

1ST EUROPEAN URBAN GREEN INFRASTRUCTURE CONFERENCE 2015 VIENNA NOV. 23|24



Conference
Programme
Speakers
Awards
Papers

www.urbangreeninfrastructure.org

Cristina Monteiro

POTENTIALITIES OF INFRARED THERMOGRAPHY APPLICATION TO GREEN ROOFS AROMATIC PLANTS SURFACE TEMPERATURE EVALUATION

Preliminary thermography measurements on green roofs

The intense urbanization in the 19th century led to a change in the climate of urban environments. The replacement of vegetation and expansion of impervious areas promoted the appearance of several environmental problems, such as decrease of urban air quality, risk of floods, wildlife reduction and raise of air temperature in city centres. Green roofs technology may help to overcome these problems and seems to be a solution to reduce the heat island effect and the air temperature in the building's surroundings. Vegetation in roof tops can help lowering urban air temperature due to evapotranspiration.

In the present study, two green roof platforms with different substrates have been implemented with aromatic plant species. Infrared thermography studies have been performed on the potentialities of using the technique to assess the effect of different aromatic plants on temperature mitigation. The results showed that a qualitative evaluation of the surface temperature associated to each species, in a specific moment, can be performed. However, several limitations of this technique must be considered such as the emissivity(ies) of each specie and exterior conditions. The latter limitation can be overcome with dynamic measurements, for longer periods, that will be a future development of this work.

Cristina Monteiro
cmonteiro@porto.ucp.pt
Porto, Portugal
Researcher
Centro de Biotecnologia e Química Fina
Escola Superior de Biotecnologia, Universidade Católica Portuguesa