

## Indoor Environment Quality and Occupant Resilience Toward Climate Change: A Case Study from Gold Coast, Australia

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**Abstract :** Indoor environmental quality (IEQ) indexes represented the suitability of a place to study, work, and live. Many indexes have been introduced based on the physical measurement or occupant surveys in commercial buildings. The earlier studies did not elaborate on the relationship between energy consumption and IEQ in office buildings. Such a relationship can provide a comprehensive overview of the building's performance. Also, it would find the potential of already constructed buildings under the upcoming climate change. A commercial building in southeast Queensland, Australia, was evaluated in this study. Physical measurements of IEQ and Energy are conducted, and their relationship will be determined using statistical analysis. The case study building is modelled in TRNSys software, and it will be validated using the actual building's BMS data. Then, the modelled building will be simulated by predicted weather data developed by the commonwealth scientific and industrial research organisation of Australia to investigate the occupant resilience and energy consumption. Finally, recommendations will be presented to consume less energy while providing a proper indoor environment for office occupants.

**Keywords :** IEQ, office buildings, thermal comfort, occupant resilience

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