Standing Gardener
Snow/Sand Wheelchair

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Client

• Brenda Stenglein
• Sean Stenglein

• Cerebral Palsy
  
  A physical disability which causes lack of control of motor operations due to damage to the cerebrum at birth.
Project Objective

• Add features that Sean’s current standing aid does not have.
  – Adjustable size
  – Specifically designed for gardening

• Exercise
  – It is important that Sean gets used to standing to help maintain his muscle and bone mass.
Key Features

• Safety

• Comfort- Adjustable Size and position.

• Ease of use for Sean and his parents
Previous Design

- Leckey Freestander
- Expensive- $1200-$1500
- Multiple Size Constrictions
Design
Our Design (Side View)
Design Continued
Our Design (Top View)
Wheelchair Objective

• Encompass the technology of a belt treads into the design of a wheelchair.

• Give Sean mobility on terrain he could not go on before.
  – Ice
  – Snow
  – Sand
Previous Designs

• Lasher Sport, LLC BT-Trail Off-road Wheelchair

• Steven L. Weybrecht’s Patent on All Terrain Wheelchair
Key Features

• Belt treads
  – More surface area in contact with ground.
    • More grip and less slip.
    • Weight of the device is spread out.

• Skis
  – Allow for a smoother ride.
  – Can be adjusted up and down to vary the amount of weight on the wheels.
Design
Our Design (Side View)
Design

Our Design (Front View)
Budget

•  ...
Conclusion

• This design will not only allow Sean to do what he could with his current standing aid but it will increase the ease of all his tasks.

• Sean can be mobile on terrain he could not go on before.