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Effect of Urbanization and Industrialization Processes on Outdoor Thermal Human Comfort in Egypt

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ABSTRACT

Detailed studies on the effect of urbanization and industrialization processes on outdoor thermal human comfort in Greater Cairo region, Egypt have been performed in this study. Four different districts in Greater Cairo region have been selected to represent rural, suburban, typical urban and industrial areas. The data of surface dry, wet bulb temperatures and wind speed for two different periods represent non-urbanized and urbanized periods have been used. Discomfort indices for the two periods have been calculated for the four districts. The study revealed that urbanization and industrialization processes have resulted in the distinctly modification of human comfortable at all districts. The feeling of quite comfortable reduced from the old non-urbanized period to the recent urbanized period at the four districts. During the recent urbanized period, the rural area has the highest total number of quite comfortable hours while both urban and industrial areas have the lowest total number of hours. The serious hot uncomfortable didn't occur at all districts during the old non-urbanized period while during the recent urbanized period, all people had felt extreme serious hot uncomfortable only at urban and industrial areas. It could be concluded that the urbanization and industrialization processes cause increase of human serious hot uncomfortable feeling which in turn leads to more hindering for the human activities while the rural conditions leads to optimum weather comfort for further and more human activities.

KEYWORDS

Human Comfort, Urbanization, Industrialization, Greater Cairo Region, Egypt

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