

# Traditional House of Bangladesh: Thermal comfort by the traditional roof section

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## Abstract

This paper highlights the thermal performance of the traditional roof section in the context of Dhaka during summer and winter season. The roof is one of the main elements in building in envelope that is directly expose to the sky and therefore it receives significant direct solar radiation. This provides an impact to the thermal behavior of the indoor environment. In Bangladesh, most of the modern building in urban area have flat concrete roof. This roof is normally exposed to the direct solar radiation. The indoor temperature usually will be elevated above the local comfort level. Active mean of cooling is still very expensive for Bangladesh. It can also create massive load on the electrical energy requirement. During the summer time, it becomes very uncomfortable to stay in the top floor of the building or in single story building. On the other hand, in the Bangladesh traditional houses, double layer roof section is used in which the outer roof material is of wooden planks. During daytime, this roof section becomes hot, but after sunset, it becomes cool in a very short time. Currently, the field study and the data are taken by HOBO data logger. Set of HOBO data logger was installed in of model of traditional Bangladesh house in Dhaka. The initial finding of the research is that the traditional Bangladesh house is comfortable in both summer and winter season.

**Keyword:** roof section, thermal comfort