

Research content for the short video Peri-urban areas as sponge_ Utopia 2024

"IMAGINE: Peri-urban areas as sponge

... Enabled by research to deal with extreme weather in a PERI-fect future "

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The reinvention of peri-urban spaces as sponge areas

The year 2050 marks an era in which cities and urban areas have become resilient oases in the face of climate change. Thanks to the pioneering research project PeriSponge, peri-urban mobility spaces have been transformed into life-giving sponge areas. Previously threatened by floods, droughts and biodiversity loss, these areas are now characterized by a now revitalized by a blue-green transformation. The once clear boundaries between city and nature are blurring in a harmonious interplay of resilience and regeneration.

In this new world, public spaces, designed according to the principle of blue-green transformation, have become vital components of urban landscapes. They not only offer protection from extreme weather events, but also promote urban biodiversity and create cool, shady shady havens in the midst of urban heat islands. Streets and squares, once gray and sealed, are now living, green arteries that absorb rainwater, provide habitats and improve the microclimate.

Efficiency and quality of life in sponge cities

Advanced technologies and sustainable design are seamlessly intertwined in this future to maximize maximize efficiency and quality of life in these sponge cities. Smart water management systems, controlled by artificial intelligence, regulate water flow and storage to prevent flooding and survive periods of drought.

Photocatalytic surfaces and integrated solar technology help to purify water and air while at the same time generating energy for public facilities. The 2050 vision shows peri-urban areas as vibrant, green networks that interweave cities and landscapes. Sponge areas that store rainwater and and prevent flooding have become the norm. These green corridors not only serve ecological balance, but also as invigorating, communal spaces that invite people to linger and increase the well-being of city dwellers.

People and nature in harmony

In this utopian future, every initiative, every project is a step towards a world in which sustainable coexistence is a reality. PeriSponge is an example of this

transformation, a symbol of a future in which humans and nature live together in perfect harmony.

Research at the site

- **Potentials of peri-urban mobility spaces as sponge territories for climate change adaptation and mitigation, Technical University of Graz**
<https://www.tugraz.at/en/fakultaeten/architektur/research/research-projects/perisponge>