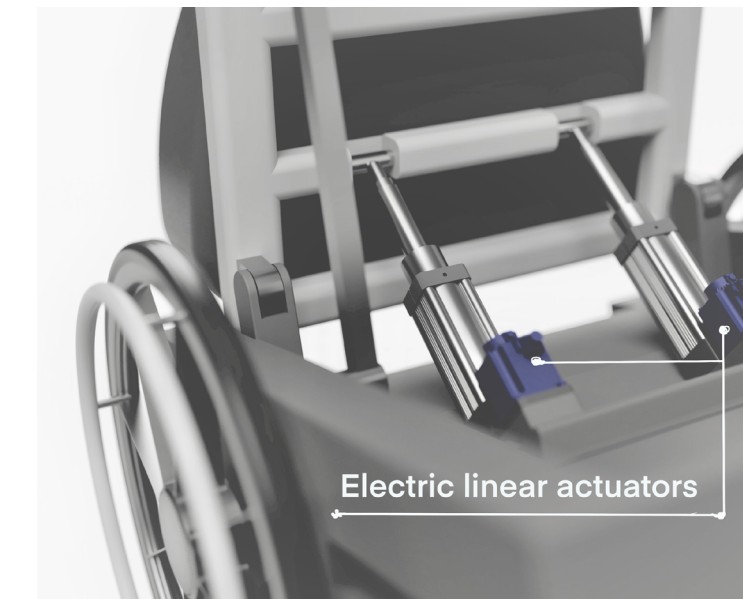
The above model represents the top part of the wheelchair and was made using foamcore to test the possible mechanism of the standing wheelchair.



Location of Linear actuators and Battery-pack

One important part of the design is the use of electric linear actuators instead of hydraulic pistons. Electric actuators are faster and need less maintainance unlike pneumatic actuators which depend on air/liquid pressure.

The location of the battery-pack makes it convenient for the user to charge/remove it.



Standing Positions

There is an added weight at the bottom so that the user can move around in a standing position without having to worry about toppling over.

All modeled and rendered in Autodesk Fusion 360.