# REGENERATIVE SOLUTIONS FOR BUILDING HABITAT — CONTEMPORARY EARTHEN ARCHITECTURE PROJECTS

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**Abstract**

A collection of projects designed with ethical principles and built with earth and other sustainable building methods, in collaborative processes that respect the essence of the place and the community, and detonate empowerment and the expression of maximum potential. They allow people to participate actively in the regenerative process of nature and the social fabric, looking forward restoration of ecological and social balance.

Climate change, air, water and soil pollution, housing hunger, cultural and environment erosion are serious problems that architects have the opportunity to respond with appropriate solutions combining earth building technics with sustainability principles and strategies. Human settlements have always been linked to social and climatic systems, to which they respond to produce the human habitat. Currently we are facing a situation of economic and socio- environmental crisis that is reflected in the architecture through the lack of relationship of the buildings with their natural environment and their resources. Faced with this situation to contribute to the search for answers to these problems, an appropriate solution is oriented towards the concept of Social Production of Habitat, which is the conscious action of balancing all those processes that generate living spaces that are carried out under self-producers in collaboration other social agents.

As an example of sustainability in earth building and the social production of the habitat, different projects and their history of owner builders are presented here.

## Introduction

Climate change, air, water and soil pollution, housing hunger, cultural and environment erosion are serious problems that architects have the opportunity to respond with appropriate solutions combining traditional technics with sustainability principles and strategies. Becoming aware of the problem and generating appropriate solutions, as building with natural materials like earth, straw, wood, stone... harvesting water, multiplying knowledge and recovering traditional building methods, it is vitally important to contribute in reducing the environmental impact on the planet. Future architects should develop an Architecture that can be an instrument or a tool change and reverse processes of environmental and social degradation of the habitat. The dream is to educate the future architects that will develop a responsible architecture designed and built with deep ethical principles, an architecture that will respond to the environmental and social issues and challenges of our culture and to the social needs of humanity.

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As an example of the social production of habitat, the case of “The House of the Midwife” has been developed since 2016 and through which it has been possible to build 5 houses of childbirth in the Tenejapa municipality, with the collaboration of architecture students together with the community, midwives and their families.

In other perspective of social rebuilding of habitat, natural disasters like earthquakes bring out the sense of mutualism and the will to collaborate in the process of rebuilding with the community. Architecture can be accessible for everyone.

## The Vernacular housing

Years of adaptation and resistance, but above all efficiency in its operation, have made vernacular housing remain in the peasant landscape.

The vernacular housing starts from a deep understanding of the environment, the place and its resources, the climate and the local culture. The recognition, registration and study of these architectures without architects, is a search for sustainable alternatives for the development of future generations.

The vernacular architecture is an example of a harmonious relationship with the natural environment and the culture of which they are a part.

## Social Production of Habitat

The Social Production of Habitat emerges as a concept within the context of the dialogue between multiple actors, within the International Coalition for Habitat (HIC), around the popular habitat and the defense of its right. While it has been a collective construction, defining this concept has been a dynamic process of dialogue and joint construction. When talking about social production, it refers to the collective organization processes that seek to improve the habitat. The social production of the habitat is directly related to the organization of people and their collective action, it is about the action by and for the people, where the community prevails and not the individuality in the construction of the habitat. The principles and values that drive the Social Production of Habitat are those related to democracy, citizen participation and organization, equity, solidarity; values and principles that are directly related to the process of production of the habitat, taking into account also sustainability and care of the environment. It is important to keep in mind that social production of habitat is a product in which the participation of different social agents enables the creation of habitat and housing.

## Contemporary architecture and traditional building techniques

### Straw Bale Building

Buildings created from the natural environment that surrounds them are generally beautiful, functional and sustainable.

At the end of the 19th century, in the vast plains of North America, the adventure of building a human shelter using straw bales began. Straw bale houses have started from the characteristics of vernacular houses, designed and built by individuals from different cultural backgrounds with access to very different material and economic resources and responding to an infinite variety of sites and living conditions.

The construction technique is simple and adaptable to different requirements and materials. Community construction facilitates the development of sustainable projects. The bales are used as blocks and are joined together, firmly tied to the foundation and covered with mud, lime or cement.

They have structural and seismic resistance capabilities. They are resistant to fire (straw bales, being firmly compacted and covered, do not admit enough air to allow combustion).

Construction costs can be less than for a house made of concrete or other materials. Its great thermal insulation capacity reduces energy, environmental and economic costs. The transformation of agricultural waste into a renewable resource can be beneficial and worthy of experimentation in search of a sustainable construction system.

Build with natural materials such as straw, earth, bamboo etc. recovering construction traditions of the past and adapting them to current needs is an invitation to work for future generations and to create beautiful, economical, comfortable and healthy spaces in search of a sustainable world.

**Bahareque**

Bahareque is a traditional technique found in large regions of the world, called in different ways, better known in many regions as wattle and daub. The technique consists of a solid wooden structure with vertical and horizontal elements that are sometimes filled and generally covered with mud. In Mexico it can be found in various coastal regions and in the mountains.

The recovery of the construction technique in contemporary architecture contributes to the reduction of CO2 emissions and environmental impact. This example presents a contemporary cabin built with the traditional bahareque technique.

**Design / Build workshop Universidad Iberoamericana.**

La Ibero, in Mexico City, seeks to respond to the current socio-environmental reality and enhance the transformative role of the Universidad Iberoamericana through the generation of spaces for meeting and dialogue with society that foster critical, creative, interdisciplinary and intercultural reflection, as well as committed action for the construction of an environmentally sustainable society, socially just and respectful of human rights.

They are based on the committed and pertinent work that the different Advocacy Programs have carried out, and are responsible for the Gender Affairs, Migration Affairs, Human Rights, Interculturality, and Indigenous and Environmental Affairs Programs.

Promote and strengthen spaces for dialogue and relevant work between the University and the various groups in society in order to join forces and respond effectively to the most pressing social needs.

Articulate the Advocacy Programs with the academic areas and external links of the University for the generation, training and dissemination of socially relevant knowledge, as using architecture as a game changing tool.

The workshop operates as an academic and practical space for reflection and action around the current role of architects in the social production of habitat.

The main purpose of the workshop is to trigger a deep sense of socio-environmental responsibility in students, by exploring the potential of architecture as a tool for change to trigger advocacy processes.

The projects addressed by the workshop respond to communities in a state of priority attention and are carried out under participatory processes and the exchange of knowledge (technical + local) that seek to build common knowledge. Likewise, they seek to trigger the empowerment, autonomy and self-management of communities through the social relevance and academic quality of the Universidad Iberoamericana.

**Rammed Earth**

Rammed earth has been used in the same way as other earth techniques intuitively by many cultures around the world. Currently there are examples all over the world, from the great wall in China or small vernacular dwellings, to large residences and other types of complex contemporary architectural projects.

A small cabin in Tepoztlan México, is a good example of simplicity and functionality in a tiny space that opens to the landscape.

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