

Master Thesis

„0°- roofs - influence of contact time and water matrix on the leaching of Mecoprop from bitumen roofing membranes?“

About us

The Chair of Urban Water Management is involved in the education of students (Bachelor and Master) in environmental and civil engineering. Research focuses on urban water supply, wastewater treatment and energy recovery, water recycling, drainage systems, industrial wastewater treatment and the urban water-food-energy nexus. The "Energy-efficient wastewater treatment" research group is particularly concerned with innovative processes for increasing energy efficiency and maximizing energy recovery from the treated residues, for example in the form of energy-rich Biogas.



Topic

Scientists are searching for new methods to decrease the negative impact of climate change on us. Especially, cities are affected by these changes. Higher temperatures and an increase of impervious surfaces support the heat island effect with all its negative side-effects. One way to decrease these effects are green roofs, they combine many important factors to mitigate the impacts of climate change such as water retention, lower roof temperatures and they can even increase biodiversity. Unfortunately, these roofs often use chemical root-barriers such as Mecoprop to protect the buildings from being destroyed by the roots of the flora. These chemicals are often leached by building materials and can further harm the biosphere. The leaching behavior of different chemical root-barriers under different

green roof setups need to be tested in further experiments. Therefore, we are designing and building a multitude of different retention green roofs for further testing.

Tasks

- Literature research on common green roof contaminants and their behavior in nature
- Running an experiment which includes the parameters retention time, roof structure, used root-barrier as well as other side parameters
- Taking samples and analyzing them in the laboratory
- Analyze the data and make a statement on their leaching behavior

Time range

Starting as soon as possible is favored, there will be a 1 to 2 week introduction into the experimental setup, afterwards you will need to perform 11 experiments over the course of 1 month to get all the data you need. Combined with some additional small experiments in the laboratory you have a round thesis and enough time to analyze the data and write your thesis.

Contact

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