



Urban prospective: vulnerability, risk protection and sustainable development

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The planner of today cannot go out from a „tabula rasa“ situation any more. Environmental and sustainability issues have already formed the public idea that a „green belt“ of our cities is necessary, a kind of fortification leading to intensive development of towns inside a clearly delimited area within the surrounding nature. Since building on the periphery is limited, and the existing built substance has a certain cultural, architectural or at least environmental value, upgrading of existing buildings gains more and more ground from the design of new buildings. While in the majority of cases this upgrading means bringing the buildings to the comfort required by changed living standards, disaster prone countries face a particular challenge given by the necessity to bring them also to an corresponding safety standard. At the begin the building scale was considered in more approaches, while with the development of technical possibilities today's studies are done on urban scale.

A share of 66% of the whole urban population of Romania is at risk, mainly from the Vrancea seismic source, while floods, tornadoes, gas explosions, fire, terrorism represent also a threat. By aggressing, we become aggressed ourselves and the contemplation becomes an obsolete attitude, which changes exactly by implication. Our „cohabitation“ with the hazards modifies the reference points of stability, compelling us to a receptive and anticipative permanent dynamic action, represented by the new type of risk managerial approach, a risk which aggresses the architectural and urban ecosystem – a symbolic expression of the existential space potentiated towards a permanent reconstruction.

However, in terms of disaster prevention, there are not widely used instruments in threat, likely to be exacerbated under hazards impact. There is a lack of an integrated approach to ensure resilience while preventing losing of landmarks as cultural and psycho-social components of memory and identity.

Starting from a contribution aimed to bring to the representation, manifestation and evolution of urban form in its current understanding, it is hoped to succeed in being a theoretical and practical support for future research in urban planning, which has as scope the study and the determination of the particularities of the urban organism in the real plan of its evolution, of the character and identity which are attributes unsolvably linked to the urban form. Particularly it is dealt with the issue of „risk“, as a particular application of the reflections on continuity and discontinuity of the urban form. Outgoing from the concept of the form, a model is built in order to redefine the urban form. Outgoing from urban topology and the topological transformations given by movement, projection and deformation, it can be proceeded to urban morphogenesis, result of the dynamics of urban forms and generator of the complexity of these. Discontinuity is caused by risks and vulnerability at urban scale. Discontinuities can be static and dynamic, the latter relating the urban form to the context. Risks are a relating element between form and context, relating continuity and discontinuity in the evolution of the urban organism. Risks are detailedly considered, being natural or antropic, with a special view of those in the urban environment. One of the original contributions in this context is the development of formulas regarding the risk in the context, in the static form of the urban form and in the metabolic form of the urban form, thus relating the risk of the individual element to that of the urban form, depending on discontinuities, which affect the vulnerability.

On urban level to the constructive structure corresponds the urban structure and the strategic elements in case of reconstruction, preparedness, mitigation or resilience planning. Focus will be given to reconstruction: case studies from both now and historically, and how the new striated structure relates to that flattened by the disaster (a philosophy approach) and thus to the so-called „heritage habitat“ defined by the historic topology.

The study concerns:

- urban zoning on disaster protection criteria, with security areas, under a multi-hazard assessment, according to the risk class and possible number of affected people.
- pilot centers for emergency habitat, medical and social assistance
- a connection between the theory and history of architecture and urbanism and the management of risk reduction, by implementing the concept of secure habitual patrimony, with a case study of Bucharest protected area.
- a methodology for urban risk mitigation and a strategy, including the post-disaster reconstruction.