

Strategies for the evaluation of green infrastructure as a measure for climate change adapted urban planning and architecture

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Abstract

It's a fact that urban growth and urbanization accelerates worldwide. It's projected by United Nations that 2050 up to 68 % of the world population will live in cities – in Republic of Korea urbanization will increase up to 88 % in the next 30 years (UN, 2014).

Same time, climate change and its negative impacts, like urban heat island and pluvial flooding, increase dramatically, causing negative effects on urban areas and its citizens. United Nations proclaimed Sustainable Development Goals (SDGs) by 2050 and a variety of guidelines for urban challenges emphasize the use of green infrastructure (GI) and nature-based solutions (NBS) as key solution for climate adaptation of urban areas (UN, 2015; EU, 2016; IUCN, 2016). But all guidelines still appear on a very generic and conceptional level regarding the practical implementation of these measures at city and object level, due the lack of fact-based arguments and evaluation methods of the performance of GI and NBS.

To enable evaluation and optimization of GI and NBS measures, the worldwide first standardized system for climate resilient urban planning and architecture has been developed within a 9 yearlong international research and development process. Dealing with six main urban challenges: climate, water, air, biodiversity, energy and cost, the technology has been applied successfully by more than 30 projects in Austria and abroad and establishes an effective strategy to control climate change adaptation measures in urban development and architecture (Kraus, 2017; Scharf et al., 2017).

Keywords: *urbanization, climate change, climate adaptation, green infrastructure, urban planning*