

An Assessment of Temperature Variation in building Types in Nigeria: Akure as a Case Study

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Abstract

Five existing buildings constructed with different combinations of building materials were identified around FUTA area in Akure, Ondo State. These buildings are mud houses with corrugated iron roof sheeting, cement block houses with corrugated iron roof sheeting, fired clay houses with corrugated iron roof sheeting, cement block houses with asbestos roof and cement block houses with concrete roofs. The temperature of one room, having the same orientation in each of the buildings was measured with the aid of a mercury-in-glass thermometer at two-hour intervals between 8am and 6pm every day for 10 days. The variation of the inside temperature with time for the different types of roofing and building materials was analysed graphically. The measured outdoor temperature of each building was also regressed against the inside/indoor temperature in order to determine the best combination of the building materials under assessment. The result of the analysis showed that the best combinations of materials are fired clay wall with concrete roof.

Keywords: Building, roof sheetings, temperature, comfort.