STACKED BEST MANAGEMENT PRACTICES: EVALUATING THE VARIABLES OF BMPS FOR INCREASED WATER QUALITY, ECOLOGICAL BENEFITS, AND AESTHETIC DESIGN CONSIDERATIONS

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1 ABSTRACT:

Over the past fifty years, water management and design has embarked on a new journey of resource allocation and disparity. A new generation of designers of the built environment are seeking innovative approaches to address the growing demands on our freshwater resources. Best management practices (BMPs) are often the first solution that are employed, however, stacked BMPs are making their way into the discussion of stormwater management for the first time. Stacking BMPs refers to combining multiple BMPs within a single landscape to mirror the flexibility of nature. This review explores the preliminary means of how these ephemeral and flexible landscapes can be achieved in the built urban and suburban environment and by what means we can achieve this - either through altering our design practices or our perception of what a BMP is within a stormwater based landscape. We examine how stacked BMPs can be applied as an alternative approach to singular BMPs in landscape application in order to better evaluate the current methods and practices for stormwater design and ultimately, proposing alternative methods better suited to the coming needs of future generations. In this critical review, we explore the current literature around stacked BMPs primarily focusing on water quality, ecological benefits, and aesthetic values of a stacked BMP as a design approach. Results reveal that, even though our water management styles are evolving to envelope ecological and social considerations - designers still prefer implementing single BMP systems that are heavily engineered for site specific capacities.

1.1 Keywords:

Stormwater, stacked bmp, green infrastructure, water quality, climate change, design, landscape architecture

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