Infrastructures

an Open Access Journal by MDPI

CiteScore: 6.0
Impact Factor: 2.9

Special Issue Reprint

Sustainable and Digital Transformation of Road Infrastructures

Edited by: Hugo Silva and Joel R. M. Oliveira

This Reprint presents a curated selection of peer-reviewed articles on the sustainable and digital transformation of road infrastructures. The contributions highlight recent advances in designing, constructing, monitoring, and managing road and transportation assets, emphasizing engineering solutions to environmental, technological, and societal challenges.

The Reprint covers topics such as recycled and bio-based materials, innovative asphalt and cementitious solutions, life-cycle assessment, and strategies to improve the environmental performance of road infrastructure. In parallel, it highlights the growing role of digital technologies, including pavement and bridge monitoring systems, embedded sensors, data-driven condition assessment, digital twins, artificial intelligence, machine learning, and big data, in supporting infrastructure asset management.

Several contributions demonstrate how sensing technologies, connected and autonomous vehicle data, drone-based inspections, and intelligent algorithms improve monitoring efficiency, support informed decision making, and enable more sustainable maintenance and operational strategies. Together, the articles offer an integrated perspective on how to align sustainability objectives with digital tools to enhance infrastructure resilience, performance, and long-term value.

mdpi.com/books/reprint/12168