

IPRO 337: Zero Energy Lab And Designing the IPRO Team Collaboratory Space

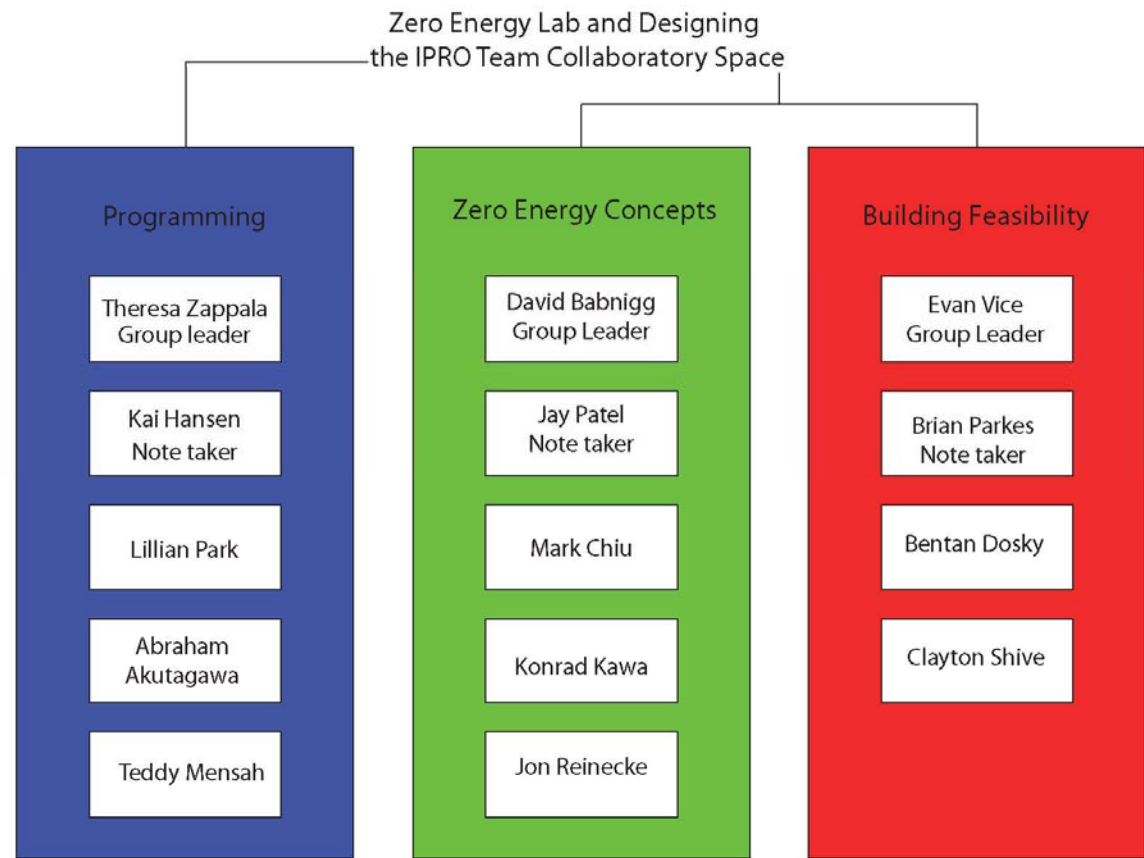


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Project Goal and Breakdown

The goal of this team is to create a detailed program for a collaboratory space for the IPRO program, and to evaluate the feasibility of such a program within both Machinery Hall and the old CTA Building. We are also continuing the research of the Zero Energy lab from past semesters, to help aid the feasibility studies for these buildings.



Minute taker/ iGroups manager – Jay Patel

Programming a Collaboratory Space

Goals

1. Re-evaluate work from summer IPRO 301
2. Create a new survey designed to gather accurate and insightful information about today's current IPRO space usage
3. Analysis of IPRO program's history and projected future growth
4. Create a detailed and realistic program for a future IPRO collaboratory space
5. Evaluate the existing CTA building for such an IPRO space in conjunction with the CTA sub-group

Progress to-date

1. Developed a new version of an IPRO-space survey
2. Transferred the survey to Surveymonkey.com to easily distribute the survey to students
3. Procured and analyzed past IPRO statistics including meeting times, meeting locations, and enrollment numbers for the last 15 semesters

Programming a Collaboratory Space

Major Obstacles

1. Switching gears

Began by trying to define spaces

Now moving towards defining user interactions

2. Resolution

Creation of different line of questioning

Different take on analysis

Anticipated Challenges

1. Receipt of completed surveys

2. Analysis

Interpreting written comments from the survey

3. Intended progress

Initial project plan vs. new direction

New goals vs. Time permitted

Our understanding of the problem has become deeper

Zero Energy Concepts

Goals

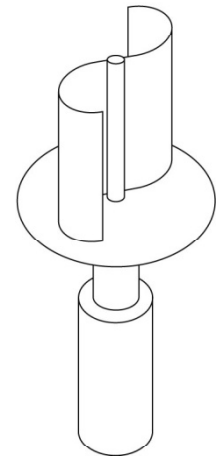
Improve efficiency of Machinery Hall space as a “Zero Energy Lab”

1. Explore wind turbines as an additional source of energy
 - Construct a full working model
2. Lighting
 - Enhance quality of nighttime illumination
 - Explore energy-saving lighting techniques/products

Progress Towards Goals

1. Research of wind turbines
2. Production of prototypical models (Sketches and Physical Models)
 - Savonius Rotor
 - “H”-Rotor
3. Testing of prototypical models

Savonius-Rotor



Zero Energy Concepts

Encountered Obstacles

1. Communication between team members
2. Team members' availability outside of class
3. Varying Academic Disciplines
4. Availability of model making tools

Anticipated Obstacles

1. Time to accomplish established goals
2. Safely securing turbine on roof of Machinery Hall
3. Availability for work, meetings, presentations, etc.
4. Acquiring/assembly of all parts for final model



Building Feasibility

Goals

To determine the feasibility of buildings to be used as a future IPRO collaborative space

- Possibilities include the CTA building or Machinery Hall

Progress

- Obtained drawings
- Obtained electric and gas information
- Visited and analyzed site



Building Feasibility

Obstacles

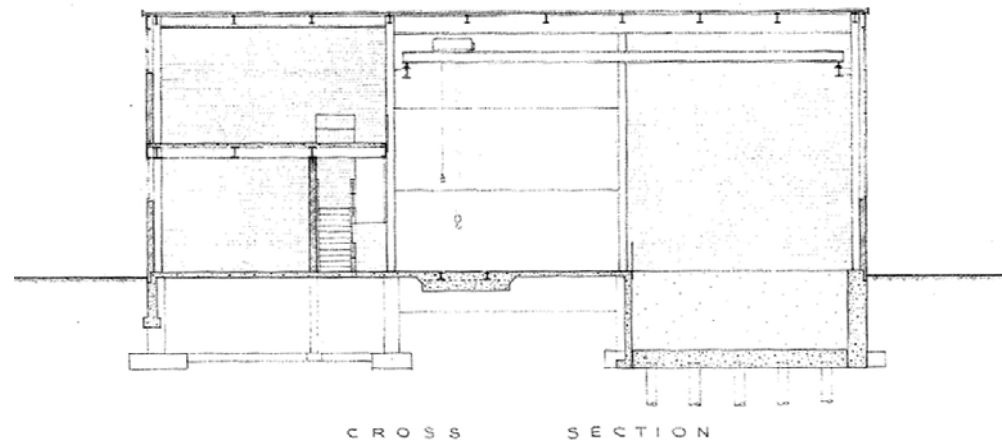
Encountered

- Equest
- Air infiltration
- Building info for use in energy model



Anticipated

- Quotes for applications for zero energy technology
- Time constraints



Questions?