Project Plan
Alumni Memorial Hall Renovation, I-PRO 335
Spring Semester 2008
Illinois Institute of Technology

IMAGE SOURCE:
http://www.ruhr-uni-bochum.de/kgi/projekte/rub_expo/k5/k5_t4.htm

Advisors:
Ralph Muehleisen
Eduardo DeSantiago

1.0 Objectives

The scope of I-Pro 335 is both a conclusion to unfinished work from the previous two semesters along with new projects that will start and end this semester. Work to be concluded and closed-out from last semester:

- Final LEED (Leadership in Energy and Environmental Design) documentation and identification of individuals that might be part of a LEED team should the school desire to pursue that route.
- Final design of Americans with Disabilities Act (A.D.A.) elements including a re-design of the elevator, and approval by the client.
- Using the Code of Ethics written last semester as a base line, the code will be rewritten to strengthen its objective to provide guidance for the I-Pro.

New projects to begin and completed this semester are:

- The roof re-design- Green roof options. This may also include storm water retention and grey water recycling systems, as well as any updates to the buildings primary plumbing systems.
- Heating, Ventilation, and Air Conditioning (HVAC) - Lab hoods, air conditioning load calculations and Hydronic Heating.
- Electrical systems design- Illumination calculations and design, Alarm systems, and 'Off-heating' load calculations from equipment to be housed in Alumni Memorial Hall (A.M.H.).
- Construction schedule.
- Cost estimate.

2.0 Background

Alumni Memorial Hall (1945-46) is Mies van der Rohe's first classroom building on the I.I.T. campus. The building is a steel frame structure with brick infill. While the building as a whole is not under historical preservation status, the exterior element are and the University has decided to extend the historic status of the campus as a whole to the treatment of all the existing buildings of the original Mies master plan.

Currently the building is home to the Departments of Civil, Architectural and Environmental Engineering. The buildings space uses include a material testing lab, computer lab, classrooms, graduate and PhD office space, Professor's Offices and administration offices

I-Pro 335 Alumni Memorial Hall Renovation is in its third semester. This semester will also be the last semester for I-Pro 335.

3.0 Methodology/Brainstorm/Work Breakdown Structure

Utilizing the research, data collection and background information produced the past two semesters we are positioned to start making qualified judgments that will inform conclusions and recommendations. These conclusions and recommendations are intended to act as an independent analysis that can be utilized in further schematic and design development phases.

Work to be Concluded:

The LEED work to be completed from last semester will be finalized with the completion of templates that breakdown the points needed to acquire LEED ratings. Along with the work to finalize the LEED analysis a recommendation will be made that identifies by title and/or position the members that we see as necessary to form the LEED steering committee that would over-see the process and work with U. S. Green Building Council.

Further A.D.A. design development must be completed to re-work the elevator's location. As it stands right now, the elevator is seen through the windows and may produce an aesthetically unpleasing result. New technologies in lift design may help in this solution or possibly moving the elevator to another part of the building may be required.

The Code of Ethics produced last semester was a good first attempt and stands as a good foundation. However, several elements just fall short of making it complete and coherent. Rather than writing a new one, it was our opinion that to take the existing one and rewrite it was a better use of our resources and would make a more valuable Code in the end.

New Projects:

The green roof design was a lead-in to our conversations about ultimately what to do about water management on the site. Plumbing as a whole will have to be addressed by the I-Pro if we are to have a complete understanding of what systems should be researched and can be utilized most efficiently. Several systems that have already

been discussed are the use of grey and rainwater recycling in toilets, a cistern to hold rainwater run-off to help curb erosion, and what are the systems that can be implemented to update the normal building plumbing to be more efficient.

HVAC issues were some of the most criticized aspects of A.M.H. on the survey last semester. The perception is that the heating and cooling of certain areas of the building are inadequate during the summer and winter, if not all year. This leaves a great deal of research that can be accumulated on ways to improve this environmental sense can be redesigned to account for these deficiencies. In addition there needs to be an analysis of what kinds of hood fan exhaust needs to be provided for in the lab areas, and does this system need to be dealt with separately from the normal system to prevent contaminated air from being re-circulated throughout the building.

Electrical systems are high on the priority list, and are required by law, to be upgraded and brought up to code. This means a complete inventory and re-design of what the building's new demands will be. The first step will be establishing lighting needs; next making calculations based on those needs and finally design. This will also include updating the alarm system for security, safety and code reasons. Additionally, there is a significant amount of 'off-heating' that is produced in the computer labs, it will be investigated to see if this heat can be captured and re-used.

Construction schedule and cost estimation are vital to the success of a project. Change management orders are costly and can gravely affect the outcome of a project for the owner, architect and contractor. Scope, schedule, and cost are the three elements that make up a change order. Being able to understand how altering one of these elements creates pressure on the other two is critical to project management. By utilizing RS Means and either Microsoft Project or Primavera the students taking on this task will gain insight into how critical these jobs are.

4.0 Expected Results

Capitalizing on the previous semesters work, we plan to conclude a year and half effort by making recommendations based on the research, along with offering design solutions for what we have determined to be the immediate issues in the renovation

of Alumni Memorial Hall. The grist of the work will be compiled in a final package to be presented to the clients during finals week. The intent of the package will be to compile all of the work and organize it in a logical way to allow anyone examining it to understand the intentions, along with providing a wealth of collaborative knowledge. The work will be compiled via drawings, calculations, text, and diagrams

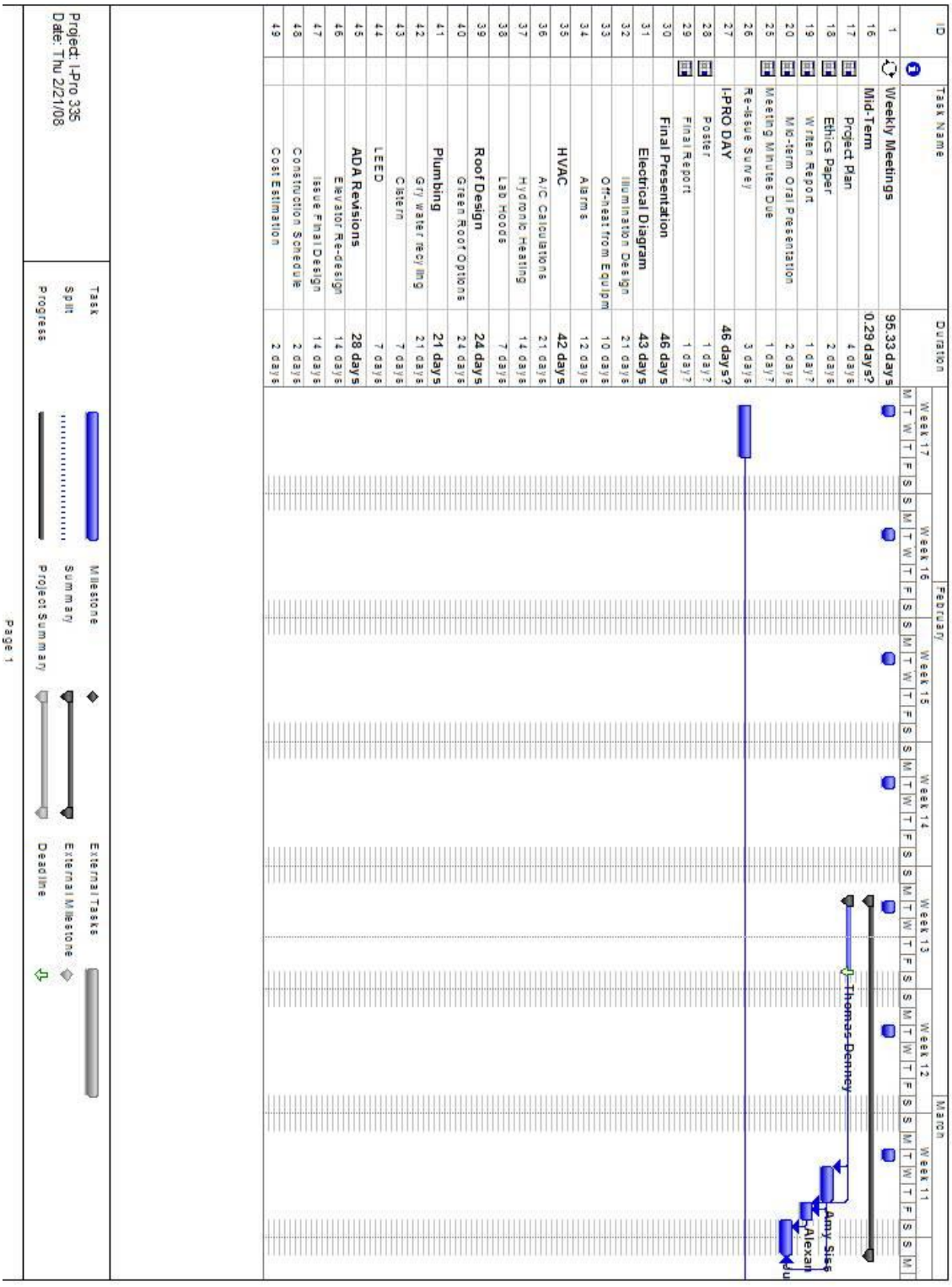
5.0 Project Budget

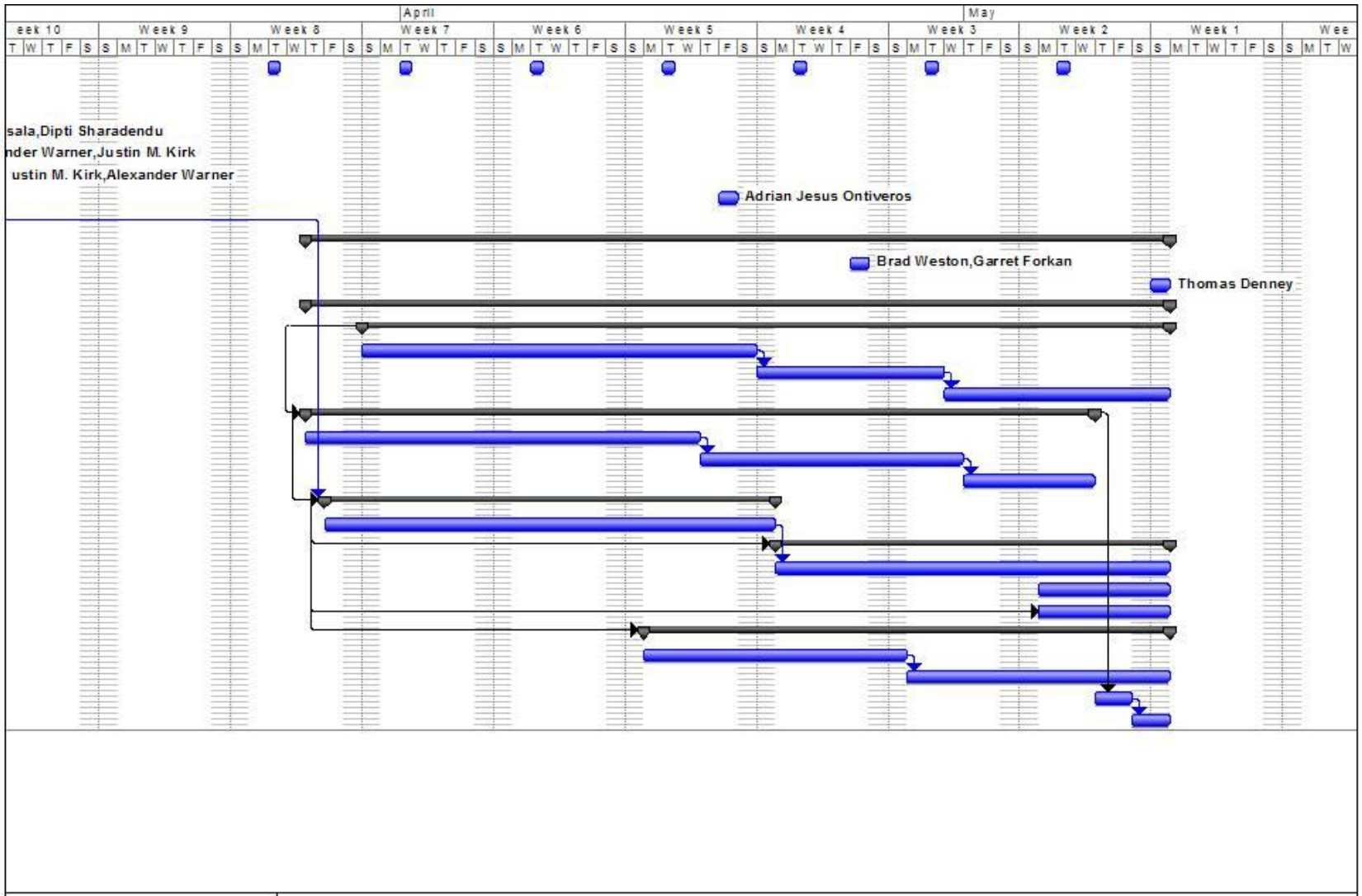
Our budget this semester will be tapped heavily with a small safety net in case of unforeseen expenses. As we go further into a final analysis and final proposal for the LEED work, we will need to acquire the LEED Existing Building Book. Based on the format and presentation space granted on I-Pro along with the amount of work that will need to be shown this semester we anticipate extra printing needs that might not be covered by the I-Pro office. Finally as Project Leader I believe it is essential to have a team/group outing shortly before I-Pro day that will serve two (2) purposes: 1. Help to solidify the confidence we have built over the semester working as a team, and 2. Allow us to close any loose ends before presentation day via practicing our presentation.

LEED Existing Building Book	…$150.00
Additional Printing for I-Pro Day	…$75.00
Group Outing before I-Pro	…$275.00

Total: $500.00

6.0 Schedule of Tasks and Milestone Events




April
May
eek 10
Week 9
Week 8
Week 7
Week 6
Week 5
Week 4
Week 3
Week 2
Week 1
Wee
sala,Dipti Sharadendu
nder Warner,Justin M. Kirk
ustin M. Kirk,Alexander Warner
Adrian Jesus Ontiveros
Brad Weston,Garret Forkan
Thomas Denney
Project: I-Pro 335
Date: Thu 2/21/08
Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

7.0 Individual Team Member Assignments

Thomas Denney 5th year Architecture
Experience: Had this IPRO last semester, knowledgeable of LEED, works in architectural firm.

- Project Manager
- Project Plan
- LEED Final Recommendations
- Final Report to Advisors

Michael Ericksen 4th year Civil Engineering
Experience:

- I-Pro Final Report
- LEED Final Recommendations
- Rain Water Cistern Storage

Garret Forkan 4th year Civil Engineering
Experience:

- Poster and Brochure
- Rain Water Cistern Storage

Kieran Healy 4th year Architectural Engineering
Experience:

- I-Pro Final Report
- HVAC Load Calculations
- Green Roof Design

Ei Sheng Hong 4th year Civil Engineering
Experience:

- I-Pro Presentation
- Elevator Design Development

Yong-Wan Kim 4th year Civil Engineering
Experience:

- Re-issuing Survey and Quantifying Data

Justin M. Kirk 4th year Civil Engineering
Experience: Interned past 3 years for civil engineering firm, handled rainwater runoff and storage and oversaw LEED work.

- Mid-Term Presentation
- Grey and Rain Water Recycling System

Adrian Jesus Ontiveros 5th year Electrical Engineering
Experience: Focusing on power engineering and have had several internships with Argonne National Laboratory.

- Meeting Minutes

Project Plan
Elevator Design Development
Illumination Calculations

Eric Rogers 4th year Civil Engineering
Experience:
Final Report to Advisors
Construction Schedule

Nathaniel Roth 4th year Civil Engineering
Experience:
I-Pro Presentation
Cost Estimation

Dipti Sharadendu 4th year Electrical Engineering
Experience: Interned in laser and systems division of Miyachi Unitek Corporation, and core control systems and communications ECE classes.
Ethics
Alarm Systems
LEED Final Recommendations
A.D.A. Compliance

Amy Sissala 4th year Architectural Engineering
Experience:
Ethics
HVAC Load Calculations
LEED Final Recommendations
Elevator Design Development

Alexander Warner 4th year Electrical Engineering
Experience:
Mid-Term presentation
Off-Heating Calculations from Equipment
Electrical Load Calculations

Brad Weston 5th year Architecture
Experience: 5 semesters of comprehensive building design studios specializing in energy building systems and modeling.
Poster and Brochure
A.D.A. Design Development
Green Roof Design

8.0 Designation of Roles

Architect of Record, Project manager: Thomas Denney
Minute Taker: Adrian Jesus Ontiveros
Group Leader Civil E.'s: Nathaniel Roth
Group Leader Elec. E.'s: Dipti Sharadendu
Agenda Maker: Kieran Healy
LEED Specialist t for Arch. E.'s: Amy Sissala
LEED Specialist for Architects: Brad Weston
LEED Specialist for Elec. E.'s: Alexander Warner
LEED Specialist for Civil. E.'s: Michael Ericksen
Time Reporting Manager: Garret Forkan
Digital Files Manager: Ei Sheng Hong