

The concept of phytoremediation for in situ grey water treatment in floating or amphibious communities

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Abstract

Amphibious or floating communities have a similar problem compared to the conventional built ones – they are often in a particular situation in terms of basic services such as: sewage, water supply and electricity. Methods have been developed for flexible connections in amphibious housing design to allow those services to stretch and remain present according to the flood level. However, in certain cases amphibious or floating communities might be located in areas lacking some of those services and in those cases new methods can be appropriate.

This paper will dive more particularly into the concept of integrating grey water treatment through phytoremediation into the architecture of a floating prototype and its surrounding landscape in a fresh water lake in Kuala Lumpur, Malaysia. The project concept was developed as an innovative prototype for construction on water aiming to integrate into the surrounding landscape without having a negative impact on it, but rather as a positive and enhancing addition to it. The prototype was designed to serve as a testing ground for the following elements: produce its own electricity, store and reuse rainwater, use composting toilets, use phytoremediation for grey water treatment and use floating plant islands to improve lake water quality and the evacuated phyto purified grey water.

This paper will explore the concept of the prototype which hasn't yet been implemented and look at the possibility for its use in amphibious communities as well as its utility and application in different climates.

Keywords: phytoremediation; grey water treatment; floating housing; amphibious communities

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