Baja Del Sol - Spring 2019

University of California, San Diego,

Project Advisors – Ray Guardiano, John Davis, Mayuki Sasagawa
Team Members – Nien-Chen Weng, Michael Yiu, Andrej Pervan, Vy Huynh, Philip Pham, Dipa Nayak, Thomas Lee, Ryan Nguyen, Jiayi Li, Michael Barritt, Andrew Wong, Ivan Wutama

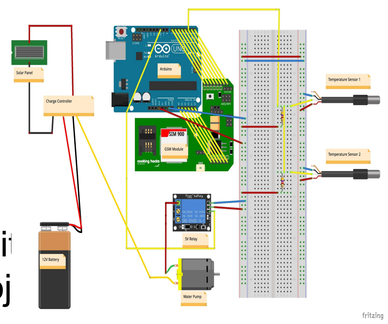
Background Information

- Baja Del Sol seeks to assist non-profit organizations in Baja California, Mexico by designing sustainable energy solutions for clients in need of either potable and/or hot water. Our team aims to further research the issue throughout Baja, and work with the community to develop a sustainable model for the region at large. Our partner organization, La Mision Children's Fund (LMCF) has connected us to an orphanage in Tijuana called La Hacienda de la Inmaculada.

Project Subteams

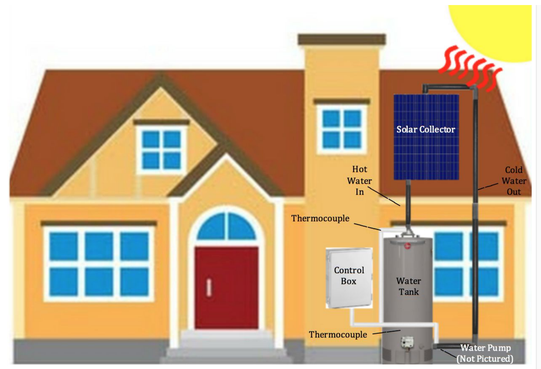
- **Testing**
  - Develop a testing protocol to verify the performance of the control box by the testing cart.
  - Attached inlet and outlet pipes to "bucket reservoir".
  - Installed solar panels at optimal angle to the top of the cart.

- **Control Box**
  - Established the data transmission pathway for the control box.
  - Completed control box wiring.



- **Outreach**
  - Building a network wi for support of the proj

Design Solution



The control box utilizes an arduino and thermocouples connected to the hot water tank to determine whether water heating is necessary. If the temperature is too low then water is pumped through the solar collector to be heated and then stored in the hot water tank.

Quarterly Goals

- Improve control box design and data transmission.
- Finish building the testing cart for the control box.
- Attach a reflective metal sheet below the copper pipe to maximize heating capability
- Finish installation manual for the control box.
- Visit the La Hacienda orphanage to maintain and update the current system.

Baja Del Sol

University of California, San Diego,

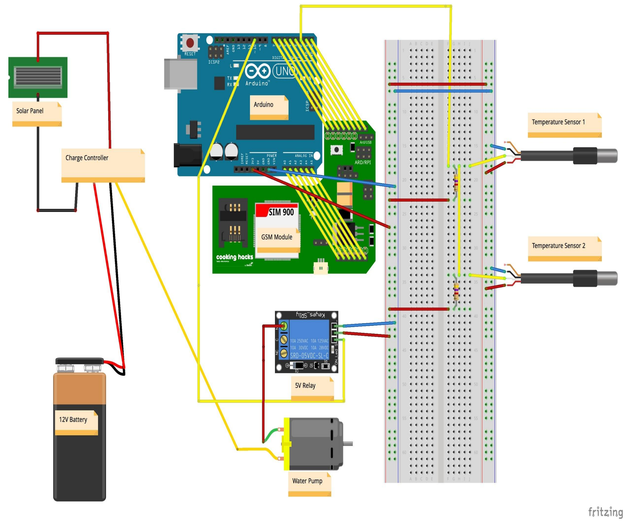
Michael Yiu, Inna Karamyan, Matt Nakpawan, Rex Le

Background Information

Baja Del Sol seeks design sustainable energy solutions for clients in need of either potable and/or hot water. Our team aims to further research the issue throughout Baja, and work with the community to develop a sustainable model for the region at large. Our partner organization, La Mision Children's Fund (LMCF) has connected us to an orphanage in Tijuana called La Hacienda de la Inmaculada.

La Mision Children's Fund
a US 501(c)3 Non-Profit Organization

Project Subteams



Testing

- Develop a testing protocol to verify the performance of the control box by the testing cart.
- Attached inlet and outlet pipes to "bucket reservoir".
- Installed solar panels at optimal angle to the top of the cart.

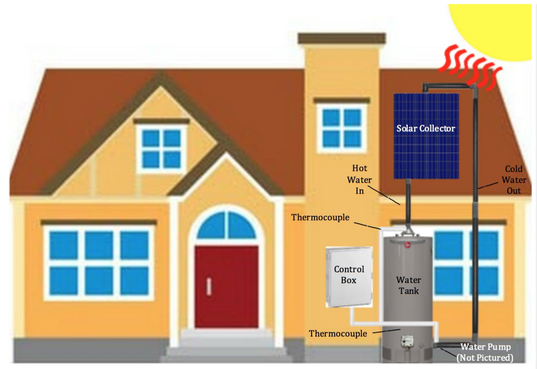
Control Box

- Established the data transmission pathway for the control box.
- Completed control box wiring.

Outreach

- Built a website to

Design Solution



The control box utilizes an arduino and thermocouples connected to the hot water tank to determine whether water heating is necessary. If the temperature is too low then water is pumped through the solar collector to be heated and then stored in the hot water tank.

Quarterly Goals

- Improve control box design and data transmission.
- Finish building the testing cart for the control box.
- Attach a reflective metal sheet below the copper pipe to maximize heating capability
- Finish installation manual for the control box.
- Visit the La Hacienda orphanage to maintain and update the current system.