

## Impact of Green Roofs on Hot and Humid Climate-Vijayawada

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**Abstract :** In India, Growth and spread of cities lead to the reduction of forests and green areas of the urban center with built structures. This is one of the reasons for increasing temperature about 2-5% in an urban environment and consequently also one of the key causes of urban heat island effects. Green roofs are one option that can reduce the negative impact of urban development providing numerous environmental benefits. In this paper, Vijayawada city is taken as case to study as it is experiencing rapid urbanization because of new capital Amaravati. That has resulted in remarkable urban heat island; which once recorded a highest temperature of 49°C. This paper focuses on the change in quality of the local environment with the introduction of green roofs. An in-depth study has to be carried out to understand the distribution of land surface temperature and land use of Vijayawada. Delineation of an area which has the highest temperature has been selected to adopt green roof retrofitting. Latest technologies of green roof retrofitting have to be implemented in the selected region. The results of the study indicate a significant temperature reduction in the local environment of that region, confirming the potential of green roofs as urban heat island mitigation strategy.

**Keywords :** energy consumption, green roofs, retrofitting, urban heat island

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