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Influence of geological features (geochemistry and mineralogy) of soil wich constitutes adobes in their durability - Huambo, Angola.

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After long years of war, great efforts have been made for the socio-economic development of Angola, mainly in the construction industry. Among the construction techniques, the Adobe is the most used in the province of Huambo, especially by low-income families, which constitute the majority. This technique was established as a historical heritage in the culture of that population. The Huambo province is located in the central region of Angola (Central Plateau) and is bounded on the northeast and east by the province of Bié, on the south and southern by province of Huila, and on the west by the province of Benguela and on the northwest by the province of Kwanza Sul. Has an area of 35,771 km2 and approximately 2,301,524 inhabitants, which corresponds to 58 inhabitants per km2 (Government of the Province of Huambo, 2006).

The buildings in this province, particularly in rural areas, were deeply marked by war. Given the current scenario of development of the country and considering the possibility of integrate systems and traditional building materials, that respect the environment and fit harmoniously into its natural habitat, one of the alternative options in the actual construction, undergoes resume old solutions and traditional materials such as adobe construction.It is in this context that this project is part of a scientific research in order to permit the improvement and optimization of these traditional solutions, responding to current demands for social, economic and environmental sustainability.

The adobe is a building element with potential degradation by water. Due to the climate, subtropical, hot and humid, and geomorphology of the province, about 1000 to 2000 meters of altitude and an extensive river system, these buildings can be vulnerable and present early degradation, exacerbated by lack of knowledge of the properties of geomaterials used and techniques that allow their stabilization and conservation.

This paper aims to study the influence of mineralogy and geochemistry of soils used in the production of adobes applied in the construction of habitations, mainly, because from this knowledge, we can develop alternatives to the resolution of recorded pathologies and to improve the strength and durability of those adobes.

For this purpose, soil samples were collected, in which mineralogical and geochemical tests were performed. Simultaneously, durability and erodibility tests were done by the method of Geelong in the selected adobes.

The results obtained from this research will identify, select and characterize the materials and methods used in construction in raw earth, contributing to the development of knowledge of these sustainable buildings solutions with a strong presence in the Huambo region.

From the analysis of the data obtained will be defined a strategy for the next steps of the scientific research project in course designated "Earth Construction in Angola. Characterization, applications and potentialities.". This project aims to encourage the use of the geomaterials in ecological construction and contribute, however modestly, in building solutions with better performance characteristics, comfort, safety, durability and sustainability.