APPLICATION OF GREEN BLUE ROOF TO MITIGATE HEAT ISLAND PHENOMENA AND RESILIENT TO CLIMATE CHANGE IN URBAN AREAS: A CASE STUDY FROM SEOUL, KOREA

Abstract

Green blue roof has the potential to reduce the surface temperature of the building in the urban areas. Green blue roof is a new innovative low impact development (LID) practice that has exhibited an option to mitigate the heat island phenomena in urban area. This is the modified form of green roof that has ability to store rainwater in vegetation, soil layer and increases the evapotranspiration rate which decreases the temperature of an area. For this purpose, green blue roof is installed at the Cheong-un middle school building roof, Seoul, Korea. During the different time scenarios the surface temperature from the green blue roof and control roof were analyzed and their results were compared with each other. The results revealed that the surface temperature of green blue roof was much less as compared to control roof under same climatic conditions. From the results it is also concluded that surface temperature value of green blue roof was less than 5°C to 9°C as compared to control roof.

Key words: green blue roof, low impact development (LID), temperature reduction, urban area, urban heat island (UHI)