

# **The Hydrological Performance Investigation Of Light Weight Green Roofs Made From Natural Fibres And Recycled Waste Materials For Stormwater Runoff Mitigation: A Review**

## **ABSTRACT**

Hydrological performance investigation is often required in urban storm water structural design. Green roofs are normally used to provide temporary storage spaces and promoting infiltration, thus mimic pre-development natural hydrologic functions. Therefore, green roofs parameters such as the layers, materials and the depth for each layer must be considered to improve the performance of water retention. At the same time, slope of green roofs also can be factors affecting the green roof runoff retention. Providing a sustainable environment and lightweight green roof are important. Due to the need of sustainable practices to be implemented in construction, there are several research done on using cheap and recyclable materials for green roof building. In striving to find the optimum and sustainable extensive green roof design, the issue of live load in wet conditions is hence, very important. This paper reviews the possible use of recycle materials and natural fibres as a replacement of non-renewable sources for storm water runoff mitigation. It aim to promote the idea of using these waste by combining their usage in both drainage and filter layers. This provides a summary of existing knowledge about the successful use of waste and natural fibres such as rubber crumbs, bio char and palm oil clinker in a green roofs layer. Also help in finding the hydrological performances in green roof to mitigate storm water runoff and the weights (dry and live) as live loads on supporting beams.