BE S²ECURE

Built Environment Safer in Slow and Emergency Conditions through behavioUral assessed/designed Resilient solutions

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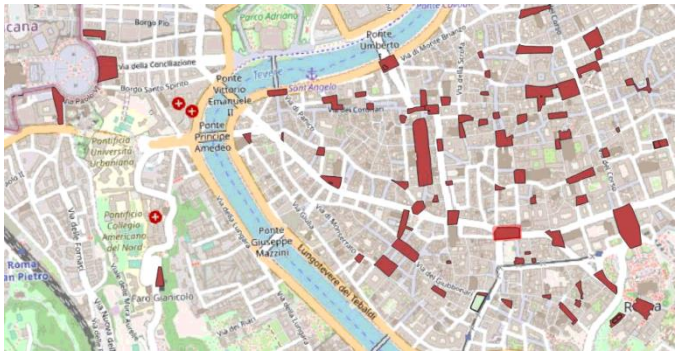
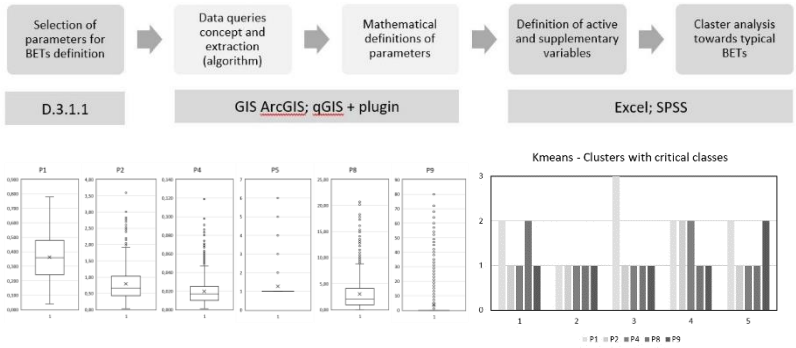
WP 3: Representative models of Built Environment Typologies (BETs) prone to SUOD/SLOD. Case studies selection and data collection

T3.2 - Identification of BETs and their typical risks related to the selected SUOD/SLOD including typical users' exposure.

D3.2.1 – BASIC BETS CONFIGURATION AND TYPICAL COMBINATIONS

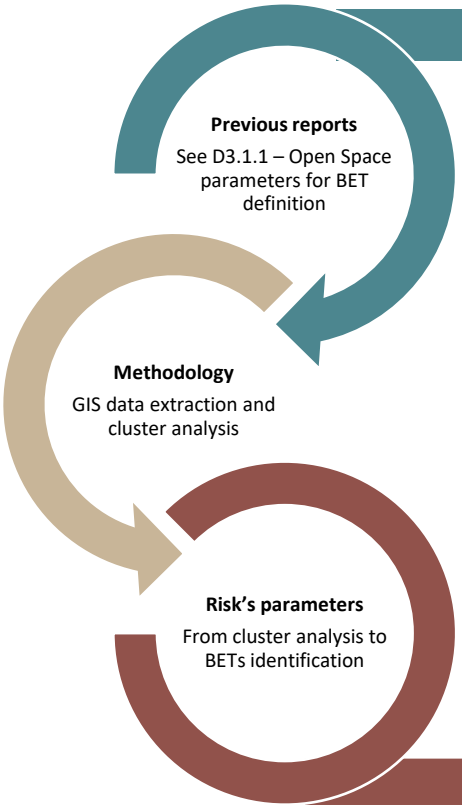




Planning for preparedness for multi-hazard disasters can test abilities to mitigate damages and built resilience, using disaster scenarios simulations. Among risk-prone assets, the open spaces (OSs) have a significant role in the characterization of the built environment (BE) and represent the relevant urban portion on which to develop multi-risk scenarios.

The aim of the report is to elaborate ideal scenarios, namely Building Environment Typologies (BETs), for simulations related to the safety and resilience of BEs in emergency conditions through behavioral approach. The investigation is conducted through the GIS data collection of the common characteristics of open spaces, identified in 5 parameters considered relevant by the scientific literature. These data were processed through non-hierarchical cluster analysis. The results of the cluster analysis identified five groups of OSs, characterized by specific dimensional and functional characteristics. Combining the outcomes of the cluster analysis with critical analysis, nine final BETs were identified.

Thus, the multi-risk scenarios identified through the statistical analysis laid the basis for future risk assessments of BE based on peculiar characteristics of the Italian towns. The results will also provide a comparative assessment of the influence of the features of the OS on both each single risk and the overall multi-risk.



CHARACTERIZATION OF THE ITALIAN BE OPEN SPACES

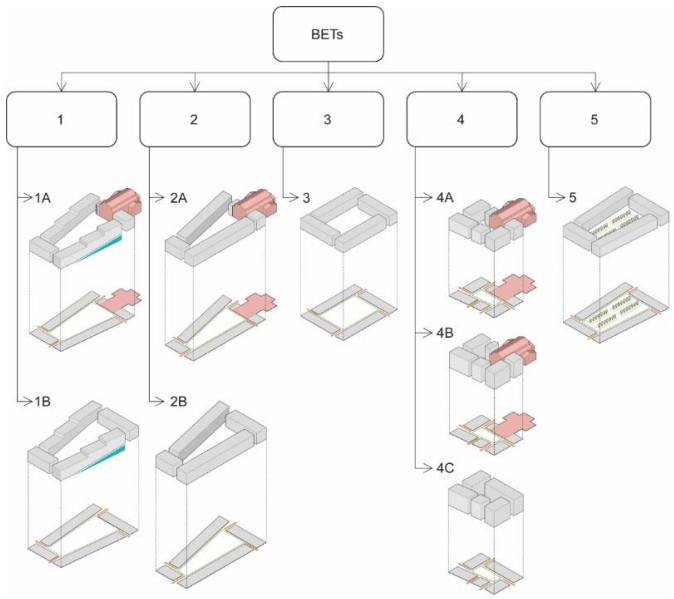
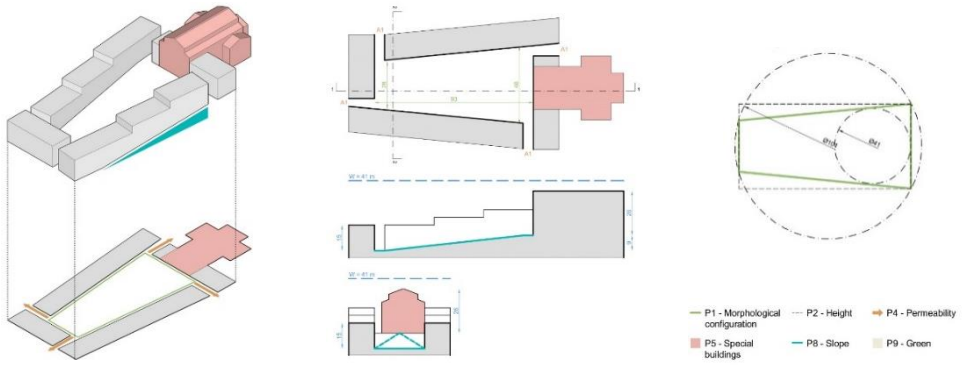


Diagram of the resulting 9 BETs starting from the clusters identified.

IDENTIFICATION AND REPRESENTATION OF ITALIAN BETS



Example. BET 1A: OSs with a medium level of compactness and regularity of the morphology, without problems of overturning of the fronts, with a critical ratio between the number of accesses and perimeter, on sloping ground or with changes in elevation, without green areas.

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