



Original scientific paper

Sustainable Construction for Affordable Housing Program in Kabul

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ABSTRACT

Afghanistan has suffered from four decades of war, causing a massive migration of the rural population to the cities. Kabul was originally designed for 1,5 million people, whereas there are now 5 million in the city. The importation of modern western styles housing for rapid reconstruction reveals apparent cultural conflict and a significant environmental footprint. The new drive for sustainable reconstruction should consider the use of local materials combined with modern technologies. Earthen architecture underlies the embodiment of Afghan architecture. This research aims to revisit traditional Afghan earthen construction with the tools of industrial modernity. The three soils of the Kabul region are first characterized. Sun-dried mud brick and compressive earth block, with and without stabilization have been prepared and tested in the laboratory to develop the most suitable earth construction element which is cost-effective and easily available compared to imported modern products.



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1. Introduction

Earth has been used for thousands of years and predates any other construction material. Even now, a large number of people live in earth made buildings, especially in developing countries. Currently, 30-40 % of the population live in earth made houses and this accounts for 50% in developing countries (Miccoli et al., 2014; Minke, 2009). In Afghanistan, raw soil is

the main construction material and most people live in dwellings made with earth (Figure 1b). Every ethnic group uses a particular form and tradition for making shelters.

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