IPRO 337
Zero Energy Lab and Designing the IPRO Collaboratory Space

Objective
The goal of IPRO 337 is to design an ideal Net Zero Energy facility for a future home of IIT's IPRO Program.

Basic Organization and Tasks
IPRO 337 delegated major responsibilities to 3 sub-groups. The Programming group researched the needs of an ideal IPRO. The Zero Energy group continued research on renewable energy technologies. Finally, the Building Feasibility group assessed the ability of the CTA Building to house the needs of the future IPRO Facility while also achieving Zero Energy.

Accomplishments
The Programming group used a survey to research the needs of the IPRO Program and developed a program and preliminary design for the existing CTA building. The Zero Energy group made small-scale models of 3 vertical axis wind turbines to find the most efficient design. The group then made a working prototype of the best design. The Building Feasibility group made an energy model for the existing building. This was used to show what building improvements and energy technologies can be applied to meet our Zero Energy needs.

Critical barriers and Obstacles
The Building Feasibility group had to learn how to use energy modelling software in order to accomplish its goals. Only one member of our team had the machining skills necessary for the production of a working wind turbine prototype. We also faced the challenge of molding IPROs 301 and 337 into one successful IPRO. Funding and scheduling conflicts of team members also posed a slight challenge.

Conclusion
IPRO 337 continued the work of finding out what energy technologies and building shell improvements can be implemented in an existing building to meet the goals of this IPRO. We also found out what would make an ideal IPRO Collaboratory Space.

Next Steps
Future members of this IPRO will use the current energy model and the IPRO space program to work towards the final design of the future IPRO Space and decide whether it is best to use Machinery Hall, CTA Building, or construct a new building altogether.

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