

**3rd Seminar on Innovation, Science and Technology for Energy-Efficient  
Development: Green Buildings**

**Profile of Participants**

**Country: COSTA RICA**

Name: **Ana Grettel Leandro Hernández**  
Nationality: **Costa Rican**  
Current position: **Professor-researcher**  
Institution: **Instituto Tecnológico de Costa Rica**



**Small biography**

Born in Cartago, Costa Rica. Enter the Instituto Tecnológico de Costa Rica and graduated as the first woman in Construction Engineering. Got a scholarship from the Government of the United States and obtained a Masters in Civil Engineering at Purdue University. Upon her return in 1991 she was appointed as Director of the earthquake emergency in the province of Limón. Two years later she joined the Instituto Tecnológico de Costa Rica as a researcher at the Center for Research in Housing and Construction. In 1995 she began her work as a teacher at the School of Construction Engineering and continues with her duties as Researcher.

She has taught courses on interpreting blueprints, construction of concrete structures, design of construction processes, construction safety and sustainable construction. She has conducted research in the field of management of construction projects based on aspects such as improvement of construction processes, increasing productivity in construction projects, LEAN, management construction waste, sustainable construction, quality in construction processes.

She has presented papers at national and international level on issues of waste management in construction and participated in national and international conferences on the topic of sustainable construction.

Similarly has directed more than 50 Bachelor Thesis and 8 Master Thesis in the above topics.

She is currently the Coordinator of the Department of Construction Management at the School of Construction Engineering and is on the Advisory Board of the School and on the Council of the Master on Project Management.

**Impact of their work of teaching and / or research**

The construction industry plays a major role in the economy of the people as it is directly related to its development and growth. However, its activities could lead to a high risk to the environment because they consume large amounts of natural resources and energy, produce large volumes of waste and can contaminate water sources. Similarly the industry associated, besides these problems, also produces environmentally harmful emissions of gases.

Sustainable construction offers an alternative to the typical development of construction, achieving through its implementation to reduce the negative environmental impact. It is possible through the life cycle of a building to reduce energy consumption in the stages of implementation, operation and maintenance of them also make rational use of resources during execution through the implementation of concepts of productivity, quality, waste management, safety, etc. By applying this type of alternatives will be helping the environment by optimizing and rational use of resources, reducing energy consumption and amount of waste and waste generated, and the lower extraction of raw materials from nature. Also, indirectly the reducing project costs is promoted, something that is very important for the sustainability of the construction sector.

These reasons have motivated research on topics directly related to the impact that construction industry has on the environment, in order to achieve making the industry building a sustainable activity through their results, training and direct and indirect education of the professionals involved.

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