Motto: We provide the know-how. You make the choice. You keep the savings.

Mission Statement: Our team is committed to raising awareness and educating the residents of Oak Park about energy usage while providing guidance for reducing their carbon footprint.
Problem and Goals

- **The Problem**
  - Oak Park residents lack energy-efficient homes.
  - Oak Park residents are not yet aware of long-term benefits and savings.
  - The Village of Oak Park wants to be more energy efficient.
  - The Village of Oak Park wants to retain the historic character of the community.

- **The Goals**
  - Evaluate Oak Park’s building typology
  - Assess their current energy usage
  - Propose a comprehensive sustainability plan that will reduce the carbon footprint of Oak Park
  - Distribute/gather information from home condition survey
The Team

Initial Team Configuration

Deliverables Sub-Team
- Jessica Fong
- Jeremy Kieser

Retrofit Research Sub-Team
- Graeme Port
- Casey Primm
- Dustin Reznicek

GIS Sub-Team
- Julieann Young
- Shabarinath Pabba

Final Team Configuration

- The sub-teams dissolved as individual group tasks were completed.
- The whole team then operated by delegating work among the team members, playing to individual strengths.
Research

- Zoning laws
- History of Oak Park
- Case Studies
- Energy Audit
- Building Typology Sampling
- Retro-fit options
  - Passive
  - Active
  - Community-wide
1.7 billion gallons of rain fall on Oak Park

2.0 billion gallons of water purchased (8.8 mil dollars)

Green roofing

- Could cover up to 8.8 mil ft$^2$
- Drastically cut down storm water runoff

Permeable paving

- reduces flood damage
- the need to de-ice roads
- treatment of runoff
Reasonable Energy Reduction
- 25% on retrofitted homes
- 15% behavioral changes

21,000 Residential Homes
- Averaging 95 years old
- 2,500 square feet

Expected Impact per 10%
- 2.2 million saved by consumers
- 6,500 tons of carbon emissions prevented
Energy Audit

- **Standard Tests**
  - Blower door
  - Infrared scanning
  - Combustion air supply
  - Combustion appliance safety

- **Benefits**
  - Possible locations of air leakage
  - Assessed adequacy of current appliances
  - Recommendations
  - Installation methods
Case Studies

- Identify similar patterns among Oak Park housing typologies
- Identify common issues and solutions, especially in historic buildings
- Produce literature to educate Oak Park residents about opportunities
- Provide examples of costs and savings
Retro-Fit Options

- Attic and Wall Insulation
  - Cellulose instead of fiberglass
  - Larger initial cost
  - 40% more energy efficient
- Energy Star Appliances
  - 15%-50% more efficient
  - Save upwards of $135 a year each
- Rain Barrels
  - For 55 gallon barrel - $60
  - Save 40% water bill in summer - irrigation
Ethical Issues

- Case study participants’ privacy
- Village-wide retro-fit options may not be the best use of Village funds if other projects are more important
- Accuracy and relevance of our information to the Village of Oak Park
- Reliable and accurate source of research materials
Conclusions

- Do not immediately install community-wide retro-fit options, rather, implement incrementally as needed.
- Average Village member can save money by being aware of his/her energy use.
- Oak Park home and business owners should consider having an energy audit performed.
Future IPRO

- Create more case studies based on different house typologies
- Work with the Oak Park Village Council to organize a plan of action
- Market research to find most relevant targets
- Expand on retro-fit research
- Research renewable energy
- Self-educate on Oak Park and its history
- Maintain a healthy relationship with Oak Park
Thank You! Any Questions?

- The Village of Oak Park
- IPRO @ IIT
- John Kelly
- K.C. Poulos
- John Porterfield
- Jim Gill
- Don McLauchlan
- The Oak Leaves
- Oak Park Public Access