



DII-03

## **Application of extensive green roof systems to mitigate adverse effects due to urbanization in Sri Lanka**

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Unplanned development, without due regard to the preservation of the environment could lead to degradation of the environment where hydrological, ecological and biological cycles have been badly affected. This affected environment will further deteriorate in future due to unbalance between the built-up areas and availability of flora. Green Roof concept is a better solution to control these issues with a well planed urbanization. This has been proven by many western countries and further researches are in progress to achieve more efficient and effective green roofs. The prime objective of this research is to identify how the affected urban environment can be recovered through the utilization of the Green Roofs for the local conditions. Physical models of green roof and reference roofs have been prepared to study the variation of surface runoff and temperature under the green roofs. Effects of different growing media thicknesses for an extensive green roof and behavior of green roofs under droughts have also been studied. Applicable minimum thickness for an extensive green roof, under the prevailing environmental conditions in Galle has been identified and tested. Life span of extensive green roofs with relevant to the historical drought data has been considered. Surface runoff lag time variations and temperature variations for different conditions of model extensive green roofs have been developed under the results and discussion.

*Keywords:* urbanization, green roof