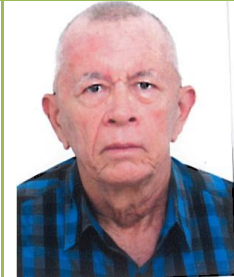


**3rd Seminar on Innovation, Science and Technology for Energy-Efficient
Development: Green Buildings**

Profile of Participants

COUNTRY: NICARAGUA

Name: **Augusto Gutiérrez Useda**
Nationality: **Nicaraguan**
Current position: **Tenured Professor and Technical Coordinator of TAISHIN Project**
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Small biography

Civil Engineering, Agricultural Engineering and Industrial Engineering studies in my country and postgraduate courses in General and Applied Hydrology, Irrigation Engineering and Planning of Science and Technology, on the outside.

Development of a extensive professional career in aspects of design and supervision of hydrosanitary works and preparation of civil works studies as well as the implementation of a large number of supervisions of vertical work constructions.

Enforcement along over thirty years of a long career in university teaching, having performed this activity in several of the most important universities in our country, but mainly focused on the Universidad Nacional de Ingeniería (UNI) and especially in the faculty of Architecture, where currently he works as a tenured professor.

Development in the area of building materials, an investigation into the physical and mechanical properties of plywood of Nicaragua at the Universidad de Costa Rica and in the area of climate studies I conducted a research on the climate of the upper basin of the Coco river, in the hydrographic surveys center in Madrid, Spain.

Since October 2010 I work as technical coordinator of the TAISHIN project, which is run by UNI in collaboration with the Japan International Cooperation Agency (JICA), which aims by conducting relevant research, to achieve structural justification of the confined masonry system with pumice blocks for the construction of social interest housing.

I'm starting the practical part of my doctoral study in environmental science, in the regional environmental studies program (PEAUT) of UNI, trying to establish guidelines for the solution of water pollution in the crater lagoon of Masaya.

I have membership in professional organizations such as the International Technology Association, Academy of Sciences of New York and the College of Engineers of Nicaragua.

Impact of their work of teaching and / or research

As far as teaching is concerned, when I teach Work Organization, emphasis is placed on the proper allocation of resources on the construction campus, which contributes to its optimization, including energy. By teaching Structures, is intended to -as meeting the prevailing building codes- effectively sizing sections of structural elements, and optimizing the use of implicit energy in the process of building. And also with other subjects such as Hydrosanitary Installations, in which the incorrect design of pipe sections leads to increases in pressure losses, translating this into increases of pumping energy costs.

Regarding the TAISHIN project, the success of the research process and therefore the validation and use of that system, will lead to the spread of pumice mining sites in the Pacific territory of Nicaragua, where it has been deposited due to volcanic eruptions, huge amounts of pumice. This is in contrast to the single site located west of our capital, where the sand must be extracted and it is currently used for the manufacture of blocks. The use of this single bank implies increasing costs of extraction with heavy equipment and the transportation costs will be higher than when the material is extracted from the various banks of pumice located near construction sites.

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