

THE PROBLEM

- ❑ Private schools and religious institutions often overlook money saving opportunities from energy efficiency improvements.
- ❑ Many of these institutions are in energy inefficient older buildings.
- ❑ Our plan is to help these institutions reduce their energy expenses.

OBJECTIVES

- ❑ Set up a data monitoring system in selected churches and schools that will record real time energy usage.
- ❑ Research past churches and schools for successes and failures in attempted energy usage improvements and target our findings toward the current project, Old St. Mary's.
- ❑ Design a promotional and functional website that will process the energy usage data of the churches and schools and make the data available to energy professionals.
- ❑ Create a metric that can be used to determine possible candidates for future projects.
- ❑ Research funding options for energy efficiency programs, including the intracting method.
- ❑ Identify low-cost, easily implementable solutions for facilities that can generate large energy savings.



SPECIAL THANKS

Vince Cushing and Clean Urban Energy
Old St. Mary's Church and School
Joe Clair – Director of IIT Campus Energy and Sustainability
George Malek of ComEd
Leroy Kennedy of IIT Community Affairs
IPRO 320 for designing the team's website
The members of IPRO 328 for all their hard work this semester



IPRO 328

Church and School Energy Efficiency Program

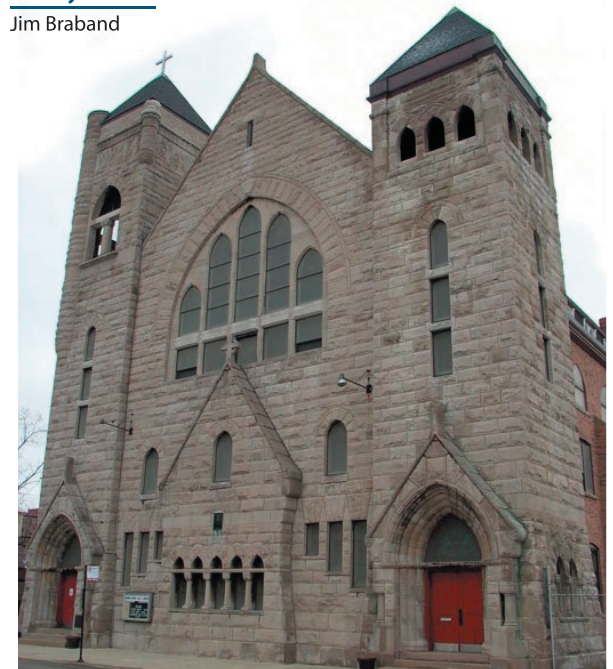
Team Members

Pat Bauer
Shaun Doran
Beth Nielsen
Priyanka Patel
Dennis Radtke

Emily Chen
Max Morgenthaler
Jongpil Park
Saagar Patel
Philip Soderling

Faculty Advisor

Jim Braband



Visit our website at:
www.churchgreen101.com

TEAM ORGANIZATION

In order to achieve our objectives, our team was broken into 6 subteams

MARKETING

Max Morgenthaler, Jongpil Park

The marketing team worked on finding potential candidates for this type of project in the Bronzeville neighborhood as well as how to fund the projects.

DATA

Shaun Doran, Philip Soderling

The data team worked with the past and current energy data from Old St. Mary's to determine energy usage issues, and to find possible ways to save money.

PRECEDENT

Priyanka Patel

The precedent team looked into past examples of energy saving projects to determine what worked and what didn't.

WEBSITE

Pat Bauer, Emily Chen, Beth Nielsen

The website team worked on designing the website in conjunction with IPRO 320.

ARCHITECTURE

Jongpil Park, Priyanka Patel, Dennis Radtke

The architectural team was tasked with designing a unique version of Old St. Mary's School, in the situation where money was not an issue.

STAKEHOLDERS

Saagar Patel

As the project progressed, the team started to work with the different sets of people who would be involved in a project of this manner. The team worked on determining the effects and needs of each of these groups.

CHALLENGES & OBSTACLES

- ❑ The data monitoring system went in very late in the semester, making it difficult to conduct a thorough energy analysis.
- ❑ None of the team members had ever designed a website
- ❑ Finding examples of intracting programs in the U.S. was extremely difficult.
- ❑ We had trouble finding energy programs similar to ours in the Chicago area.

RECOMMENDATIONS

- ❑ A training program for IPRO members on how to conduct energy audits is needed.
- ❑ More sites need to be examined to get a better idea of the solutions that are applicable to potential sites.
- ❑ The neighboring churches need to be made more aware of the services that our program and the website can provide to them.

CONCLUSIONS

- ❑ Neighborhood churches present many opportunities for low cost energy solutions, but require professional consultation to identify what should be done.
- ❑ Intracting is a viable funding source when combined with grants and incentive programs, but its acceptance needs to be further researched.
- ❑ Traditional energy programs, such as performance contracting, work with larger school districts and corporate facilities, but not with small churches with old buildings.

Our Case Study

OLD ST. MARY'S

We have been using Old St. Mary's Church and School in Chicago's South Loop as a trial location to investigate the logistics of installing an energy monitoring system, and to see how the system could be utilized to reduce the energy consumption of the facilities.

Old St. Mary's Church was built in 2002, and although a newer structure, it still would benefit from energy efficiency improvements.

The school was built in the 1940s and 1960s, with an interior that was constructed in the last 20 years.

12 monitors were installed in the church and school that would allow us to monitor the individual energy consumption from the various heating and air conditioning systems, lighting, and gas usage, as well as outdoor temperature.

