



IPRO 329: OAK PARK ENERGY EFFICIENCY AND CARBON REDUCTION

Fall 2010

The Problem

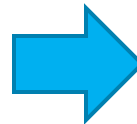
- Many homes in Oak Park are inefficient and their owners are unaware of long-term benefits of making them more efficient



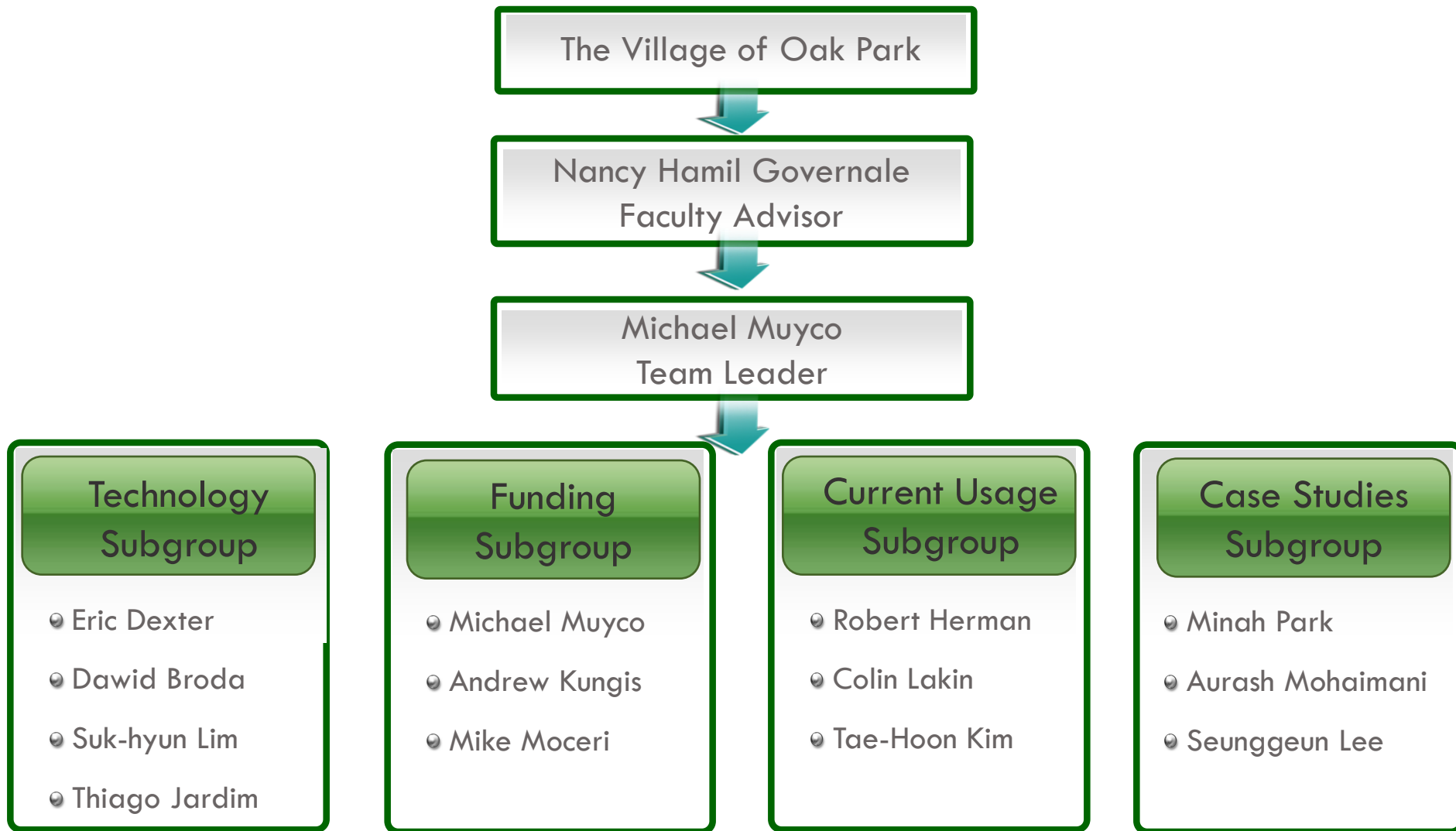
- The Village of Oak Park would like to become a more energy efficient community

Project Goals

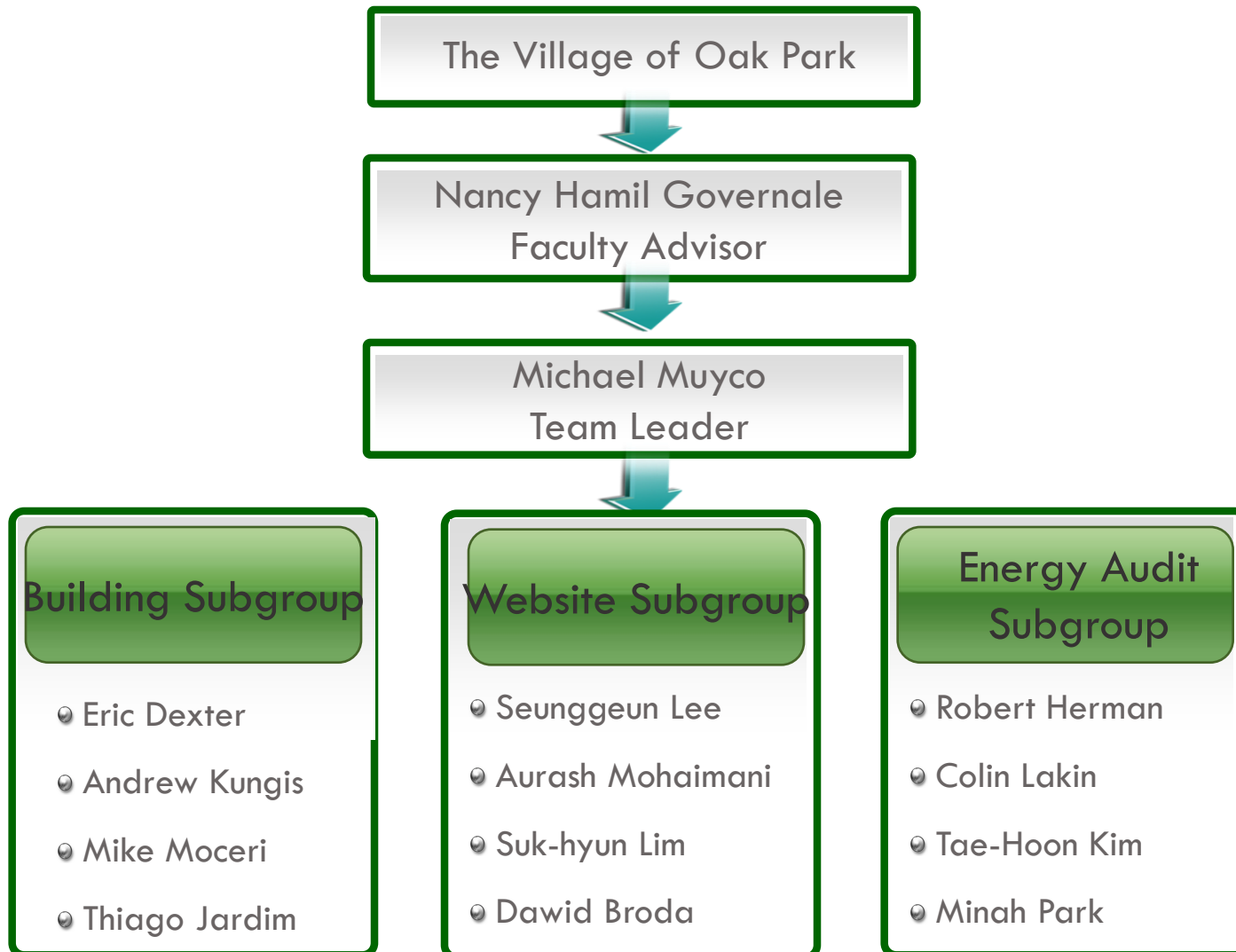
- Evaluate Oak Park's building typology
- Assess the current energy usage of homes
- Design and propose a comprehensive energy efficiency plan to help Oak Park meet its energy reduction goals



Team Organization



Team Organization



Current Progress- Evaluating Building Typology

- Created a Database of all homes in Oak Park
 - ▣ Age of building
 - ▣ Construction type
 - ▣ Size
 - ▣ Other Information that can later be used
- Site visits were made to gain an understanding of the village's layout
- Existing energy efficiency projects were researched
 - ▣ ComEd Home Makeovers
 - ▣ Chicago Historic Bungalow Preservation Project
 - ▣ PACE

Current Progress- Assessing Energy Usage



- Created a home condition/energy usage survey
- Calculated amount of rainfall in Oak Park that can be saved
- Performed Energy Audits on two homes with more to come

Current Progress- Energy Efficiency Plan

- An Energy Efficiency Plan is being created for each case study type suggesting possible home improvements including
- Energy Efficiency Plans will differ according to case study type.



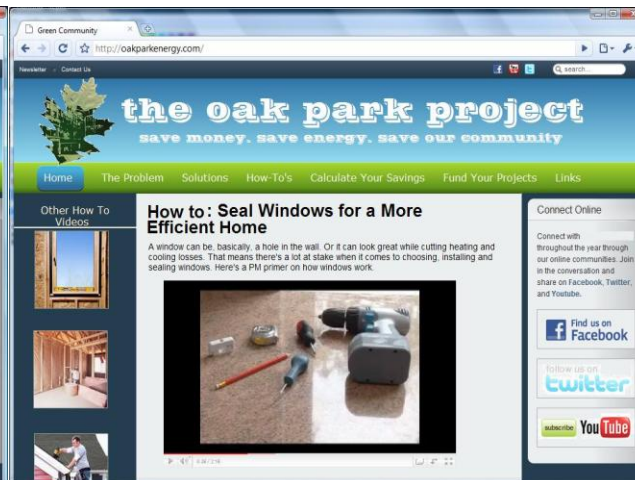
Current Progress- Energy Efficiency Plan

- Additional emerging technologies were researched
 - ▣ Geothermal
 - ▣ Home Energy Controllers
 - ▣ Solar Heating and Harvesting
 - ▣ Porous Pavements
 - ▣ Green Roofing
 - ▣ Cisterns for Storm Water Recycling
- Feasibility studies were conducted to see if these technologies could be used in Oak Park



Current Progress- Energy Efficiency Plan

- An easily accessible and user friendly website where residents can:
 - Gain Ideas on Possible Retro-fits by looking at Case Studies
 - View How-to Videos
 - Calculate Savings and Initial Investment
 - Find possible funding methods for the improvements



Work Ahead

- Build website and work on content
- Distribute survey and gather information
- Perform Energy Audits on more case study homes
 - ▣ Have 2 Performed already:
 - ▣ Will perform 4 more energy audits
- Finish building sample wall sections detailing current situation and improvements

Wall Sections in Construction



Major Obstacles Encountered



- Gaining information on homes while still respecting home owner's privacy
- Creating specific case studies from the array of diverse home styles and types existing in Oak Park
- Making energy efficiency plans as comprehensive as possible while still having a low start up cost

Anticipated Major Challenges



- Comparing our database data with available GIS data
- Convincing home owners about the benefits of investing in their home



Questions?

Comments?