1.040/1.401
SYSTEM & PROJECT MANAGEMENT
SPRING 2004

TERM PROJECT PHASE 2:
TERM PROJECT ASSIGNMENT & DESCRIPTION

DUE: MARCH 15, 2004

Lectures:	Mon & Wed,	1:00 PM – 2:30 PM
Recitations:	Fri	3:00 PM – 4:00 PM

I. DESCRIPTION

For this second phase you do an initial investigation into two projects of your choice. Get your feet wet, look in the web, read journal articles, magazines, newspaper and find interesting engineering and management

features you want to learn more about. Use a project related to other subjects if you want, and most of all, have fun!

Groups

We have assigned you to groups of 5 students.

Projects

Section 3 lists the projects in which you showed interest during the 1st phase of the term projects (TP1). Section 3 also lists some projects that have just been completed or are in progress or planned at MIT. You will be working on two projects from this list for this phase of the term project.

In order to select on which particular projects you will be working, you will need to send an ordered ranking of the projects below – in other words, send a list of the projects below, ordered according to their interest to you. The topmost project in this list should be your most desired project. We will assign projects to groups based on a set of simple rules:

- If a project has been proposed by only members of a single team and the proposers' team wants the project and still needs it to fulfill their quota of two projects, their group can have it.
- If two or more teams including proposers of a given project want and need the project to fill their quotas, it is allocated to one of them based on a lottery.
- If the project is not taken by a proposer's team, it is given to the group that ranks it the highest and needs it to fill their quota.
- If two or more groups in still in need of a project rank a project equally, it will be assigned to one of those groups based on a lottery.

Note: Because of the algorithm used above, you can consider it a "sure thing" to get a project if it is one that you or someone else in your group uniquely proposed and if you have not already received two projects ranked above that project. So to spare yourself work in ordering the projects, you can take advantage of the fact that you only have to list as far to include two projects that a member of your group uniquely proposed.

Please send this ranking no later than noon on Friday, March 5. The time between release of this document and this deadline should give you an opportunity to "poke around" and see what you can find on certain projects, as well as to talk with colleagues in your group (our outside your group but who were responsible for other project suggestions). Please read the instructions in the assignment below and consider these carefully when ranking projects. Be especially careful about taking on projects when you may not be able to get gather sufficient information about them.

For the assignment, you should strive to learn about the projects. Investigate, at a preliminary level, their characteristics. Use the framework taught in class; divide your work into sections for financial justification, organization, planning, monitoring, controlling and learning from the project. Identify interesting and unique features in both managerial and technical levels. For each phase of the projects, identify sources of data that you can use. We recognize that you may not be able to get perfect – or even reliable – information on all stages or aspects of a project; well-documented discussion of really interesting aspects of certain phases or components of a projects will help make up for omissions caused by lack of data. When rankinig potential projects, however, do keep in mind, that you will probably want to take on one of these projects for *later* phases of the term project – and if you have trouble getting even rough data now, you may have a more difficult time getting additional detail later.

II. DELIVERABLES

Produce a 3-5 page report for each project, in which you describe your projects in a way that a professional project manager would understand and be interested in. Include pictures and graphs as you see fit. Your report should be divided into at least 4 sections:

1. Overall description (where, when, why, current status, participants etc.)
2. Project management framework: Identify features and characteristics of your project in the framework taught in class:
    i. Evaluation
    ii. Organization
    iii. Planning
    iv. Monitoring
    v. Controlling
    vi. Learning
3. Identify key issues or problems that you regard as unique in your project.
4. Wear the shoes of a project auditor, who is asked to produce a report on learning from the particular project. Your report will be used as educational material for other people in your company. Given the time and "cost" constraint on your investigation, decide on the features of the project that provide the maximum learning value for your peers.
5. In an appendix, name the sources of further data you intend to collect. Describe how this data will be useful in your investigation.

III. PROPOSED PROJECTS

Please find here the projects proposed by each of you. You have each other's contact information of the proposer if are interested in a project and want to ask for e.g. additional information about availability of data sources. Please note that the text below is copied from the project descriptions – in some case it includes first-person comments, and is not guaranteed to be accurate! The information below is pulled from a wide variety of submissions by students. Please alert the professor to inaccuracies in the attributions. Please note in particular that one project (the Pac-Bell project) originated from an unlabeled source; the proposer for this project should identify themselves to the professor to be ensured "first dibs" on the project.

JFK Airtrain Monorial

Location- Queens, NY
Status- Completed
Recently completed, the monorail connects JFK airport to NYC Public Transportation, specifically the subway lines. Unsure of its ownership but I believe it is the port authority (NY/NJ)

Simmons Hall

Location- Cambridge, MA
Status- Completed
Privately owned by MIT and completed a couple of years ago to serve as an undergraduate dorm. High profile due to prestigious architect and very costly. Wide variety of challenging issues during construction. Rumors of discontent among some current residents. Medium sized project. The professor can probably provide limited access to project superintendent and project manager.

Pac-Bell Park (SF Giants Stadium, San Francisco, CA)

Location- San Francisco
Status- Completed
Completed project. Interesting local pressures, multi-million dollar project. Information available.

Attiki Odos Motorway

Location- San Francisco
Status- ongoing
Large sized for Greek standards. Ring motorway around Athens, belonging to the state. ¾ finished, ¼ expected to finish in spring 2004.

Rincon Center in San Francisco

Location- San Francisco
Status -- Completed

Comprising offices for 1500 people & 320 apartments. Documented in the book by Douglas Frantz "From the Ground Up: The Business of Building in the Age of Money."

Worldwide Plaza

Location- San Francisco
Status -- Completed

A skyscraper constructed in Manhattan at 49th street and 8th avenue. Experienced large budget overruns. Documented in the book by Karl Sabbagh "Skyscraper: The making of a building", and in the excellent NOVA multi-part series.

Shell OP2 Chemical Plant

Location- Deer Park, TX
Status -- ?

Owner: Shell, Contractor: Kellogg, Brown & Root

Exxon Mobil Chemical Plant

Location- Baytown, TX
Status -- ?

Owner: Exxon Mobil, Contractor: Kellogg, Brown & Root

BP Chemical Plant

Location- Deer Park, TX
Status -- ?

Owner: Shell, Contractor: Kellogg, Brown & Root

MIT Brain and Cognitive Sciences Building

Location- Cambridge, MA

Status -- Ongoing

Very interesting design. A railway runs through the building. Innovative energy-saving mechanisms based on Air-vapor-barriers used. Interesting challenges and techniques to overcome concerns about noise and vibration in nearby buildings. Planning flexibility allowed for material substitution based on market price changes. **The professor can probably provide contacts with team members.**

Central Artery & Tunnel Project ("Big Dig")

Location- Boston, MA
Status -- Ongoing

Only megaproject on the list. Highly complex, controversial, expensive. Lots of good local coverage. The professor can provide contacts.

Davenport Commons

Location- Roxbury MA
Status -- Ongoing

Mixed-housing development by Northeastern, Madison Park Development Corporation, and the lower Roxbury community that was opened in September of 2001. Davenport Commons, was a $51 million project that provided a housing for Northeastern students and mixed-income families. It also created more than 2000 square feet of commercial space on Tremont Street. Could be an interesting study on how the various stakeholders where able to come to a consensus throughout the project. This is a completed project. No personal contacts for this project. However, the information may be accessible by contacting Northeastern, Madison Park and/or the Roxbury community.

New Unidirectional Runway

Location- East Boston, MA (Logan International Airport)
Status – Completed?
Highly contentious project, due to community opposition and environmental concerns.

Boston Autoport

Location- Charlestown, MA
Status – Completed?

Gillette Stadium

Location- Foxboro, MA
Status – Completed

Gillette Stadium is a 1.7 million square foot sports facility located in Foxboro, Massachusetts. The project is complete.

McArthur Hall

Location- Boston, MA
Status – Completed

Housing complex in Boston encompassing just over 100,000 sf.

Camp Bondsteel (United States Army KFOR)

Location- Boston, MA
Status – Completed

Due to downsizing and the shifting of construction assets to the Reserves and National Guard, the Army no longer has the equipment or personnel on hand to handle large scale construction projects. The military contracts most of this work out to Brown & Root. I think it would be interesting to focus on the contract that Brown & Root completed in constructing American basecamps in Kosovo. Camp Bondsteel serves as the nerve center of American operations in Kosovo, and Brown & Root was responsible for every aspect of the project's development, from acquirement of land and resources to construction of barracks, helipads, mess halls, hospitals and other facilities. I would imagine that particulars on the contract would be readily available either through the Army Corps of Engineers or Brown & Root. While Brown & Root still maintains a large presence in Kosovo to maintain the facilities they constructed, they completed the majority of their contracted work in 1999/2000.

Case Middle School

Location- Honolulu, HI
Status – Underway, to be completed Summer 2004

$60 million new middle school constructed within operating school environment. Includes a parking structure, auditorium, 9 classrooms and roadwork. Key construction issues: safety (existing middle and high schools currently in session), Green Building classification. Financed: Private K-12 institution, large endowment from alumnus Steve Case (former AOL Chairman).

JFK Airport Terminal 4 Expansion

Location- Queens, NY (John F Kennedy International Airport)
Status – Completed

Approximately a $900M construction project that created an additional 1.5M SF of terminal and retail space for the international terminal at the airport. I have some basic information on this project, and feel that I could possibly get more.

Force Protected Office Building

Location- US Naval Base, Bahrain
Status – Completed

Construction of a force protected office building at the US Naval Base in Bahrain. This project was a three story, $700K, CMU and concrete facility meeting all US force protection standards for the Middle East. The project has recently been completed, and experienced large coordination, design, and scheduling challenges due to its location and stringent completion timeline requirement. This project was an interesting design-build project that I can get information on.

Route 24/287 Interchange

Location- New Jersey

Status – Completed

The NJ Dept. of Transportation has been reconstructing the Route 24/287 interchange. There are environmental and traffic impacts from this, there were many contractor issues, not to mention scheduling problems and design problems. It's a retrofit to a thirty-year-old design, and it's basically done now (at least as far as traffic is concerned).

Kimmel Center

Location- Philadelphia, PA
Status – Completed

Theater in Philadelphia, PA; 450,000 sq ft, takes up an entire city block; $265 million; Private financing.

Texas Air National Guard Relocation

Location- Fort Worth, TX
Status – Completed

7 Building complex, BRFAC funded. Building construction includes a hangar, warehouse, administrative area, trans. Information likely available via Freedom of Information Act. (Unclear how long would take to obtain information).

Los Angeles Air Force Base Medical Clinic

Location- Los Angeles
Status – Completed

$10M medical/dental facility. Design-bid-build. Information likely available via Freedom of Information Act. (Unclear how long would take to obtain information).

Los Angeles Air Force Base Fitness Center

Location- Los Angeles
Status – Completed

$6M facility. Design-build. Information likely available via Freedom of Information Act. (Unclear how long would take to obtain information).

MIT projects

Zeisiger Athletic Facility

Status – Completed. Dr. Osgood can provide contacts.
http://web.mit.edu/evolving/projects/zesiger/index.html

MIT Biology Building

Status – Completed
Expensive and innovative design. Lots of unexpected requests by faculty during construction. Design incorporated flexibility to accommodate shifting needs over time, and had to deal with complicated groundwater requirements. The professor can probably provide contractor contacts.

http://www.gbhmacomber.com/projects/academic/mit3.html