MIHOUSE

Multi Intelligent House Using Solar Energy

SOLAR DECATHLON
LATIN AMERICA & CARIBBEAN 2015
CALI - DECEMBER

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Team: MIHOUSE Multi Intelligent House Using Solar Energy
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Universidad de San Buenaventura Cali

Acreditación Institucional Alta Calidad

Universidad Autónoma de Occidente

SOLAR DECATHLON LATIN AMERICA & THE CARIBBEAN 2015

The most important biennially university contest worldwide called Solar Decathlon holds its first version in Latin America, challenging 16 collegiate teams to provide social housing solutions adaptable to tropical climate conditions.

Solar Decathlon was created in 2002 by the U.S. Department of Energy with the purpose of promoting technical innovation and the wise use of economic and natural resources applied to sustainable housing solutions among university students. The competition has been held biannually (2005, 2007, 2009, 2011, 2013 and 2015) in the United States, in 2010, 2012 and 2014 in Europe and in 2013 China.

This contest is currently taking place in Cali-Colombia, and will find its winner in the team whose housing proposal demonstrates an attractive and affordable solution that achieves the highest scores in the following 10 contests: architecture, engineering and construction, energy efficiency, electric balance, comfort, sustainability, house functioning, marketing and communications, urban design and economic accessibility and innovation.

MIHOUSE TEAM

MIHOUSE is one of the 16 teams selected to participate in the first Solar Decathlon in Latin America & the Caribbean 2015. MIHOUSE means “Multi Intelligent HOuse Using Solar Energy”. Our interdisciplinary group is conformed by students and professors from Universidad de San Buenaventura Cali and Universidad Autónoma de Occidente, two private higher education institutions united in this project to generate economic, social and environmental impacts through education, research and social outreach. The participants in this group are defined as “decathletes” and come from different educational backgrounds: architecture, social communication, industrial and costume design, and environmental, electric, industrial, materials and multimedia engineering.

Within the contest each “decathlete” has assumed a specific role with certain responsibilities:

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In addition to the 40 decathletes, the team works with people or institutions unaffiliated to the participating schools. Up to 5 contractors, volunteers or sponsors are permitted and denominated as “Team Crew” members.

MIHOUSE team has 2 “Team Crew” members:

- Escuela Politécnica Superior Universidad CEU San Pablo from Spain, whom is giving technical support on material innovation, energy efficiency strategies and providing help with technical documents.
- Aprotec, whom is giving support in the design and optimization of the solar energy system.

Last January two members from CEU San Pablo visited MIHOUSE team and shared their experience and knowledge on previous Solar Decathlon contests. They also gave feedback on the technical proposal and some great ideas on how to advance in the design. (See pictures below).

Roberto González

Juan Manuel Ros

MIHOUSE PROPOSAL

The construction industry is one of the most threatening sectors to the natural resources. The arrival of Solar Decatlhon 2015 opens the great opportunity to promote bioclimatic architecture and sustainable construction. MIHOUSE foresees Valle del Cauca as an international reference in the use of clean energies and sustainable solutions applied to social housing.

The challenge for the Solar Decathlon 2015 is to generate a social housing prototype adaptable to tropical conditions. We are proud that the MIHOUSE proposal was selected to participate in this challenge.

This proposal consists in an urban master plan that departs from minimal housing units that are replicated to conform common areas strategically positioned in an hectare. Some of the pieces are replaced into service facilities such as mini-markets, child care facilities, among others. MIHOUSE incorporates an integrated growing strategy for urban contexts and tropical landscapes, which demonstrates that it is possible to achieve high density housing provided with green areas for the construction of community life, the permanence of children, adults and seniors, and the landscape contemplation.

MIHOUSE project takes advantage of sunlight, promotes rain water harvesting, saving drinking water, a correct water management and a waste plan. It also provides thermic comfort conditions at urban and architectural scales by promoting crossed ventilation and thermic management through the utilized materials that are used.

Some of these materials and used technologies will be developed departing from on-going research on both universities and taking into consideration the national regulations and building codes. We also care about reducing negative environmental impacts through the development of corrective and preventive actions while supporting local production.

MIHOUSE project is attractive to the regional industrial sector, since it responds to specific environmental, social and economic problems, thus represents a huge market potential with its contribution to the environment through corporate social responsibility. MIHOUSE sponsors support and are linked to the project through financial resources, consulting, lectures and specialized training.

It is important to mention that MIHOUSE has sought for sponsoring companies that have experience or expressed interest on green construction. Most of them were contacted during Construverde, a 3 day event organized in Bogotá by Consejo Colombiano de la Construcción Sostenible, where companies offered their products and services related to the construction of energy efficient buildings. Other contacted companies are influential in social initiatives towards sustainable ways of living, therefore, they sponsor the team by sharing their knowledge. It is also to highlight MIHOUSE´s efforts on contacting companies that have developed constructed materials departing from recycled components.

The companies have responded based to 3 categories of 10, 5, 2,5 thousand USD. The offered benefits include 11 marketing options, among them: speakers, stoppers, stop porter, brand activation, company´s name and logo in the decathletes´ uniforms, etc.

The team is looking forward to construct its social housing prototype in order to offer the MIHOUSE experience to all the Solar Villa visitors, which will be located at the Melendez campus of Universidad del Valle. We invite you to follow the development of MIHOUSE project during the Solar Decathlon Latin America & the Caribbean 2015 by visiting www.mihouseproject.com and its social network @mihouseproject in Facebook, Twitter and Instagram.

Collaborators

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