IPRO 315 Fall 2006

Project Plan and Objective

The plan for this IPRO is to develop a design for a large scale parking garage that can accommodate about 500 cars and will be located on IIT's main campus. The objective of this project is to develop a design that goes beyond the standard parking systems used today. Rather, the attempt is to have a design which is more representative of "parking garages of future." And as such, features including quick handling of incoming and outgoing cars, efficiency in storage and aesthetics are considered in design. The aim is to develop an innovative and economical concept for parking a car.

The building will be completely self-sufficient and will have to incorporate the architecture of the various buildings on campus. The design could have separate entrance and exit ramp towers, ramps incorporated with parking, or a futuristic design, such as an automated system. An automated system will include a vehicle elevator or lifting device to move the vehicle so the driver does not have to. The structure could be built with reinforced concrete or steel. The design will also include accessibility following the requirements set forth in the Americans with Disabilities Act.

Class Composition

The class is composed of students majoring in architecture and aerospace, mechanical, and civil engineering. This diversity of students' background is very well suited to achieve the objectives of this IPRO.

Outline and Milestones

Week 1: Introduction of the project and identification of the Tasks
Week 2: Development of architectural design; selection of structure types; approval by the client
Week 3: Building envelope design; start of structural and foundation analysis and design
Week 4: Structural design (continued); foundation design completed
Week 5: Mechanical system design (elevators, escalators, etc.)
Week 6: Mechanical system design continued; architectural and structural design finalized
Week 7: Mechanical system design completed
Week 8: Progress report presentation
Week 9: Traffic flow study started
Week 10: Building serviceability reviews
Week 11: Traffic flow study completed
Week 12: Overall design review and evaluation
Week 13: Cost estimating and bill of materials
Week 14: Cost estimating finalized; begin preparation of presentation materials
Week 15: Final report and presentation

Deliverables

Deliverables include:

(i) Complete architectural drawings
(ii) A complete calculation report (structural and foundation design; mechanical system design, lighting/electrical design; cost estimation).
(iii) Web site (optional)
(iv) Poster presentation describing various drawings, design descriptions, details, conclusions, etc. and a PowerPoint presentation