The Máncora Earthen Architecture Quarters in Northern Peru: A Smart and Economically Realistic Sustainable Housing Alternative?

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ABSTRACT

This paper examines and looks back on the authors on site study conducted in 2005 for a sustainable earthen architecture housing and tourism concept for the coastal town of Máncora in northern Peru.

Máncora is a beach resort town with 10,567 inhabitants (2007) located in the Piura region near the Ecuadorian border in northwestern Peru.

Monetary poverty affects 25.7% of the population, equivalent to approximately 8.5 million people nationwide. Additionally, 4.7% of the population (approximately 1.6 million people) live in extreme poverty. Máncora reflects many aspects of this broader Peruvian social reality. Máncora is situated along the "Nazca Fault," a major tectonic boundary where the oceanic Nazca Plate subducts beneath the continental South American Plate. This rapid convergence drives the formation of the Andes Mountains and regularly generates significant seismic activity along the Peruvian coast, classified as the highest earthquake risk zone, Zone 3.

Under these conditions, a reinforced concrete structural skeleton with earthen infill elements — adobe, rammed earth, and Quincha techniques as a modern hybrid building construction — becomes necessary.
This study attempts to present a more economically realistic alternative to the 17 United Nations Sustainable Development Goals (SDGs): instead of isolated "farmers' family houses" in a "good life" bourgeois-modernist form, it proposes cooperative, modular, earthquake-resistant modern earthen architecture rooted in local vernacular traditions.

The central proposal of the study became the Máncora Earthen Architecture Quarters, inspired by Hassan Fathy's Architecture for the Poor, as described in:

Un concepto sostenible del desarrollo para Mancora (2005) by the author.

The proposed building process is highly resource-efficient: as much local material as possible should be reused directly, using the simplest feasible technical methods with minimal machinery and energy consumption.

The cooperative system is based on shared principles of living and production, particularly within sustainable, bio-friendly agriculture and locally integrated tourism concepts.

Housing combined with local living conditions in the semi-desert climate requires a strict and sustainable drinking water conservation system, including dwelling-integrated compost toilets and shared compost regeneration systems supporting sustainable local self-sufficient gardening.

Last but not least, the project seeks to address the typical third world waste-management crisis surrounding the urbanization of poverty in Máncora — a crisis that threatens the prospects for sustainable ecological tourism in the region.

What do the overall living conditions in Mancora look like in 2026?
The concluding reflections take a closer critical look at the following question:

Why is genuine sustainability rooted in vernacular earthen architecture for the poorest populations in Máncora still not functioning within Peruvian democracy?

KEY WORDS :

Earthen building construction, Earthquake-safe building system, Sustainable urbanization, Local vernacularity

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