Dream Team CalEarth

Final Presentation



SUPPLYFRAME
DESIGNLAB
HACKADAY PRIZE 2020

Mission

Increase the demand for sustainable construction by creating a global trend for “Superadobe” homes by flag shipping in the US and Europe.

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Video

Solutions developed by the Dream team

This video gives an introduction to different products that could make the SuperAdobe construction process less labour intensive.

Earth Funnel

- The user can load an entire layer of SuperAdobe bag on to the tool.
- The user can hold, position and fill the bag with a just their own two hands
- The bag is automatically deposited as the user moves around the the layer
- The tool can be assemble on site with laser cut material and a rivet gun, no other tools are needed.

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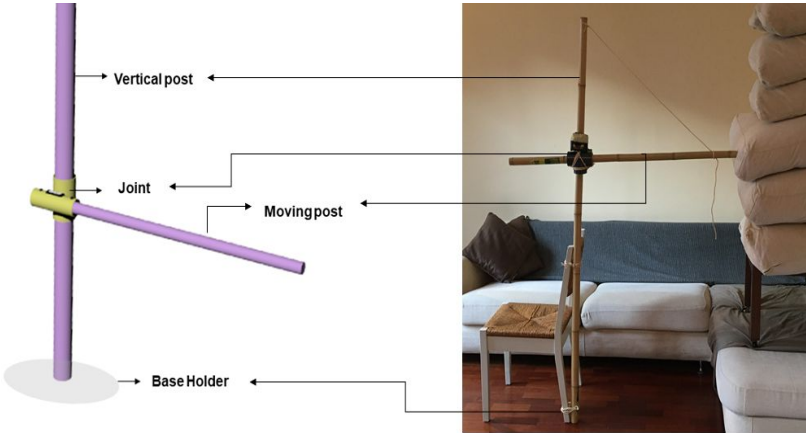
Earth Funnel: Next Steps

- Add 4 handles
- Secure the rubber band better to stop it sliding off
- Instructions to explain how to use
- Explore best material
- Make the larger funnel smaller to reduce awkwardness

Low Cost Pipe Compass



Pros

- It can rotate and maneuver over different construction elements easily.
- It can fold flat vertically when not in use to accommodate uninterrupted movement on the build site.
- It is stable and easy to attach and detach and move to different layers.
- It is affordable and robust. (can withstand dusty build sites)

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Low Cost Pipe Compass

- Pipe compass needs to be integrated with the digital measuring device. (Currently they are not)
- Needs a product designer to convert the 3D printed files into moulds for casting HDP Polymer.
- A test from start to end of production and assembly needs to be tested to make the product store ready.
- A rough estimate of 5000$ is needed for this product to be made product ready.

LIDAR Compass: Status

- Works!
  - Successfully measures geometry vs. model, and displays pass/fail with green laser
- Effectively a functional proof of concept
- Needs some functional improvements
  - DXF import missing
  - Not yet self-contained
  - Missing physical features like cover, rotation platform, and ground mount
- Needs some quality improvements
  - Laser stability/accuracy
  - Algorithm accuracy
  - Maybe laser smoothness?
  - Maybe higher-frequency sampling?

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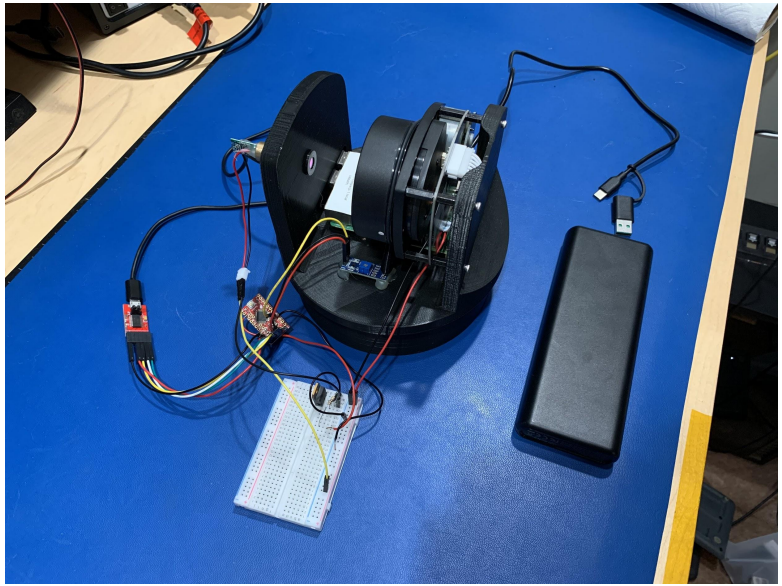
LIDAR Compass: Next Steps

- Functionality improvement
  - Improve measurement and feedback algorithms
  - Switch feedback laser microcontroller to something slightly faster for timing accuracy and stability.
  - Complete software incl. DXF handling and phone interface
- Packaging improvemnet
  - Finish and fully integrate physical structure
- Release data
  - Finish packaging design documentation in releasable formats.



Overall Next steps

- On site testing
- Collecting user feedback
- Promoting to open source online community
  - Hackaday
  - Github

CalEarth Product Store

amazon | All | Hello, Sign in Account & Lists | Returns & Orders | 0 Cart

Deliver to Spain | Today's Deals | Customer Service | Gift Cards | Registry | Sell | Amazon's response to COVID-19

CalEarth

CalEarth Store Share this page

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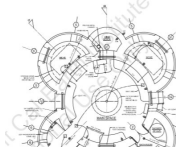
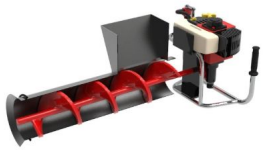


Eco-Dome Educational Blueprint PDF
500 $

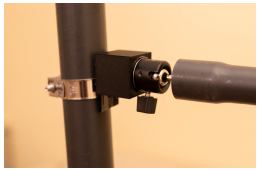


Earth Extruder
Rent/buy

CalEarth Bag roll 250 yard
243$

Earth Funnell
100 $

Lidar Compass
Rent/ Buy



Pipe compass attachment
55 $

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Q & A

Thank you

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