Sustainable Urban Development Minimising Urban Heat Island Effect and Imperviousness Factor

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Control of Urban Heat Island (UHI) and increasing permeability shall help to address the issues like increasing energy consumption and incremental storm water flows in the context of sustainable urban development. Extensive field studies have been carried out to quantify urban heat island in the context of Bangalore city. Results of which can be summarized as below -

- Mean air temperature in Commercial Street at centre of city with high development is
 1.5degC higher than Kodathi which is located in the outskirts of Bangalore.
- Amount of heat flux in case of high reflective RCC roof would be almost 77% less compared to uncoated RCC roof during the peak time.
- **1.5°C and 1.9°C reduction in peak air temperatures** possible with reflective roof and green roof respectively when compared to the normal roofs.
- Reduction in energy consumption for commercial buildings across Bangalore in case of reflective roof and with improved micro climate would be 1642MWh//yr which would result in saving of 10,348 million per year.
- Infiltration increases with consideration towards sustainable development and thus potential increase in ground water table may be realized by use of grid pavers.



Hourly Mean Temperatures measured at different locations



