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Evaluating Runoff Treatment Efficacy Of Three Lightweight Media For Suspended Raingardens

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Low impact designs (LID), such as raingardens, permeable pavements, bioswales, have proved to be efficient stormwater runoff treatment solutions. However, in often congested urban areas, it may not be viable to find spaces for traditional LID. Suspended raingardens can resolve this issue, providing a compact LID solution for stormwater treatment. Through this study, efforts were made for the first time to evaluate the suitability of three lightweight media for use in suspended raingardens. This was the first part of a multi-stage research project that aims at designing a novel solution to urban stormwater management. Results showed that all three tested lightweight media demonstrated effective treatment of stormwater runoff. The combination of adsorption and filtration proved to be most effective for removing solids and dissolved metals. Results from this study will benefit smart cities striving for green infrastructure without compromising on their available precious land resource.