Team Name: Oak Park Carbon Footprint Reduction

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.

I. Team Charter

1. Team Information
    a. *Team Member Roster (name, contact information)*
        i. Jessica Fong, Architecture, jfong1@iit.edu
            1. Strengths: Presenting, design work, Adobe Photoshop, Adobe Illustrator, AutoCAD, customer relations and communications, writing and organizing
            2. Weaknesses: Lack of knowledge about current events
            3. Expectations: Understanding of sustainable options, linear development of plan, cohesive group work, learn GIS software
        ii. Jeremy Kieser, Physics, jkieser@iit.edu
            1. Strengths: mathematics, programming, computer skills, writing.
            2. Weaknesses: historically a very poor presenter, little knowledge of design and home repair.
            3. Expectations: hope to get along with everybody and have a fun summer.
        iii. Julieann Young, Architecture, jyoung16@iit.edu
            1. Strengths: Presenting, design work, Adobe Photoshop, Adobe Illustrator, AutoCAD, background knowledge of sustainable technology.
            2. Weaknesses: Lack of knowledge about the site and area.
            3. Expectations: Exposure to the environmentalist and sustainability field, develop networking contacts, learn GIS software
        iv. Casey Primm, Psychology, caseyprimm@gmail.com
            1. Strengths: Computer specialist, experience with home construction, data organization and management.
            2. Weaknesses: Not accustomed to working with a team

3. Expectations: Cultivate team work skills

v. Graeme Port, Humanities, gport@iit.edu
   1. Strengths: Writing, research, and extensive experience with working as part of a team.
   2. Weaknesses: Lack of knowledge about sustainable technology, no experience using Adobe Photoshop, Adobe Illustrator, or AutoCAD.
   3. Expectations: Learn more about sustainable technology whilst working as part of a team on a meaningful environmental project.

vi. Dustin Reznicek, Architecture, dreznice@iit.edu
   1. Strengths: some knowledge of sustainable energy systems, design programs (AutoCad, Adobe Photoshop, 3D Studio Max), organization
   2. Weaknesses: working with a team
   3. Expectations: to develop team skills, advance my knowledge in sustainability/LEED, develop networking contacts, learn GIS software

vii. Shabarinath Pabba, Electrical Engineering, shabpab@iit.edu
   1. Strengths: Electrical Engineering major, took some power related courses, work with software pretty well, worked in a team in many situations.
   2. Weaknesses: joined the class really late.
   3. Expectations: Learn a little bit more about sustainable technology while gaining more experience in working as a team.

2. Purpose
   a. Goals and Objectives
      i. Our team's objective is to evaluate Oak Park's different types of commercial and residential buildings in order to assess their current energy usage. We aim to use this information to reduce the carbon footprint of Oak Park Village by proposing a comprehensive sustainability plan.

3. Background
   a. History of Oak Park (sponsor)
      i. The sponsor for this project is the Village of Oak Park, a large suburban community directly west of the city of Chicago housing a diverse population of 49,557 as of July 2008[1]. Originally a sprawling community of 500 residence; Oak Park saw its great boom after the Chicago fire of 1871 as many citizens left the city to settle in the suburbs and by 1890 the town had grown to over 4500 residence. Oak Park became the official name of the village in 1902, which was previously an unincorporated area and officially apart of the Cicero township, and by 1930 the city had grown to a size of over 64,000 residence[2]; significantly larger than its current population. The community is possibly most famous for its large number of historical Prairie Style homes, including many which were designed by the famous architect Frank Lloyd Wright.
   b. What Oak Park Wants (what is the problem and desire)
      i. The Village of Oak Park would not only like to have organized information and data about their current carbon footprint and energy use, but also a plan for how to

[1] City-Data: Oak Park, Illinois, http://www.city-data.com/city/Oak-Park-Illinois.html, Advameg, Inc., Copyright 2003-2010.

[2] Hurder, Steven. *Nurturing Excellence*, http://www.oprf.com/history/excellence.html, Copyright 1996-2003.

minimize its use of water and electricity. The Village of Oak Park is looking for community-wide solutions that will be affordable to their residents and consumers. The solutions will be able to benefit both current buildings and future developments. Also, an outreach program to help educate the Oak Park community about this data is desired. Training videos, a list of professionals, and case studies for specific house types and sizes will help Oak Park residents to understand exactly what an energy audit will consist of.

c. *Technology We Use*
    i. Much of the technology and science used by this project will involve the access of large information databases, since the effectiveness of this project will hinge on how much detailed information can be gathered on the buildings of Oak Park. To accomplish this, a Geographical Information System, or GIS, will be used to capture, manage, and display all desired forms of geographical reference information. The information in the GIS is gathered by an onsite probe connected to a triangulating series of satellites which can then be used to map out the geography of a region in detail.

d. *Historical Success/Failure/Research similar solutions*[3]
    i. Chicago developers and prospective property owners have attended the Chicago Green Retrofit Conference to hear speakers on possible retrofit options. There are several developments that have done retro-fit options. All the examples found are larger multi-unit housing developments, such as apartment complexes. These developments chose to employ many different methods. Installing Energy Star appliances and electrical features into buildings, and reviewing glass and air condition units were some of the internal changes that were made; while rain water recovery, land irrigation, and using less volatile organic compounds helped to make these changes externally. Several cities all over the United States have adopted these changes, including Danville, Chicago, New York, Seattle, and Washington D.C. Danville also had similar concerns regarding the preservation of historical sites, such as the Danville New Holland Apartments[4].

e. *Ethical Issues*
    i. Our main courses of action for this IPRO are to analyze data and determine effective suggestions for the Village of Oak Park to implement; as such we are not responsible for any actions taken by the village of Oak Park. However we must be certain that all actions taken by members of this project are done in accordance to wishes of the Village of Oak Park and with respect to the rights of its citizens. So as a precaution constant vigilance should be maintained by all IPRO members. Also, as an IPRO team we are ethically responsible to insure that any conclusions made or recommendations given to the Village of Oak Park and its citizens by our team are accurate and thoroughly investigated.

f. *Business & Social Costs*
    i. Business Costs
        1. The cost of the audit and retrofit process will depend on the decisions of the home or business owners. Ideally, the information regarding auditor and retro-

[3] http://www.greencommunitiesonline.org/projects/projects_by_name.asp

fit options will be free and available for any Village member to access through an online database or through the Oak Park Village Town Center.

ii. Social Costs

1. The social cost of this extensive operation is time, networking, and meticulous work. The correct data must be analyzed and documented in order for a comprehensive plan to develop. Working with members of many city departments is essential in order to capture the information needed to begin. Some community members may not be able to afford retro-fit improvements, and some historical homes also may not choose retro-fit options.

g. Proposed Implementation & Issues

i. All practical solutions developed by our project team will be presented to the Village of Oak Park in the form of a report and/or presentation. After our results and recommendation have been approved and critiqued by the Village they will be distributed to the residents of Oak Park in the form of a flyer, pamphlet and/or training video.

4. Team Value Statement

a. Desired Behaviours

i. Be on time
ii. Communicating clearly to one another about tasks and information gained
iii. Address conflicts and complaints with team members
iv. Address obligation conflicts
v. Have good hygiene
vi. Have good attendance
vii. Be prepared with materials for every class or visit
viii. Be attentive
ix. Have a positive attitude/enthusiastic
x. Be productive during class time
xi. Be patient and listen to one another

b. How We Address Issues

i. Any issues will be taken up by the group as a whole
ii. The troubled member will discuss in an open forum
iii. There will be a question/answer session
iv. If no solution between peers and group members are reached, the designated moderator will be informed

II. Project Methodology

1. Work Break Down Structure

a. *How We as a Team Will Solve Problems*

i. Propose all questions
ii. Propose all possible solutions to issues
iii. Discuss
iv. Vote
v. Execute

b. Major Tasks

i. Interpret GIS files and any other external data

ii. Research Retro-fit options
iii. Historical Research of Oak Park Village
iv. Historical Research of Oak Park Village homes
v. Research of village-wide sustainability initiatives
vi. Use all data and research to see expected results
vii. Give a detailed report to Oak Park Village Committee

c. Team Structure

We have chosen not to have a team leader or leaders for individual sub-teams because our IPRO consists of seven people and there is no discernable advantage to having those leaders.

i. Deliverables Team
    1. Members/Roles
        a. Jessica Fong – Constructing deliverables, assisting other teams
        b. Jeremy Kieser – Constructing deliverables, assisting other teams

ii. GIS Analysis Team
    1. Members/Roles
        a. Julie Young – Research GIS, analyzing GIS data, mapping
        b. Shabarinath Pabba – Research GIS, analyzing GIS data, mapping

iii. Sustainability Research Team
    1. Members/Roles
        a. Casey Primm – Research active retro-fit options
        b. Graeme Port – Research Village-wide initiatives
        c. Dustin Reznicek – Research passive retro-fit options

d. Gannt Chart

= Julie
= Casey
= Jessica
= Graeme
= Dustin
= Jeremy
= Shabri
= GIS sub-team
= Retro-Fit sub-team
= Deliverables sub-team
= Everyone

Tasks \ Weeks	05/27 to 06/03	06/03 to 06/10	06/10 to 06/17	06/17 to 06/24	06/24 to 07/01	07/01 to 07/08	07/08 to 07/15	07/15 to 07/22
Team Building Seminar								
Project Plan								
Photo Documentation of Van Tour through Oak Park								
Creating Agendas								
Logo Design								
Photo Documentation of Van Tour through Oak Park								
Mission Statement								
Motto								
Gather GIS data								
GIS mapping								
Research sustainability options								
Combine GIS Data and retrofit research								
Midterm Presentation								
Poster/Pamphlet								
Final Presentation								

2. Expected Results
    a. Visit Oak Park Village to meet with sponsor and understand project goals
    b. Visit Oak Park Village for a tour
    c. Visit Oak Park Village for a Blower Door Demonstration/Energy Audit (ezing.pro)
    d. Visit Oak Park Village in order to gather information on multiple occasions
    e. Energy consumption of individual Oak Park structures such that new and low-cost sustainable methods can be implemented
    f. Comparison of energy consumption between structures based on age, type, and size
    g. Case studies of different buildings
    h. Organized data and a projected plan of action for Oak Park Village sustainability
    i. Detailed information on overall savings and carbon footprint changes for the village
    j. Project Report for Oak Park Village to review
    k. Presentable document for Oak Park Village citizens to review, documenting ways to reduce energy consumption in their homes and businesses
    l. Challenges
        i. Finding necessary data
        ii. Determining what data relevant to the project
        iii. Risk making Oak Park less sustainable
3. Project Budget
    a. Gas money (Field Trips to Oak Park for tours & demonstrations)
        i. Five roundtrips
            1. Public Transportation – 1 roundtrip x $4.50 per person x 2 people x 5 trips = $45.00
            2. Automobile – 20 miles per roundtrip x 5 trips x $0.50 per mile = $50.00
    b. Energy Audit
        i. $675
    c. Printing (Deliverables, Agendas, Posters, Brochures)
        i. $200
    d. Final Presentation (Tri-fold board)
        i. $5
    e. Data (Information From External Sources)
        i. $500
4. Designation of Roles
    a. **Minute Taker** - Casey
    b. **Agenda Maker** - Jessica
    c. **Time Keeper** - Jeremy
    d. **iGroups Moderator** - Casey