Appropriate Technology for Housing in Sudan: Evaluation of Innovative Building Materials and Construction Techniques

Akram A. Elkhalifa¹, Amal M.H. Balila², Rasha A. Abubakr³
¹Lecturer, Faculty of Architecture-University of Khartoum akrelk@uofk.edu, akram.elkhalifa@unicam.it
²Teaching Assistant, Faculty of Architecture-University of Khartoum amal2balila@hotmail.com

Abstract

Similar to many developing countries, Sudan is experiencing high and rapid urbanization rates. The urban population of the country, as percentage of total population, increased from 6.8% in 1950 to 40.8% in 2005 and estimated to be 74% by 2050 (UN World Urbanization Prospects, 2008). Wars, conflicts, natural disasters and escaping vulnerability are among the leading forces in the rapid urbanization rates in Sudan. Among many other urban agglomerations problems, adequate and affordable housing form the greatest challenge for governments and concerned parties. Housing in the Sudan comprises, on average, of more than 47% of the individuals’ income.

The National Fund for Housing and Rehabilitation (NFHR) has been established according to a presidential decision in 2008 in an attempt to solve the problems of Housing in Sudan. In search for adequate and affordable housing based on appropriate local building materials and technologies, the NFHR devoted much of it resources to address the problems of the housing sector in Sudan. Research institutes, professional associations and practitioners were invited to give their suggestions and recommendations. Some demonstration models were developed to show the appropriateness of each technology and the extent of its affordability.

The purpose of this study is to carry out a comparative analysis between these different technologies in terms of economical and environmental contexts to fulfill the sustainability development requirements. The suitability of these demonstrative models to the provision of housing in Sudan will be addressed and discussed.

Key Words: Sudan, Housing, Building Materials, Building Technology, Sustainable Development