

## **An Application-Based Indoor Environmental Quality (IEQ) Calculator for Residential Buildings**

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**Abstract :** Based on an indoor environmental quality (IEQ) index established by previous work that indicates the overall IEQ acceptance from the prospect of an occupant in residential buildings in terms of four IEQ factors - thermal comfort, indoor air quality, visual and aural comforts, this study develops a user-friendly IEQ calculator for iOS and Android users to calculate the occupant acceptance and compare the relative performance of IEQ in apartments. The calculator allows the prediction of the best IEQ scenario on a quantitative scale. Any indoor environments under the specific IEQ conditions can be benchmarked against the predicted IEQ acceptance range. This calculator can also suggest how to achieve the best IEQ acceptance among a group of residents.

**Keywords :** calculator, indoor environmental quality (IEQ), residential buildings, 5-star benchmarks

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