

WP6–Tools and guidelines for improving/designing a resilient BE assessed through case studies and virtual training

T6.2 Assessment of the B-based resilience of the case studies in their current and after applying selected strategies through simulations, users' feedback from VR training. Selection of the best strategies and their technical reliability. Development of tools/guidelines supporting the holistic decision-making process

D6.2.1 – Report on case studies simulation results

ABSTRACT. Simulation-based approaches are powerful methods for assessing risks in the built environment (BE according to a holistic perspective, since they can jointly represent the agents affecting emergency conditions (BE features, disasters feature and combination, users' typologies and reaction). The current deliverable traces the results of the application of agent-based simulation model developed by D4.1.1 on the case studies identified by D3.3.1, depending on their exposure conditions in D3.3.3. Current scenario conditions are assumed, by thus representing each BE before any additional risk-mitigation strategy. This can allow understanding the current level of risk and resilience before promoting resilience-increasing interventions. Using the methods developed in D4.2.1, simulations are organized in two main groups: 1) Slow Onset Disasters (SLODs - heatwaves and pollution implying the permanence of users in the outdoor BE) are assessed by themselves through simplified models relying on the relation between users and the BE conditions; 2) SLOD are then considered as input scenarios for Sudden Onset Disasters (SUODs) implying evacuation in (earthquake) or from (terrorist act) the BE. The specific risk associated to each assessed BE case study are considered to this end, thus avoiding redundant or not relevant risk combinations. The basic key metrics (e.g. evacuation times for SUODs; exposure time for SLODs) defined in D4.1.1 are then used to trace preliminary results from the BEs application, in view of a more extensive assessment through next actions concerning behavioural-based Key Performance Indicators (KPIs) and metrics development in T4.2.

