IPRO 311 Project Plan
Fall 2008

Campus Branding/ Sustainability Image

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1.0 Abstract

The overall aim of the project is to improve and enhance the image of Illinois Institute of Technology, both as an institution and a physical campus, in regards to sustainability and "green" practices. To that end, the current semester is focused on several design projects based on concepts generated in the previous semesters along with input from the current semesters to enhance a new "green" campus. We will also be spreading information how IIT is currently acting in a sustainable fashion and how students on campus can contribute to our image as a sustainable campus.

2.0 Background

Illinois Institute of Technology has been at the forefront of innovation from its architecture to providing a competitive education environment. Even with this innovation, IIT struggles with its image as a sustainable campus. An example of this is the recent letter D grade IIT received on its college sustainability report card, a comparative evaluation of sustainable activities in campuses across the United States and Canada. The goal of this IPRO is to come up with solutions to make IIT more sustainable and at the same time create a branding scheme to bring awareness to IITs sustainable efforts.

The spring 08' IPRO team created a design for a solar workstation, several greenstallations, energy gauges for buildings, and a plan for permeable pavements. This IPRO team also composed a design manual for making IIT "greener."

The summer 08' IPRO team went further with the ideas presented from spring 08' along with contributing new ideas. The permeable paving initiative looked at researched and identified areas of the campus that have draining issues. They redesigned a solar workstation which was ready for construction. They also created an online group on Facebook that attempts to gather attention and support from the student body in favor of new sustainability practices on campus. This group also created a survey that tried to retrieve useful information that would contribute to the process of moving towards a more sustainable campus. A green wall initiative was proposed to be put outside academic buildings in ideal locations. They briefly conducted research for possibly having nuclear power at IIT. The last project that this team worked on was to propose the use of Aerogel as an insulation material for campus buildings.

This semester's IPRO team will continue building upon the work that previous groups have started. The world is changing its stance on non-renewable sources of energy. Being a part of the Illinois Institute of Technology community, it is our mission to stay ahead of the norm and lead this movement to a more sustainable campus.

3.0 Objectives

The goal of the Fall 08' IPRO-311 team is to develop and implement projects that improve the image of IIT's Main Campus and define IIT's prominence in the realm of energy and sustainability. Another goal is to create awareness and pride in the renewable and sustainable

community that will define IIT. This team will make our existing renewable resources known and prove that we are a sustainable campus. An even further step will be taken by the design and implementation of a Solar Workstation, Green Walls, double pane windows for academic buildings, censored sprinkler systems, "IIT" lighting on the main building and a revamped branding/marketing campaign to promote sustainability. Through the future accomplishments of this IPRO, we hope to create an environment that encourages visitors to learn about sustainability, its advantages, and influence them into incorporating sustainable measures into their environment.

Successful completion of the goals presented here will require each participant to gain useful experience and knowledge regarding teamwork, inter-professional skills and most importantly sustainable concepts.

There are several interrelated objectives based on the three teams we have organized ourselves into:

(1) Build IIT brand awareness and campus visibility in ways that are aesthetically pleasing, exciting and memorable.
- Have an exciting speaker(s) come to IIT to speak on Sustainability in an effort to educate and inspire the IIT community
- Administer a survey getting input from the community on what they want to see be made more "Green"
- Design a Lighting Scheme for the front of Main Building that is also renewable
- Publicize sustainability through Facebook
- Research ways on how to revamp the smokestack (possibly through vines)
- Promote a competition within the student body to design a new logo and a T-shirt for the sustainability project to get students interested in our IPRO
- Compile all materials for the deliverables and make sure the deadlines for all groups are being met.

(2) Create an eco-friendly, self-sustained project that enhances our facilities within the university

A. Window Replacement for campus buildings
- Replace poor insulating single pane windows with dual pane units
- Possibility for argon filled windows will be examined
- Use of translucent Aerogel windows will be examined for some applications
- Building analysis will be done to determine the positive effects of better insulating windows
- Conserve energy and make campus building systems more efficient

B. Green Walls
- Best location for green walls will be determined
- Possible model of a green wall structure made
- Keeps building wall cool
- Absorbs CO_2
- Beautify campus

- Possible implementation of a green wall on campus

C. Recycle Program
- Research implementation of a whole campus recycling program
- Research what can be done with recyclable material available on campus
- Promote recycling at IIT

D. Sprinkler System
- Install an integrated sensor system with current automated sprinkler system
- Operate sprinklers only during proper times of day
- Disable sprinkler system when rain is detected by sensors
- Disable sprinkler system when freezing temperatures are detected by sensors
- Disable sprinkler system for a certain period of time based on how much rainfall has been detected by sensors
- Wireless and wired models available
- Promote efficient use and conservation of water and campus resources

E. Permeable Pavement
- Install permeable pavement on campus
- Allow drainage of water back into ground
- Prevent puddles/ice from forming
- Use recycled materials in paving material
- Replace worn and broken pavement
- Possible completion of Phase One of previous pavement plan

F. Hiding Steam Pipes
- Artfully hide steam pipes coming from Farr and Gunsalus Halls
- Possibly use to warm pavement or bench
- Pipes will be 2-10 ft. tall
- Location will be determined
- Possible use as branding opportunity

(3) Promote "Green" Innovation by designing and building a Solar Powered Workstation

A. As part of the goal to strengthen IIT's sustainability image, our intent is to design and build a solar workstation that expresses sustainability and alternative energy use in its design. The solar workstation will function as a place for students to plug in their laptops, and other electronic devices, and use them in a comfortable setting. When the workstation is not in use by students, it will function as a light sculpture which will add to the beauty of the campus while attracting attention to the idea of sustainability and alternative energy technology. This will also be its primary function during the cold winter months.

To communicate sustainability in the workstation's design, we intend to construct it primarily out of salvaged, second-hand materials. It will also be modular, so that when more are produced, they can be put together to form a coherent unit and accommodate more users. The solar workstation is also meant to be attractive for students' use. When students use their computers in their rooms, they not only

use the computer, but also air conditioning and lighting. Therefore, getting more students to go outside while using their computers also translates to energy savings for the university. We hope that this fact, its use as an educational tool, and the modular design, will make this a marketable product which other educational institutions might want on their campuses as well. This could make it a marketable product which other educational institutions might want to have, thus enhancing IIT's image as an institution committed to sustainability.

- Usable by IIT students in Spring, Summer, and Fall.
- Becomes a light sculpture during Winter months to brighten the campus and attract attention.
- Modular design, can be added together to form bigger unit which accommodates more users.

4.0 Work Breakdown Structure

The work breakdown in this project was determined separately by each group. Additionally, analysis of the project by the entire group will be conducted during and immediately after the midterm review and the final presentation to further inform the future of the project.

I. FACILITIES GROUP

Task	**Description**	**Deadline**
Green Walls	Research location and implementation of greenwalls	10/03/08
Waste Recycling	Research a recycling program for IIT	10/10/08
Window Replacement	Research replacement of inefficient windows	10/17/08
Sprinkler Sensors	Research an installation of sprinkler sensors	10/31/08
Permeable Pavement	Installation of permeable pavement	11/14/08
Steam Pipes	Beautify or hide steam pipes	11/28/08

II. SOLAR WORKSTATION GROUP

Task	Description	Deadline
First Proposal	Present first proposal	09/23/08
Revised Proposal	Present revised proposal	09/25/08
Final Proposal	Present final proposal	09/30/08
Midterm Presentation	Make model and drawings for midterm	10/07/08
Acquisition	Buy material for workstation	10/14/08
Construction of Structure	Build workstation's structure	11/06/08
Construction of surface	Build workstation's surface	11/18/08
Final Presentation	Work on final presentation material	11/27/08

III. MARKETING AND BRANDING

Task	Description	Deadline
T-shirt/logo competition	Hold a t-shirt/logo design competition	9/25/08
Green Speaker	Book speaker for sustainability lecture	9/25/08
Facebook/Survey	Update Facebook group and finish survey	10/07/08
Green Speaker	Sustainability lecture	10/23/08
Smoke Stack Beautification	Complete research and design	10/23/08
Main Building Marketing	Design development for marketing on Main Bldg.	11/06/08
Design Manual	Update and print design manual	11/06/08
T-Shirts	Print/distribute T-shirts	11/06/08

5.0 Project Budget

	Items/Task	Budget
Marketing and Branding Group		
	Shirt Contest Advertising & awareness posters	$60
	Shirt Contest Prize	$100
	Shirts (144 @ $3.98 each)	$573
	Sustainability Lecture Advertising	$30
	Printing of final design manual	$100
	Sub total	**$863**
Solar Workstation Group		
	Sharp ND-130ujf, 130 Watt	$647
	Enphase Micro-Inverter M175-24-240-S01, MC3	$199
	Deka/MK Battery S6VGC SLD G Gel Cel, 6 volt 180 Ah	$275
	TriStar Digital Meter TS-M (Charge Controller)	$193
	Wood and Building material	$250
	Misc. (screws, bolts, nails, etc.)	$50
	Wires and cables	$50
	Xantrex Link 10 Standard Meter (Emeter) (LED battery Monitor)	$216
	Sub total	**$1,880**
Facilities and Steam Pipes Group		
	Sprinkler Sensors example	$150
	Permeable Pavement-sample material	$100
	Sub total	**$250**
	TOTAL	**$2993**

Submitted Budget

Category	Requested	Approved	Reimbursed	Explanation	Status	Edit
Supplies	$ 0 2008-09-19	Awaiting Approval	None		Pending	Revise
Equipment	$ 2430 2008-09-19	Awaiting Approval	None	construction of solar workstation,steam pipe proje...	Pending	Revise
Services	$ 190 2008-09-19	Awaiting Approval	None	print & bind final design manual, print advertisin...	Pending	Revise
Travel	$ 150 2008-09-19	Awaiting Approval	None	gas, & team building meeting/meal.	Pending	Revise
Participant Support	$ 673 2008-09-19	Awaiting Approval	None	contest design prize, & incentives to complete sur...	Pending	Revise
TOTAL	**$3443**	**$0**	$0			

6.0 Team Structure and Assignments

In order to accomplish the objectives of the project for the current semester, the team has been divided into three groups.

The groups are as follows:

Marketing and Branding Group (and Team Leader Group):
Raise awareness of ways to make IIT more energy Raise and "green". Promote image of IIT as a sustainable university. Overseeing Administration and general group assignments.
Members: Melissa Toops (Leader), Catherine Budzinski, Vinu Mohan and Gabriel Fontes.

Solar Workstation Group:
Design and build a solar powered workstation to be placed on IIT's main campus.
Members: Milanko Milesic (Leader), Nor Tanapura, Sacha Roubeni and John Kapecki.

Facilities and Steam Pipes Group:
Work closely with campus Facilities Department to reduce wasted resources. Design and build art installations to embellish or conceal steam pipes on campus.
Members: Michael Chamales (Leader), Hyeran Um, Shawn Block and Justin Ma.

Name	Major	Year	Group	Individual Strengths	New Knowledge / Skills to Develop	Expectations about the Project
Shawn Block	CAE	4	Facilities	- green knowledge (LEED Program) - thinking outside the box	- permeable pavement - sprinkler systems	To design and have the project be seen on campus.
Catherine Budzinski	ARCH	5	Marketing	- good presentation skills and experience - marketing experience in other IPRO - woodworking, designing	- working with students of different majors - learning more about green technology and bringing those skills back to architecture.	I hope this project will be able to build a prototype for campus. I also hope we are able to work with art@iit.edu to come up with some artistic ways of hiding the exhaust pipes.
Michael Chamales	MMAE	4	Facilities (sub-group leader)	- material selection - marketing - ideas	- thermal resistivity of windows - pavement installation - design sprinkler set up	- implement pavement plan - research window replacement - fix sprinkler issues and steam pipes
Gabriel Fontes de Faria	ARCH	5	Marketing	-design and construction skills - proficient in programs such as AutoCad, Photoshop, and Illustrator - presentation skills	- learn more about sustainability in both large scale and small scale projects.	I hope that with this project we are able to not only come up with ideas and designs for how to make IIT's Main Campus a more sustainable place, but also apply some of those ideas, and improve the image of the school and peoples awareness to environmental issues.
John Kapecki	ARCH	5	Solar Station	- architectural design - design build studio - sustainability research	- integration of hi-tech/ green systems - find out what will work for IIT Pavilion users	Optimistic that this can become something associated with the IIT community. I want it built and I hope this project can grow over time.
Justin Ma	MMAE	5	Facilities	- engineering background	- networking - team communication	Help IIT become green.

Name	Major	Year	Group	Individual Strengths	New Knowledge / Skills to Develop	Expectations about the Project
Milanko Milesic	ARCH	4	Solar Station (sub-group leader)	- design, woodworking, and construction skills - experience with project development - drafting, 3d modeling, and model-building skills - presentation experience	- working with large group to realize a project - sustainability and real solutions that work	- spreading the word about sustainability and green technologies while benefiting IIT students and the campus
Vinu Mohan	Biochem BUS	3	Marketing	-marketing - budget planning - unique thinking	- knowledge on sustainability - solar power - how to make a community more green	- to plan a realistic but optimistic project - execute by seeing real changes on the campus
Sacha Rouben	ARCH	5	Solar Station	- design - structure - presentation	- sustainable technologies/ ideas - improve communication skills	- get a solar workstation designed and built
Nor Tanapura	MMAE	4	Solar Station	- engineering aspects	- alternative energy - find out how solar cells work	- want to get solar workstation built.
Melissa Toops	ARCH	4	Marketing (sub-group leader)	- presentation skills - shop experience / woodworking - 3d models - Acad, Photoshop, Illustrator, 3dMax, Word	- project management skills - develop team working skills - learn more about sustainability	To better IIT and people's view of green IIT.
Hyeran Um	ARCH	4	Facilities	- green wall research - marketing - designing skills	- energy consumption - sustainability - greenstallation	To design realistic strategy and planning.