11. Sustainable Cities and Communities

Scholary Output:
61

International Collaboration:
28

Field-weighted Citation Impact:
1.42

Number of Total Projects:
44

Number of Events:
97

1.

Ozyegin University and Sustainable Mobility Initiative (SMI) Sign a Cooperative Protocol

OzU, and the Sustainable Mobility Initiative (SIM), which was launched to contribute to better integration of transport systems to the new order and develop innovative solutions, have signed a cooperative protocol in order to design the future of Turkey's urban transport systems. The launch event brought together the business world, entrepreneurship ecosystem, civil society, and academicians, with a rich program featuring presentations on traffic density in mega cities, energy consumption, air quality and its sociocultural effects, and digital solutions.

2.

+10 İstanbul Research Workshops / 2021

An open call was made to architects, interior architects, designers and graduate students who would like to take part as the coordinator of 10 working days workshops based on city, architecture, space and product researches and field studies related to Istanbul. Ten days workshops were organized under the coordination of Ozyegin University Department of Architecture between 28th June and 9th July 2021. The first one was "Ecovillage" directed by Gizem Avgan, Gökçe Tomrukçu and Hazal Kızıldağ (all OzU MSc in Architecture students). The second workshop was "Old Tool-New Meaning: Diagram" and directed by Onur Koca. The third workshop was "Being a Virtual Flaneur in Quarantine" which directed by Gözde İrem Cebir Meral and Saadet Kök. The fourth workshop was "Research on 'Mahalle' (district)s of İstanbul" and directed by Prof. Dr. Orhan Hacıhasanoğlu.

3.

CULTURAL HERITAGE: Gamified Immersive Museum Experiences and Cultural Heritage Preservation

The OzU VR Lab puts efforts to digitally achieve and share cultural heritage conservation through photogrammetry. The main objective is to form immersive experiences in Virtual Reality that include gamification. Besides preserving monumental assets against disaster recovery scenarios, the Lab also aims to exhibit them through VR for people who do not have the chance to visit these places.

ÖzU VR Lab

4.

Information Gathering and Damage Prediction Problems and Solution Methods for Urgent Post-Disaster Damage Assessment via Drones

The project by OzU researchers Asst. Prof. Elvin Çoban Göktürk and Prof. Burcu Balçık Koyuncu, is selected for funding by TÜBİTAK ARDEB 1001. This project aims to establish an analytical framework that includes new routing problems and solution methods to carry out emergency damage assessment operations with drones and plan search and rescue operations with constantly collected damage assessment data during the response phase after a severe earthquake affecting a large area. It is planned to analyze the results of the framework with a realistic case analysis which is implemented for Istanbul.

5.

Dr. Derya Deniz's three collaborative projects have received seed funding from the Frontiers of Development Program

Dr. Derya Deniz's three collaborative and multi-disciplinary projects have been recently accepted to receive seed funding from the Frontiers of Development Program of UK Royal Academy of Engineering. Dr. Deniz participated in these one year-term projects as a co-principal investigator (co-PI) to investigate hazard vulnerability and recovery for cities that would support establishing disaster resilience actions for developing communities:

Dr. Deniz's project " NET: New technologies and participatory approaches for disaster resilience" develops the trial application of citizen-science in relation to disasters by collecting data through social media and other channels for the case city of Elazig in Turkey. This approach consists of engaging citizens to take part in those assessments through reporting and learning from the results.

Her other project "Towards mobilising intangible heritage for recovery and resilience" investigates the key role of intangible heritage (such as cultural practices, beliefs, and traditions) for the developing countries such as Nepal and Tunisia in supporting disaster recovery processes. The project delivered an eBooklet summarising cases discussed during the panel discussion, a working paper, and a literature review. Together, they set a foundation upon which further systemic studies can take off.

Lastly, her project "Low-carbon seismic-resistant buildings for a densely populated city (Istanbul, Turkey)" looks for resilient and sustainable solutions to strengthen vulnerable building stock of Istanbul against earthquakes, through exploring and testing a low-carbon structural system as a pilot for a larger project. She is also currently giving consulting services to the Turkish Catastrophe Insurance Pool (TCIP; DASK in Turkish) to develop flood insurance premiums for Turkey.

6.

Multi-hazard Impact and Mitigation Decision-making Models for Industrial Buildings

This TÜBİTAK 3501 Project conducted by Dr. Derya Deniz aims to develop "holistic" models that can first assess multi-hazard impacts and then support decision-making on hazard-mitigation for industrial buildings under earthquakes and their triggered hazards such as liquefactions and fires. With the proposed models, this project will greatly contribute to decision-making processes by different stakeholders, including industrial building owners and industrial zone representatives seeking to make the most effective hazard-mitigation planning; and insurance companies seeking to improve their hazard insurance policies for industrial buildings.

7.

A Tool for Strategic Risk Assessment for the Waterways Based on the Principles-Driven Method

The project, conducted by Asst. Prof. Yigit Can Altan and supported by ERA-NET Cofund- MarTERA program, aims to develop a tool that assesses the risk level of the waterway considering traffic, waterway complexity, and environmental factors. The proposed tool will be designed to analyze the risk of maritime traffic systems, rooted in first principles, supported by big data analysis, machine learning methods, as well as experts' knowledge along with their understanding of the subject.