Engineered infiltration systems for urban stormwater quality and quantity

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The StormFilter-project, led by VTT Technical Research Centre of Finland, generates clean technologies for urban stormwater management. New engineered materials and designs will enhance stormwater management by retaining runoff and improving water quality.

The StormFilter-project aims at bio- and mineral-based solutions for stormwater cleaning by using Finnish industrial materials. These materials and related advanced systems can cost-effectively be integrated with the existing ground solutions for stormwater management. The new designs incorporate pollutant sorption and filtering by the engineered surface and sub-base soil layers. Water quality will be enhanced, thus also preparing closed circle technologies for water harvesting.

The project supports Finnish strategies for green urban living, focused on aspects of vegetation health, clean water and societal well-being. Hydrological and biochemical modelling and smart city monitoring technologies are exploited in the new solutions. Implementation and functional optimization of the new methods for green infrastructure and stormwater management will be boosted by the project.

Modelling of strormwater infiltration and cleaning processes, as well as all the stormwater measurement data, can be interconnect by design models to support decision making, and assist in cost optimization. Thus smart city technologies will be integrated for urban maintenance needs for lifetime management.

Based on the project results, cities, stormwater management companies and others actors will get new Finnish guidelines for design, construction and maintenance of the enhanced stormwater infiltration systems. In the guidelines, economical and service life validity is also considered.

More information: www.vtt.fi/stormfilter

Provided by VTT Technical Research Centre of Finland