



IPRO 357 : The CommunIITy Collaborative

project plan spring 2011

Introduction

Cover page	1
Table of contents	2

Team Charter

Team overview _____	
Roster, strengths, needs and expectations	3-6
Team identity - name, logo, motto	7
Team purpose & objectives _____	
Team purpose & objectives	8
Background _____	
Customer sponsors	8
User problems	8
Science and technology	8
Historical precedents	8
Ethical issues	8
Business or societal costs	9
Proposed implementation details	9
Similar solutions or literature	9
Team values statement _____	
Desireable team behavior	9
Problem addressing protocol	9

Project Methodology

Work breakdown structure _____	
Strategy to solve problem	10
Team structure diagram	10
Gantt chart	11,12
Expected Results _____	
Details on expected results	13
Expected data	13
Potential products for testing	13
Potential outputs to be produced	13
Expected results in terms of deliverables	13
Summarize challenges, risks & assumptions	13
How will results be used	14
Project Budget _____	
Detailed budget	14
Designation of Roles _____	
Assigned Roles	14

Team member roster, strengths, needs and expectations...



Anderson, Aaron

Major: Architectural Engineering

Year: Senior

Strengths: HVAC focus, including HVAC design, sound and vibration control, building envelope design. Good writing skills.

Things to improve: Business awareness, understanding the customer, market sense, control systems.

What I want out of the project: To learn how to better understand a market how to deal with a potential customer, how to design for advanced controls systems/building AI.



Bigart, Kyle

Major: Architecture

Year: Senior

Strengths: Ability to formulate concepts into feasible design strategies. Overall building understanding, and great presentation skills.

Things to improve: Understanding the bottom line and how it affects architecture in the real world.

What I want out of the project: Gain an insight to the world of community developments and how the new age in design and technology will be affecting home ownership and residential design.



Blakely, Luke

Major: Business

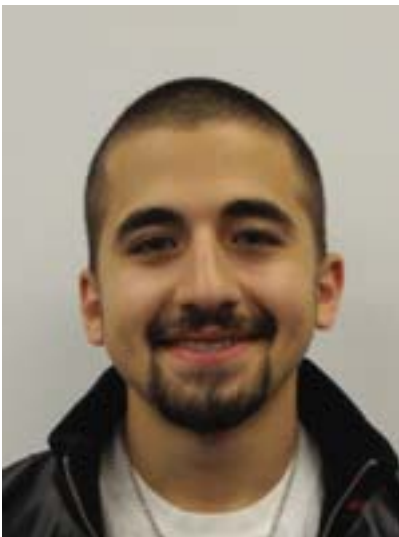
Spec: Marketing

Year: Senior

Strengths: Taken a number of classes in marketing research and sales. I have vast marketing experience so i can ensure that this project will be marketable and desirable. I also have leadership skills and can bring some organizational management. Also, have attended several real estate seminars.

Things to improve: I would like to gain some more knowledge about the real estate industry and the development of new properties.

What I want out of the project: Experience of working with students of various majors and have the opportunity to be part of a successful diverse team. There is much that I can learn from the various majors in my team and I'm sure i can share my marketing knowledge with my team mates.

Continued...**Chapa, Bernardo****Major:** Architecture**Year:** Senior**Strengths:** ?**Things to improve:** ?**What I want out of the project:** ?**Hagopian, Matthew****Major:** Chemical Eng**Year:** Junior**Strengths:** Teamwork, design, research, creativity, Computer knowledge, communications.**Things to improve:** Leadership skills and communication ability.**What I want out of the project:** Learn leadership, communications. Learn to work in groups and on my own. Gain a better understanding of the topics at hand. Etc.**Handzhiyski, Lachezar****Major:** Civil Engineering**Year:** Senior**Strengths:** I have coursework experience in micro- and macro-economics, as well as in the analysis of capital investments. I have taken primarily structural engineering courses and would like to develop the structural design of the future building. Knowledgeable with: Microstation, AutoCAD, SAP2000, C++, Mathcad, and Pascal.**Things to improve:** I am hoping to gain real-life structural design experience. I am very excited to find out more about the sustainable technologies in modern homes.**What I want out of the project:** Prove that everyone can take responsibilities, meet deadlines, and work together with people from different academic backgrounds. It is an excellent opportunity for one to demonstrate analytical and technical, as well as leadership and teamwork skills. I am hoping that at the end we will have not only a complete IPRO project, but also one that would be a solution to problems arising in everyday life.

Continued...**Harmon, Stephanie****Major:** Physics**Year:** Senior

Strengths: Unique problem solving skills and a different perspective other than architecture and engineering. Experience in presenting personal research and in leadership roles.

Things to improve: Understanding of design/engineering/community code requirements that go into building a home.

What I want out of the project: Learn about the housing market and all steps involved in designing, building, and marketing a home.

**Horchin, Marina****Major:** Architectural Eng**Year:** Senior

Strengths: I am majoring in Architectural Engineering and can benefit the project with my MEP design skills. However, I am looking to also contribute on any scale possible, by pushing my skills and learning new ones.

Things to improve: I am currently taking an advanced level Energy Modelling class, and would like to perform the building performance calculations and energy simulations so we can adjust for the best envelope and lowest energy usages.

What I want out of the project: I am expecting great team-work, a smart business plan and marketing research, excellent architectural and engineering design resulting into a perfect and feasible smart-home design suitable to the specific neighborhood.

**Jani, Arjun****Major:** Civil Engineering**Year:** Senior

Strengths: Proficient computer knowledge at using Autocad 2000-2011, Mathcad, SAP(structural analysis program), Adobe Photo shop, and Microsoft Office 2000-2010.

Things to improve: I would like to improve my skill in communication and writing.

What I want out of the project: I want to gain my knowledge in business/marketing and entrepreneurship in this IPRO. I am also looking forward to work with different students with different majors/specialization. I can also work very well in a team.

Continued...**Moreno, Saul****Major:** Architecture**Year:** 5th Year

Strengths: Computer software: dreamweaver, adobe illustrator, photoshop, indesign, CAD. Presentation skills involving planning and organization, as well as overall graphic design. As well as analytical research skills and problem solving.

Things to improve: I would like to improve my speaking and writing skills. I have ideas but sometimes I can not find the right words to express myself.

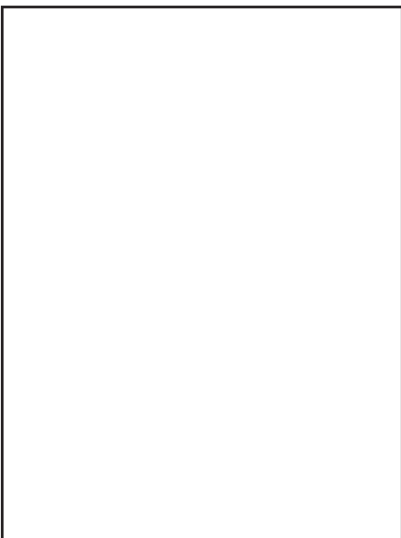
What I want out of the project: I expect that after participating in the IPRO I will get a better understanding as to how publications work. I want to understand how I can begin to implement these tools into my projects and get my voice out there.

**Roseen, Michael****Major:** Architectural Eng**Year:** Senior

Strengths: I bring systematic, logical thinking to the table along with a background in structural and HVAC systems analysis.

Things to improve: I plan to use this opportunity to improve my ability to work well with a team, and to test my ability as a leader. Also, I'd like to apply knowledge learned in the classroom to a real-world design problem.

What I want out of the project: I expect for this group to improve on the designs and concepts of preceding IPROs. I also expect to learn the extents of my knowledge in the field of architectural engineering.

**Sullins, Michael****Major:** Psychology**Year:** Senior

Strengths: Adapting to new situations

Things to improve: Working with a large group to complete a task.

What I want out of the project: Finish our goals on time.

Team name...

S USTAINABLE
MATERIALS
AND
AFFORDABLE
RESOURCEFUL
TECHNOLOGY

Team logo...

SMART

Team motto...

Smaarter homes for a smarter tomorrow

A. Team purpose (vision, mission)

A. Create a marketable home with self-sustaining, zero-energy technological systems. This home will not only be tailored to each homeowner, but its design will be duplicable and set a new standard of energy-cost efficient housing.

B. List the objectives that the team has

1. Decide what type of housing and target buyers we will be gearing the design and final product toward.
2. Use research done by past IPros to design sustainable, zero-energy housing for the city of Evanston, IL.
3. Find the best way to incorporate the work done by previous IPROS while being more cost-conscious and overall more cost-effective
4. Get involved in researching the exact needs of the Evanston community by contacting local businesses and real estate agencies.
5. Follow the zoning restrictions and building codes of Evanston as frequently as possible.
6. Make our design a viable option in the housing market by researching the demographics of Evanston.

Background

1. Customer sponsors

- This is the third semester for the zero community ipro. Currently we do not have any sponsors.
- This ipro grew from the interest of surrounding Chicago municipalities. We have Evanston, IL as the potential customer for the project.

2. User problems

- A large part of the struggle of the design of this model community will be trying to reduce the amount of energy and resources consumed not only in the construction of the community, but also in the daily life of the future residence.

3. Science and Technology

- The first is passive systems which include designing around proper solar orientation, the use of sustainable materials, and the use of cross ventilation.

4. Historical precedents

- The community takes advantage of solar panels, geothermal heating and cooling, super insulation, high efficiency windows and heat recovery ventilation. These developments signify new ways of thinking when it comes to renewable energy and should begin to set the standard of new, developing areas.

5. Ethical issues

- Designing a community that is able to generate power from renewable sources on site means the community would not be as dependent on public companies like ComEd or GE. But the financial returns would not be optimal even with an independent power source.
-

6. Business or societal costs

- If our community was built, the members would have to put a fourth of the initial costs down for the house. Our goal is that the investors will ultimately be compensated by the money they save with all of these alternative energy sources instead of the traditional sources.

7. Implementation outline for solutions

- Our design and conclusion will be presented first to the City of Evanston. We will try to give Evanston and ultimately other towns a clear picture of the initial costs of this development and the payoff when proper renewable energy sources are put in place.

8. Research about similar solutions

- Companies like “The house builders” and “Geo Home” have constructed many sustainable/ eco friendly homes and their house plans are also Energy Star certified. These companies have attracted many customers to build a green and energy efficient homes.

Team Values Statement

PLACE HOLDER FOR TEAM VALUES STATEMENT

Desired Behaviors

- a. Attitude of team members should be positive and take initiative as well as team members should treat each other with mutual respect.
- b. No team members shall criticize or judge another teammate for his or her opinion.
- c. Effective communication skills are very important for a team’s success. These include expressive skills as well as listening skills. All team members are encouraged to engage in-group discussions and share opinions while respecting other individual’s ideas.
- d. The commitment that is developed due to the responsibility is a critical factor in the team’s success. All team members are expected to take responsibility of completing the assigned tasks on time.
- e. Team members are expected to come on a regular basis to scheduled meetings and meetings outside of class.

Addressing Behaviors

- a. According to the codes of ethics the problems will be addressed properly.
 - b. Any issues are to be brought up for discussion at the beginning of each class meeting.
 - c. All members in the team will have a chance to discuss the problem as well as voting for the final decision.
 - d. Problems are preferred to be discussed in person rather than over the internet, because a member cannot be conveyed through typing and points may be misconstrued.
-

Work Breakdown Structure

1. Describe how your team will go about solving the problem?

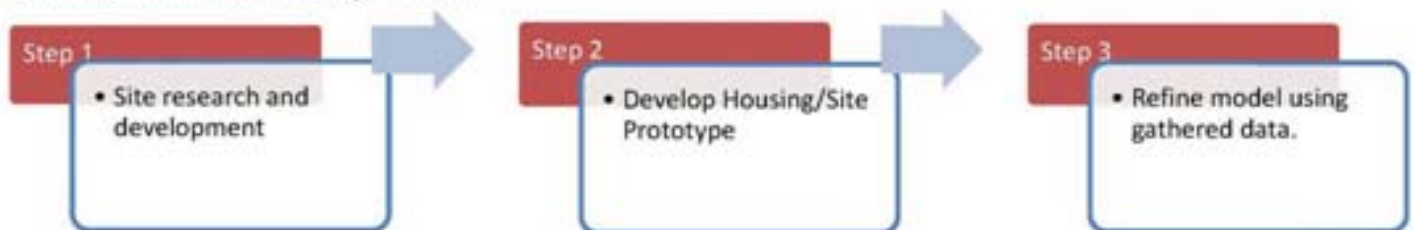
The team will be broken down into three separate groups which will report to one another over the course of the semester. The focus this semester will be to develop a zero-energy home for the city of Evanston. In order to do so we will take information the previous IPROs and further develop the business and marketing aspect of the project. In order to accomplish this we will break into sub-teams and report to one another on a bi-weekly basis.

Each sub-team will be responsible for its own documentation and progress, the sub-teams will work closely with each other to ensure proper communication, thus preventing wasted or duplicated efforts. The Sub-team leaders are responsible for managing the progress of their respective sub-teams. Inadequate progress will be addressed by the entire team, as well as the project advisor, to create a productive solution to the problem.

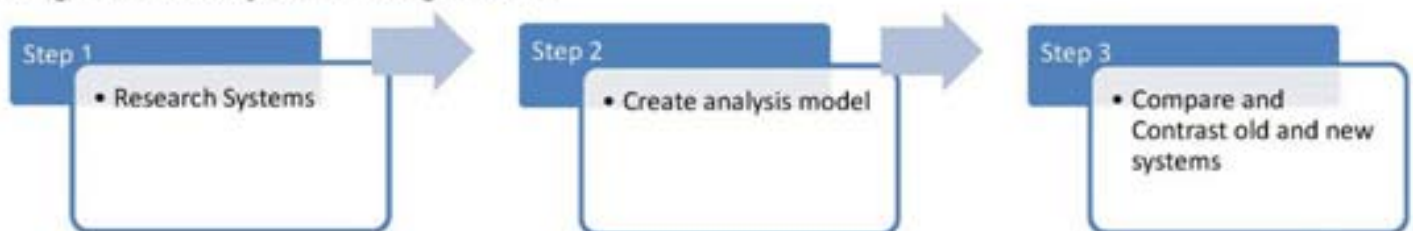
The architectural and design team is responsible for developing the prototype as well as the site for the project. The Engineer and systems team is responsible for gathering and developing the information on the systems for the project. The marketing team is responsible developing the project and making it marketable for the city of Evanston.

2. Create a team structure.

Architecture and Design Team



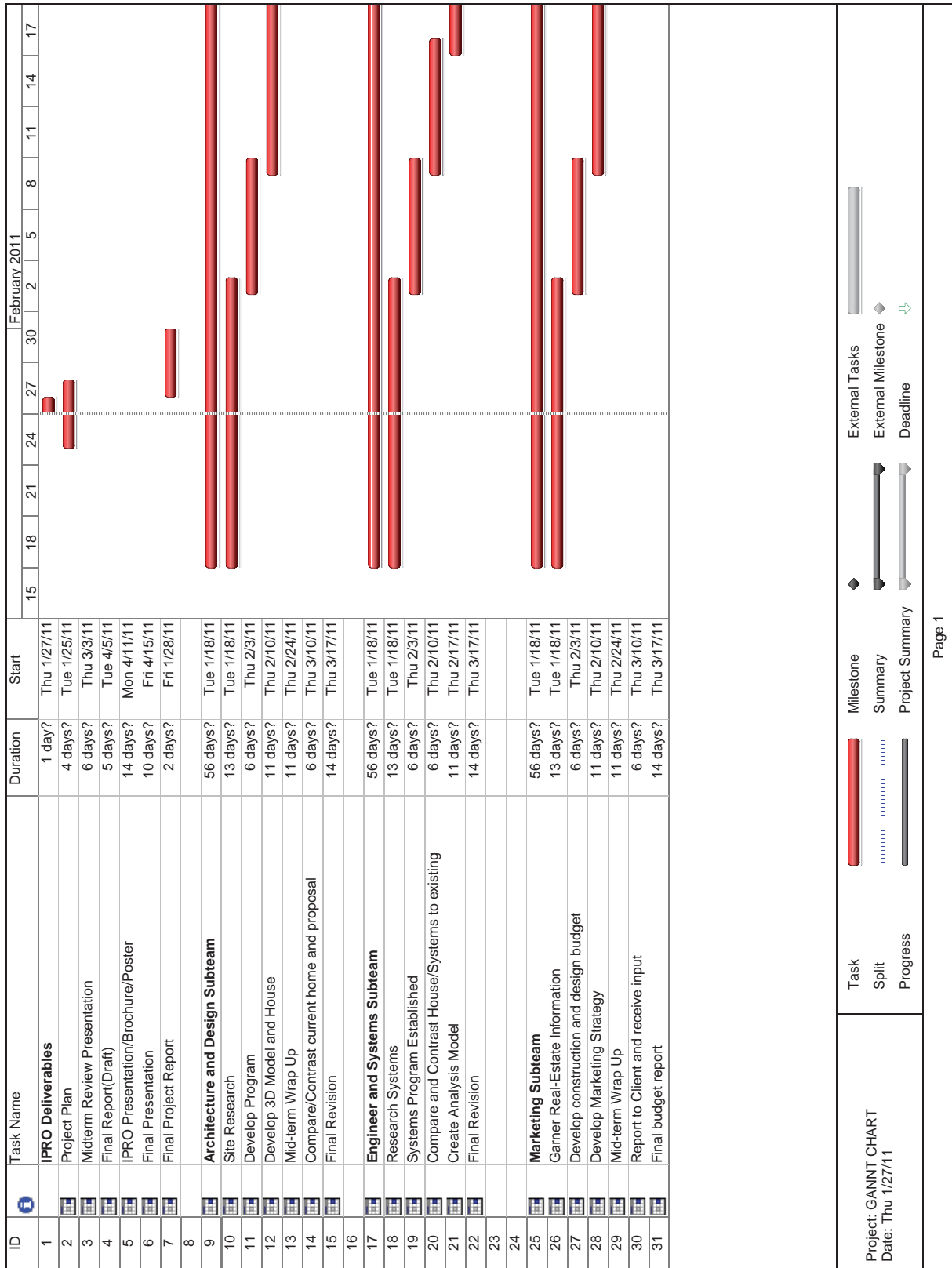
Engineer and System Design Team



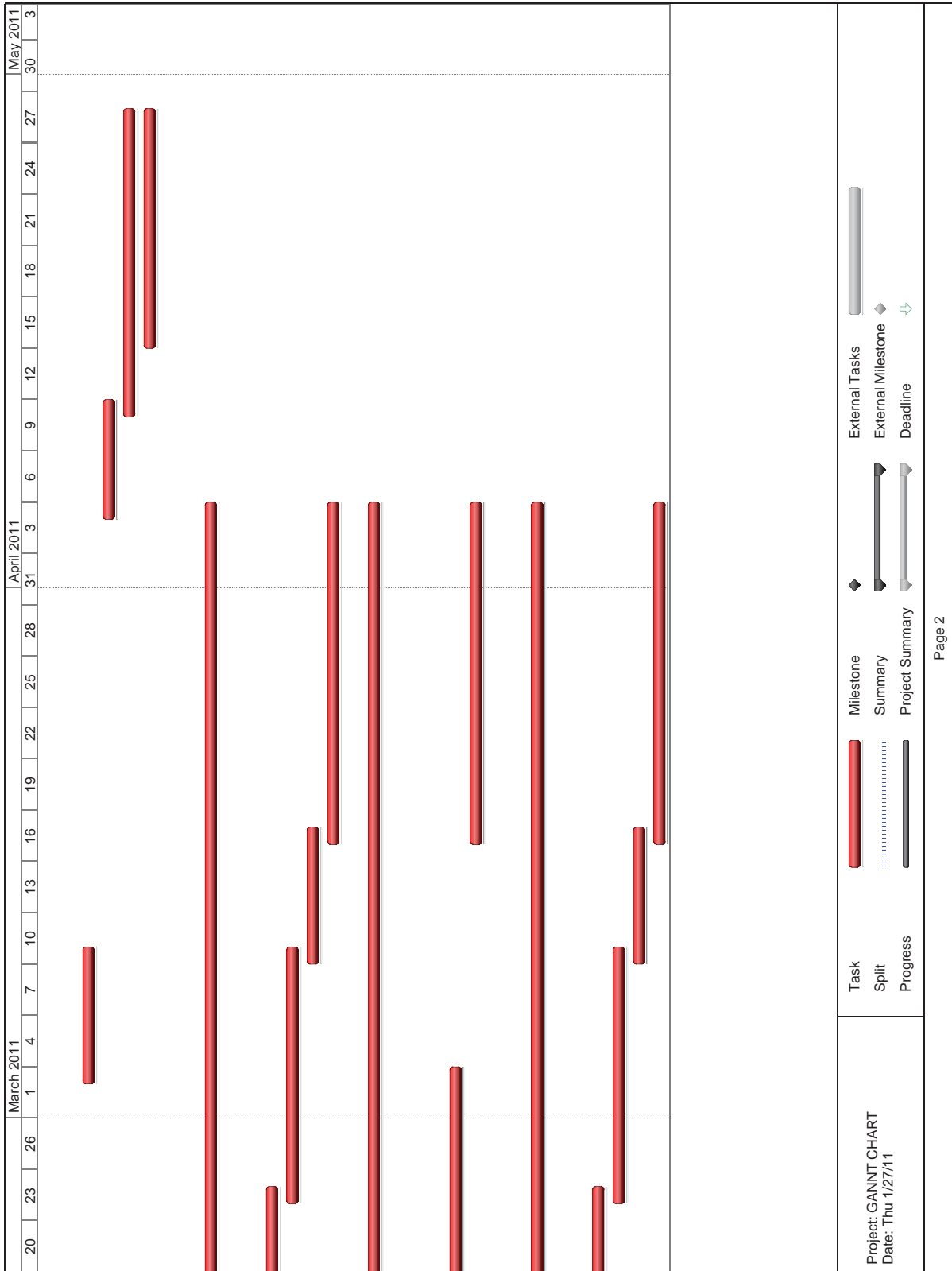
Marketing Team



3. Gantt chart



Gantt chart continued...



Expected Results

A. Provide details on expected activities involved in the project.

- Study the market in which we will submit our project to have a better idea of what types of clients we are looking for, and what our clients want.
- Research all of the possible components that would help our house be sustainable, and test/research their performance to know what components we should use to make our house more sustainable.
- Have a business proposal with the expected cost of the project, the profit, the payback time for the sustainable components of the house.
- Design different types of houses and select which one works better for our project.

B. Describe expected data from research or testing involved in the project

The data we expect to have from research will include the different types of components that are available in the market that will help our house be sustainable, we expect to have: the cost, performance, payback time, life time of the product, maintenance.

We will also make an effort to propose ideas that are not in the market yet, with these ideas we will investigate what are the expected results.

C. Define potential products resulting from research and testing.

The potential products that we are looking to find are products that will decrease the use of water, gas and electricity, with a goal to have a lower bill in our house.

D. Define potential outputs to be produced through each of the project tasks.

The potential outputs that will be produced through each of the project tasks will have the purpose of having a house that will reduce the resources that are used: electricity, water and gas with the purpose of reducing the cost of operating the house, and affect the environment the least possible.

E. Describe the expected results in terms of deliverables that will be produced by the project team, i.e., a working prototype, survey or focus group feedback, grant proposal, etc.)

Produce an efficient affordable residence that could be used as a prototype that can be used to help design the community of tomorrow. Accompanying this will be space and energy models as well as marketing research to statistically back up the team's findings.

F. Summarize the challenges, risks and assumptions that you can anticipate affecting your results.

Many of the risks and assumptions that we will have to make that could affect our results are that many of the products we might be using do not perform as well as they say they do, because of the different use the house has, the location, climate, etc.

G. Discuss how the expected results will be incorporated in a proposed solution or contribute to a solution process.

We will have a solution once we achieve a house design and performance that accommodates the market our clients are looking for.

Project Budget

Transportation:	\$ Unknown
Architectural Models:	\$ 200
Research Printing and Boards:	\$ 150
Team Building Event Light event to promote fellowship:	\$ 150
Total= \$ 500	

Designation of Roles

We have chosen to break up in three different groups, design, engineering, and marketing. Each group will have a leader that will oversee their own individual small group. Group leaders will then keep in touch and work as a leading team.

	Design	Engineering	Marketing
Group			
Leaders	Kyle Bigart	Marina Horchin	Steph Harmon
Members	Bernardo Chapa Saul Moreno	Aaron Anderson Arjun Jani Lachezar Handzhiyski Matthew Hagopian Michael Roseen	Luke Blakely Michael Sullins