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The DESURBS project is funded by the European Commission within the Seventh Framework Programme

Start date: January 1, 2011 End date: December 31, 2014

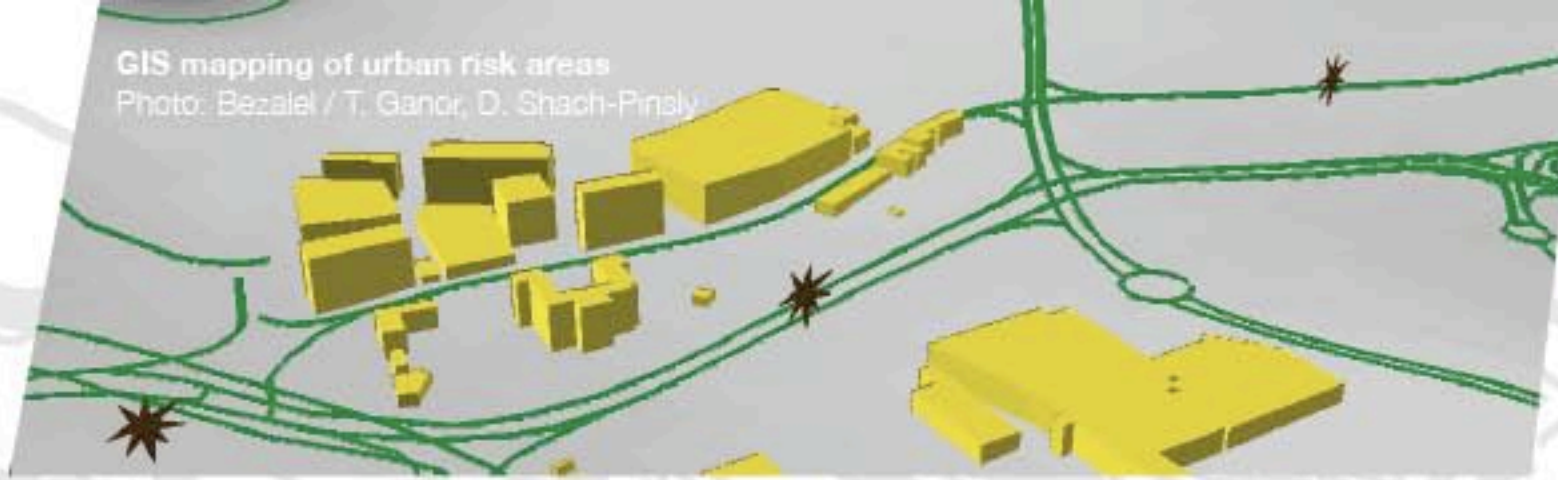
Grant agreement no.: 261652



Designing Safer Urban Spaces

The DESURBS project is an international consortium of eight institutions working to increase security and resilience of urban areas.

GIS mapping of urban risk areas
Photo: Bezalel / T. Ganor, D. Shach-Pirsky



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A unique integrative multidisciplinary approach is being used to gain insights into how urban resilience can be increased with the tools that urban design, industrial design, and user-based research have to offer.

New industrial design security products are being developed in connection with end users, such as this "Smart Bollard". The product will help alleviate bottlenecks in evacuation of a site during or after an emergency situation.

A GIS-based mapping system is being developed to identify and rate high-risk or insecure urban areas. The system is based on measurement of urban design parameters relating to safety, employing Isovist mapping and urban morphology analysis.



Smart Bollard with built-in light and retrofitted light
Photo: Bezalel / V. Prokofiev, E. Adler, D. Ben-Nissan

The DESURBS project is making advances in creating safer urban spaces through the following developments:

1. An urban space security case database that includes disasters and 'near misses' that resulted in injury or loss of life, damage to urban spaces or the surrounding natural environment
2. An integrated security and resilience (ISR) design framework that engages local stakeholders for identifying vulnerabilities and improving urban spaces with respect to security threats and hazards.

3. Comprehensive and generic supporting tools including urban resilient design guidelines and risk and vulnerability assessment methods to facilitate the qualitative ISR assessment process.
4. A web-based Decision Support System Portal integrating the project's outputs and including tailored visualization and mapping tools to help end users better understand the vulnerabilities and design possibilities for improving the safety and security of urban areas.



Sensometer smartphone app
Photo: HUJI / A. Birenboim, N. Shoval

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A dynamic simulation tool is being developed for the management of urban disaster situations, to be used by urban planners and urban disaster management authorities. The tool is designed to be end-user-friendly, in that it combines GIS and urban information databases and makes them accessible. In order to allow flexible reaction to different disaster situations, the tool is applicable both in micro and macro urban settings. Based on multi-agent simulation, the program uses the interactions of individual agents to map the actions of complex systems and allows for the discovery of hidden behavioral patterns.

An additional tool being developed is the SensoMeter. This smartphone application allows users to report about their sense of security and hazards. This provides real time information of security threats on the basis of citizen reports. It allows intervention authorities to identify and map incipient events and act accordingly.



Dynamic Simulation tool
Photo: HUJI / D. Feisenstein, Y. Grinberger