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Applicability of the Building Envelope Requirements of 'Energy Efficient Building Code (EEBC) for Commercial Buildings in Sri Lanka'.

A Dissertation Presented
to
The Faculty of Architecture
University of Maratuwa
Sri Lanka
for
M.Sc. (Architecture) Examination

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abstract

This study is focused on the recently published 'Energy Efficient Building Code (EEBC) for Commercial Buildings in Sri Lanka' and its applicability for Sri Lankan office buildings. It attempts to examine the Building envelope and Air Conditioning aspects of the EEBC and the actual effect of the code towards energy saving. The relevant standards stipulated are critically evaluated. The energy saving guidelines and their implications and the effects in view of energy saving has been practically established. A "typical" average multi-storey office building of Colombo has been (computer) modelled. The "typical" case is developed by analysing the current office building practices in Colombo.

The said model is tested for different interior set-point temperatures and OTTVs (Overall Thermal Transfer Value), including the conditions stipulated in the EEBC thereby discussing the most suitable combinations in Sri Lankan context.

It was found that considerable cooling load is needed to maintain the given standard by EEBC thereby leading to more energy consumption instead of energy saving. Probable ideal standards considering a balance of Energy efficiency and User comfort are obtained. In conclusion recommendations have been made for a better suitable EEBC for Sri Lanka.

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