IPRO 326: Designs for School Building in Pignon, Haiti

Goals and Objectives:

The IPRO 326 team's objective for this semester was to design a school so an additional 400 children would have access to affordable education in the remote town of Pignon, Haiti. We assisted our partner Haiti Outreach in realizing this goal by providing them technical assistance, project management and costing tools, as well as advice and guidelines that will improve their construction techniques.

Tasks:

The structure of our IPRO consisted of specialized sub-teams that enabled us to complete this project in a more efficient way. The tasks for each sub-team were as follows:

Structural:	- Determine the strength of concrete used in Haiti
	-Complete a structural analysis of the high school under construction in Haiti
Architectural:	-Complete drawings for high school under construction
	-Produce a graphic representation for a prototypical school building
Electrical/Plumbing:	-Determine the electrical and plumbing needs of the school
	-Design a system to fit these needs
Quantities/Cost:	-Define costs for the project
Fundraising:	-Write fundraising template letter & create fundraising poster
	-Contact companies for potential donations

Accomplishments and Recommendations:

Architectural & Structural: Several construction documents, which illustrate ways to create safer buildings in Haiti, were created. An architectural statement was drafted which gives advice on methods for making stronger, safer materials for construction, specifically concrete mixes. Methods were established to determine the strength of the concrete in Pignon, and the equipment for the pertinent tests has been shipped to Haiti. Lastly, a preliminary structural analysis for the building currently under construction in Pignon was completed.

Electrical & Plumbing: After looking into both wind and solar energy it was determined that solar was best suited for Haiti. It was decided that a 2Kilo-watt solar array system and a 9.2Kilo-Amphour battery system would be sufficient to

keep the school powered. It was also determined that two water pumps are needed to meet the water needs of the school. A sanitary alternative to the existing toilet system was designed. The new design includes stations for students to wash their hands after using the restroom and a septic system to properly dispose of waste.

Quantities/Cost & Fundraising: Spreadsheets and calculation pages were developed for calculating the quantities and cost of the current school building. In addition, a step-by-step workbook was created for calculating quantities and costs of a similarly constructed building. A fundraising template letter and poster were created. Lastly, a contact list of 60 companies was compiled to aid in the future contacting of potential donors.