

Investigasi kinerja termal green roof sebagai pendingin pasif di iklim tropis = Investigation on thermal performance of green roof as a passive cooling in tropical climate

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Abstrak

Urban heat island merupakan masalah umum perkotaan disaat isu pemanasan global semakin sering terdengar. Urban heat island mengakibatkan penggunaan energi di perkotaan semakin meningkat akibat temperatur permukaan yang meningkat. Green roof mempunyai keunggulan sebagai atap bangunan perkotaan. Selain dapat menggantikan posisi lahan hijau, green roof dapat menekan penggunaan energi berlebihan akibat penggunaan pendingin ruangan.

Penelitian ini dilakukan di Indonesia dengan iklim tropis dan kelembaban tinggi, menggunakan variasi 7 jenis green roof. Kemampuan terbaik green roof dalam menurunkan temperatur permukaan dasar sebesar 13°C dan penurunan temperatur terendah sebesar 9,4°C dibandingkan dengan tanpa menggunakan green roof.

.....Urban heat island is a common problem urban areas while global warming issue are increasingly being heard. Urban heat island is resulting a massive energy using due to increased surface temperatures. Green roof has many advantages as an urban building roof. In addition to replace the green area, green roof could reduce energy use due to excessive use of air conditioning.

This research was conducted in Indonesia with a tropical climate and high humidity, using a variation of 7 types of green roof. Green roof could reduce the heat gain by 13°C for the maximum and 9,4°C for the minimum than without using the green roof.