IPRO 337: The Zero Energy Lab
Introduction

- **AGENDA:**
  - Team Breakdown:
    - Team Leader: Andrew Kedzuch
    - Sub-Groups
  - Solar Hot Water Summary
  - Window Summary
  - Energy Conversion Summary

- **TEAM BREAKDOWN**
  - **Solar Hot Water Sub-Group:** Christopher Brewin (leader), Shweta Ghandi, Carlos Hernandez, Sarah Pfeifer
  - **Window Sub-Group**: Karen Nelson (leader), Nathan Schmidt, Steve Leemon, Jainam Shah, Andrew Kedzuch
  - **Energy Conversion Sub-Group:** Anthony Wisniewski (leader), Jon Reinecke, Ray Simons, Jason Walker

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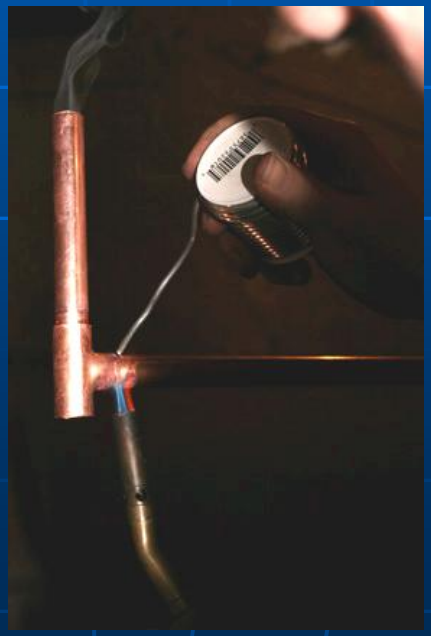
Solar Hot Water Summary

- **PROBLEM:** No hot water or heating system
- **GOAL:** To Provide hot water and working heating system using solar thermal collectors

- **PROGRESS:**
  - Materials for construction acquired
  - Work Space



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Solar Hot Water Summary

- **OBSTACLES ENCOUNTERED:**
  - Budget Issues
  - Wind Uplift
  - Load issues with Thermal Collector
  - Not enough sun power due to cloudy days

- **CHALLENGES AHEAD:**
  - Load issues with large storage tank
  - Plumbing code compliance
  - Funding

IPRO 337: The Zero Energy Lab Windows Summary

- **PROBLEM:** No energy efficient means of ventilation
- **GOAL:** To create a demonstrational model of a solar powered, climate controlled, automatic window system.

- **PROGRESS:**
  - Researched similar systems, usefulness
  - Specified a system that will work in our circumstances

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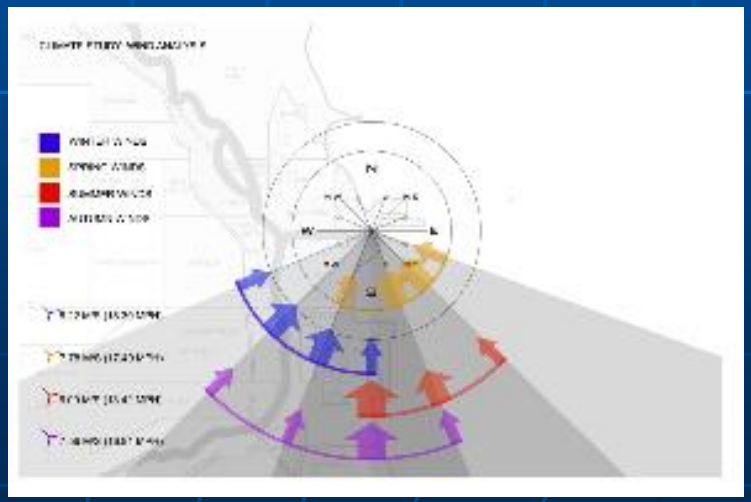
Windows Summary

- **OBSTACLES ENCOUNTERED:**
  - Current window system not in operable shape
  - Effective ventilation dependent on wind direction

- **CHALLENGES AHEAD:**
  - Cost-effectiveness
  - Power supply during inopportune weather



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Energy Conversion Summary

- **PROBLEM:** Power is not readily available everywhere in the lab.
- Current inverter system does not charge the mobile energy cart batteries.

- **GOAL:** To connect the cart batteries to the renewable energy source and increase the capacity of the system.

- **PROGRESS:**
  - Research and data recorded on current system

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Energy Conversion Summary

- **OBSTACLES ENCOUNTERED:**
  - Limitations of the system.

- **CHALLENGES AHEAD:**
  - Maintain Mobility of Cart
  - Implement Safety and Chicago Electrical Code
  - Compose a Compelling Grant Proposal for TGIF

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QUESTIONS?

Solar Hot Water ◆ Windows ◆ Energy Conversion