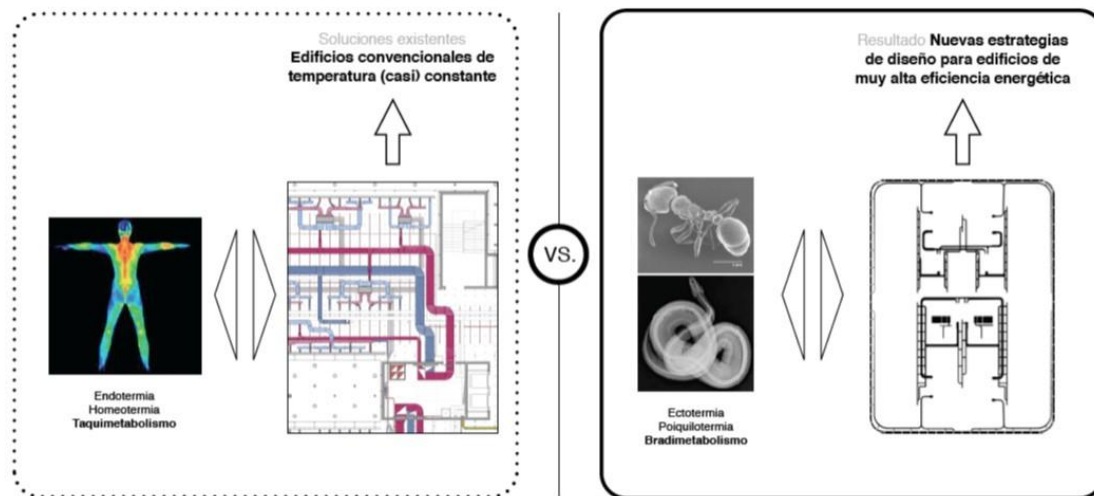


## Environmental Studies Departmental Seminar



**Speaker:** Amaia Zuazua

**Title:** *Biomimicry in buildings: theory and practice*

**Date:** Nov.29, 2016

**Time:** 13:15 (refreshments served at 13:00)

**Venue:** Seminar Room, Bona Terra Dept. MID

**Abstract:** This talk describes the project developed in 2015 in the School of Architecture of the University of Navarra about the application of biomimicry in building energy systems. Regarding the definition of the Biomimicry Institute, biomimicry is an approach to innovation that seeks sustainable solutions to human challenges by emulating nature's time-tested patterns and strategies.

In a theoretical context, the project sought to define the relation between animals and building energy systems with the aim of identifying and emphasizing the immediate research opportunity areas that biomimicry knowledge offers for future research. The motivation arose from the necessity of finding alternative solutions to face the challenges mostly in the efficiency of heating, ventilation and cooling systems. The strategies towards thermal regulation and environmental control that can be analyzed in animals are countless. The method used for the analysis is a solution-based approach. On a first stage, the strategy found in animals is defined (biological domain). Secondly the strategy is classified and analogies in building are defined (transfer phase). Finally, the scale of the possible application and a potential implementation is identified (technological domain). Two case studies will be presented, which have been developed more in depth and recently published.

This one year experience has demonstrated the utility of this approach for creating new opportunities into research areas using nature as an inspiration source. Besides, those suitable solutions, arisen from the investigation of a multidisciplinary team, are presented as promising answers to the challenges that building energy systems face nowadays.

