

Sustainable Village (IPRO 301)

Abstract

The Inter-professional Project (IPRO) 301 - Sustainable Village, made possible through a sponsorship from the Tellabs Foundation, was created to develop a solution for the ever-growing need for sustainability awareness on IIT campus. By involving students from diverse disciplines working as a team, IPRO 301 accomplished two goals: to provide a master plan to guide decision makers on the technologies and strategies that can create a sustainable university, and to design the "House of the Future." Completing these disparate goals required dividing into two sub-teams: the Sustainability team and the House team.

In order to propose a master plan, or roadmap, for making IIT a Sustainable Village, the Sustainability team identified the following milestones: benchmark the activity of other universities, audit the present performance of IIT, and create a vision for IIT. This vision takes form in the Roadmap to Sustainability and the Sustainable Philosophies. The Roadmap identifies the actions necessary to transform IIT into a Sustainable Village, while the Sustainable Philosophies provide general guiding principles that can be followed in any decision-making process to improve the chances that actions will fit in with the goals of sustainability. The highlight of the Sustainable Philosophies is the Green Unit; this philosophy focuses on making each fundamental unit of the university (classroom, dorm room and office) as sustainable as it can be. Through connecting these building blocks, sustainability can be realized.

The House team took this concept of the Green Unit, and produced a schematic design of the "House of the Future." The house will serve as a demonstration project of sustainability and a showcase of innovative technologies. The information gathered in the house can then be used to apply the strategies and technologies in other existing and new IIT buildings. In this way, the realization of the Sustainable Village throughout the campus will be made possible. Several technologies and strategies will be employed to make the house a net producer of energy as well as clean air and water, while also promoting the reuse of materials. By not only documenting the performance of the house through rigorous measurement of data, but also opening the house to the public to promote education in the achievement of sustainability, the house will set a clear example for what can be done, and will set the stage for a sustainable future at IIT and throughout the Chicagoland area.

As an urban campus, IIT faces challenges to becoming a sustainable university; coincidentally, the successful creation of a Sustainable Village on and around IIT can produce a positive, chain effect in Chicago. Improved air and water quality in the area, growth and strengthening of local communities, and the creation of industries and jobs will all result from the successful creation of the Sustainable Village with its Renewable Hydrogen Fueling Station and House of the Future. Sustainable Village will ultimately expand the consciousness of the public to become a more sustainable society and will demonstrate how clean energy and clean water can lead to improved quality of life and economic prosperity.

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