DESIGNING WITH NATURE

WGIC 2017 BERLIN.com

20 – 22 JUNE 2017

World Green Infrastructure Congress

## Information about the lecture

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| **Speaker** | DI Bernhard Scharf |
| **Title** | Planning Green Infrastructure Solutions for Smart Cities |
| **Group of topics** | 21.06.2017<br>Sustainable Building - Energy - Ecosystemservices Concept |
| **Language** | German or english |
| **Content** | The benefits of Green Infrastructure for urban environments was discussed for many years. Meanwhile it is undisputed that plants represent a key element of smart cities due to their proven multiple benefits as: pluvial flood prevention, urban heat island, air purification, medical and psycholigal effects on citizens and many more.<br>Numerous cities worldwide released guidelines and regulations to foster the implementation of Green Infrastructure. Still the degree of implementation of green infrastructure is unsatisfactory. A main constraint identified by an international consortium was, that planning of green infrastructures was not integrated in typical urban planning processes and the possiblity to optimize effects towards cost not given.<br>Together the consortium developed the GREENpass technology to provide a planning and optimzation tool for urban planning processes. The GREENpass technology comprises of a simulation software, ressource demand analytics, standardized transparent evaluation process tailor made for different urban planning processes. The core engine of the GREENpass technology is a holistic, 3D, high resolution numeric simulation software called ENVI-met. Planning objects, as urban development designs or building plans, are “rebuilt” in the software and objected towards defined climatic framework conditions. The parameters of thermal performance (PET, air temperature, surface temperature, air temperature of outflowing air), windfield, CO2 uptake, heatflux are determined for day and night. A multiparametric analyse of the examined projects calculates evapotranspiration, irrigation demand, cost for installation and maintenance, waterretention and runoff coefficient. Based on this in depth analyses the planning object can be optimized with regard to the named parameters.<br>The individual performance of the planning projects is assessed towards thematic fields mesoclimate, microclimate, waterretention, cost and quality. The applied scales are relative, taking into account the different framework conditions worldwide. The results are summarized in a detailed report. Finally, an official certificate is issued to project developers. |

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