1.0. Objectives

A. Create a program for a sustainable city that incorporates all sustainable design practices and is affordable and desirable to live in.

2.0. Background

- The customer for this project will be the Chongming City Government, a part of the Shanghai provincial government.
- The current model for urban design in China does not include sustainability principles as a design criteria. The central government is committed to designing a sustainable city, but the local designers in Chongming lack the knowledge to design sustainable cities.
- There are countless technologies that will be employed in order to achieve sustainability. They include: PRT, wind energy, solar energy, tidal energy, sustainable design with thermally insulated practices and an overall mindfulness of decreasing energy consumption
- There have been many plans put forth for sustainable design throughout the world, but there in no existing built city that is sustainable. Our plan will join the many others that are waiting for funding to become reality.
- Some ethical concerns whenever designing a completely new city is what to do with the existing population that will be displaced due to the new city design. Our plan will incorporate an equitable solution for this problem.
- The societal costs of this problem are evident throughout the world. Pollution, congestion, and the diseases that accompany the byproducts of these problems are all societal costs to this problem not being solved.
- Our plan will be submitted to the Chongming Government through contacts at Tonji University. Because of the political nature of the government in China, none of the plans that are made can be implemented without the approval of the government.
- Other examples of sustainable design include plans by Foster and Sons for the UAE and Arup in their design for the South end of Chongming Island.
- Much of the designs are incorporate different plans that have been proposed for various contests throughout the world. Because sustainable design is a very hot topic right now, there is a lot of research available.

3.0. Methodology/Brainstorm/Work Breakdown Structure

1. Designing a sustainable city that is desirable to live in is a monumental task that includes all disciplines and requires the integration of all disciplines at a level that is seldom accomplished anywhere in the world.
2. Our team will research existing plans and integrate the aspects of these plans that are reasonable, but also try to push the limits and come up with new ideas to solve the problems associated with sustainable design. Again, integrating our research will be key to being able to solve the problems that are at hand. We have scaled back the process slightly in order to be able to accomplish the design within the semester. Instead of designing each individual aspect of the city, we will instead create an outline that can be used as a model of how to plan a sustainable city.
    - We will need to view the problem within the context of the following four subjects: Housing, Public Policy, Urban Design and Public Transportation.
    - As solutions are found for each of the problems that come up, they are presented to the group and the groups discusses them, but ultimately, the subgroup charged with a

solution for a subtask will have the final say as to how the problems will be solved.
    - It is near impossible to perform actual tests on any of our proposals, since no one has ever integrated all of these technologies to the degree that we will be integrating them. In order to overcome this hurdle, we are trying to look at other similar situations when technologies were combined for the first time to solve a problem in a city and observe what issues were presented with the integration. From these observations, we are trying to avoid any possible conflicts with our proposed solutions.
- Each subgroup will present research as to how their type of technological solution has worked in the past, and then this research will be presented and discussed within the larger group. There will be no actual testing of the technologies since they are so macro in scale and therefore cost prohibitive to test.
- IPRO deliverable will be generated through a collaborative effort with all of the subgroups, through a leader responsible for deliverables.
    - The tasks involved with producing the deliverables on time are to assign each subgroup a portion of the deliverable that is relevant to their group and have each subgroup turn that portion in to the deliverables leader in a timely manner.
- Many of the solutions that are being used have been refined through a group wide brainstorming session that occurs weekly and provides each subgroup to present their work to date
    - These sessions will result in more throughly thought out design in the long run

4.0. Expected Results

- The planning and design that will be involved in the project will result in a model of how to design a sustainable city and how to incorporate various technologies to achieve maximum results
- There will be no testing of any products for this IPRO
- There will be no products as a result of this IPRO
- The output of the assigned tasks is outlined above in the first bullet point
- The expected results of the deliverables will be an outline of how to design a sustainable city.
- The results that we expect will address the problems and concerns of our clients. They want to have a working model of a sustainable city and be able to be one of the first countries in the world to have a working sustainable city. Our final design will address their concerns and provide them with a solution to their problem.
- The results that we come up with will represent the proposed solution.

5.0. Project Budget

The project budget is the listing of the money that you propose to spend in order to produce the desired results defined for the project.

- There will be no budget for the project, as no money is needed for creating a plan that cannot be tested. Last semester, some members of the team had the opportunity to visit the site in China and therefore all of the money that was used on this project was used in a different semester by a different group.

6.0. Schedule of Tasks and Milestone Events

- Division of groups: Week 1
    - Divisions will be based both on the expertise of each individual and the interests of

individuals (2-3 hours)

- Producing outline of deliverables and defining the problems to be tackled:Week 2-3
    - Being able to understand the project as a whole is vital at this point. (10-12 hours)
- Gathering research in each subgroup:Week 4-5
    - Because research on this topic is so abundant, the real challenge in this section of the project is finding pertinent research that has new and different things to say about the problem. (15-20 hours)
- Presenting research and recommendations to the entire group for discussion and critiquing purposes:Week 6-7
    - The sharing of the research and subsequent brainstorming that occurs in order to refine the proposed plans is vital to making the project successful (10-15 hours)
- Modification and incorporation of the outcome of the brainstorming session:Week 7-12
    - As the groups continue to refine their individual portion of the project, there is still a need for collaboration between the groups (50-60 hours)
- Collaboration of modifications to form coherent final program for the city: Week 12-15
    - Bringing the whole project together will be the most difficult part of the project, but the most important also (50-60 hours)
    - Collaboration throughout the project will help this portion of the project go smoothly.

All tasks will be performed by subgroups, and collaborative meetings will be held on an as needed basis. The number of team members that is needed for each part is all of the team members.

7. **Individual Team Member Assignments**

Team members, background/pertinent experiences and groups:

- Transportation
    - **David Durra-Civil Engineering, China cities project participant from Fall semester 2007
    - *,**Anthony Saracino-Architectural engineering
    - Andrew Kleps-Political Science
- Housing
    - Cameron Zangenehzadeh-Architecture
    - Ana Untiveros-Architecture
    - *Ivan Nockov-Architecture
    - Shunsuke Nakano-Architecture
- Urban Planning
    - *Christopher Chiu-Polical Science
    - Martin Cooper-Architecture
    - Kevin Lerash-Architecture
    - Kyle Pritchard-Architecture
- Public Policy
    - Lihua Jiao-Dalian Provincial Employee, urban planning
    - Jun ZhengSungano Ziswa -Dalian Provincial Employee, urban planning
    - *Ryan Szanyi-Architecture

* Denotes sub-team leader

**Denotes overall group leader

- All team members were assigned to groups based both on interest and experience. Because of the fact that there were many more architects than other majors, the groups had to be broken

down not completely along the lines of classical skill sets. In addition to there being more architects than other majors, some of the majors of the participants fit only loosely into the groups that were needed, but the diversity of knowledge within each group is a strength.

8.0. Designation of Roles

1. Assign Meeting Roles
    - **Minute Taker**: Tony Saracino
    - **Agenda Maker**: David Durra
    - **Time Keeper**: Andrew Kleps
2. Assign Status Roles
    - **Weekly Timesheet Collector/Summarizer**: Tony Saracino
    - **Master Schedule Maker:** David Durra
    - **iGROUPS:** Ryan Szanyi