

## **The influence of wind effects on architectural buildings heights in Iraqi residential buildings based on computational fluid dynamics simulations**

### **ABSTRACT**

The gradient of height in buildings is the most common way to prepare a comfortable environment and to increase wind forces around the buildings. This study assessed various design choices that enable architectural buildings to have different heights using computational fluid dynamics (CFD) simulation to analyse wind conditions. Nonetheless, wind effects may create uncomfortable zones around high buildings and may be hazardous for pedestrians in open spaces. As such, this study looked into pedestrian level wind (PLW) to enhance the wind environment of buildings in Iraqi climate. Wind characteristics may create a range of disturbance levels that affect pedestrian areas. Iraqi residential buildings were taken as case study to quantitatively analyse the outdoor buildings at PLW, so as to generate some ideas and solutions between CFD simulation analysis and architectural design to yield an optimal model.

**Keyword:** Height buildings; Architectural buildings; Computational fluid dynamics (CFD); Pedestrian level wind (PLW); Iraqi residential buildings