ПРОЕКТИРОВАНИЕ УМНЫХ ГОРОДСКИХ ПАРКОВ
DESIGNING SMART URBAN PARKS

Алессио Руссо
Alessio Russo

Доцент, Школа искусств, Университет Глостершира
Associate professor, School of Arts, University of Gloucestershire, Francis Close Hall Campus, Cheltenham, UK

Abstract. This paper discusses modern technologies for the design, management, monitoring of urban green spaces by integrating ICT technologies and sustainable landscape design.

Key features of the smart- sustainable landscape approach include water-sensitive urban design (WSUDS) strategies, art installations that generate carbon-neutral electricity, energy-generating exercise equipment, musical fountains, QR codes added to park trees to identify species, ICT technology and sustainable materials.

Keywords: smart cities, ICT, smart parks, toolkit, value criteria.

Introduction

The idea of smart cities has supported the application of technology system solutions (e.g., information and communication technologies (ICTs)) to urban issues, thereby moving focus away from the city's environmental aspects to those related to infrastructure and information use (De Jong, Joss, Schraven, Zhan, & Weijnen, 2015; Russo & Cirella, 2017).

Smart, however, is not just about ICT and technology; smart cities need to provide their people with quality of life, human capital development opportunities, and address sustainable solutions that tackle climate change and urbanization (Camboim, Zawislak, & Pufal, 2018).

Smartly designed and managed urban green spaces such parks, botanical gardens, community gardens, tree alleys are part of the smart city concept. Those “green” elements offer multiple ecosystem services such as carbon storage and sequestration, pollutants removal, stormwater absorption, food production, climate regulation (Chang et al., 2017; Escobedo, Kroeger, & Wagner, 2011; Russo, Escobedo, Cirella, & Zerbe, 2017; Russo, Escobedo, Timilsina, & Zerbe, 2015). However, to our knowledge no previous studies have extensively analysed the planning, management aspects and design elements of urban green spaces within a smart city concept.

Smart Parks

The concept of “smart parks” is defined as “a park that uses technology (environmental, digital, and materials) to achieve a series of values: equitable access, community fit, enhanced health, safety, resilience, water and energy efficiency, and effective operations and maintenance” (UCLA Luskin Center, 2018).

SMART Parks: A Toolkit

The SMART Park toolkit has been developed by the UCLA Luskin Center for Innovation (Jessup, 2018; UCLA Luskin Center, 2018).

The toolkit provides “background on the benefits and challenges of parks today, explaining how technology or creating SMART Parks can help address these challenges to ensure parks achieve the goal of community well-being” (UCLA Luskin Center, 2018).

Furthermore, it addresses the specific priorities of SMART Parks and explains in depth the eight Value Criteria used to define them: (1) Access, (2) Community Fit, (3) Health, (4) Safety, (5) Resilience, (6) Water, (7) Energy, and (8) Operations and Maintenance (UCLA Luskin Center, 2018).

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