Education, Design and Practice – Understanding skills in a Complex World

• Paper / Proposal Title:
Analogous systems as a pedagogical tool in urban design

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• Abstract (300 words):
It is a common experience that urban, suburban, and peri-urban environments have turned into places where we can no more feel at home. Why all these places look alien to humans though created by them?

A big responsibility belongs to urban planning and design, which think in Cartesian geometric terms, packs separated data, and analyze them as separate “layers”. Such a strategy is not realistic.

Albert Einstein proposed the hypothesis that space is not made of particles, but particles influence space and space influences particles. Likewise, we can look at architecture as an element that influences space while it is influenced by it in turn.

Benoît Mandelbrot has found inter-scales similarities in complex systems, a set where space and societies belong. Mitchell Fegenbaum has highlighted that complex systems behave homologically.
Urbanism needs to accomplish a paradigm shift, such as physics did. It is true that urban disciplines incorporate art components, nevertheless they need to be based on a scientific knowledge.

Today we know that abstract simplification of the reality results in alienation from space. The aim is to find ones more conditions for people to dwell in urban space and landscapes by understanding architecture and urban space as an inherent part of complex relationships between space and people.

For understanding urban space based on the complexity shift in mathematics and physics we have introduced a pedagogical methodology to encourage students to critically observe towns and cities as chaotic systems and look for analogous systems on smaller scales. These feature characteristics and qualities similar to those encountered at the urban level, but because of the small scale, one can observe them in a laboratory. This methodology is a pedagogical tool for a thinking process, which introduces a more-than-3D understanding of space, and skips the pitfall of abstraction.

• Author(s) Biography (200 words each):

Tatjana Capuder Vidmar, PhD, MA, univ. dipl. ing. arch.
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1. Education

1987, diploma thesis, University of Ljubljana, Faculty of Architecture
1991, MA, University of Ljubljana, Faculty of Architecture

1991, licence for architecture, Slovene Chamber of Engineers.

1994, PhD, University of Ljubljana, Faculty of Architecture

1994, Architectural Association School of Architecture, London, UK

2. Employments:

1987, November, young researcher, University of Ljubljana, Faculty of Architecture

1994, Urban Planning Institute RS.


2006 - 2018, assistant professor, University of Ljubljana, Biotechnical Faculty, Department of Landscape Architecture.
2018 since, associate professor, University of Ljubljana, Biotechnical Faculty, Department of Landscape Architecture

Tatjana Capuder Vidmar works in the fields of art and science while her artistic work prevails. The artistic research was awarded several times at architectural and urban design competitions and exhibited at national and international exhibitions.

She has published a scientific monograph Mesto in reka / Town and River: study of re-urbanization of the northern part of Ljubljana, Biotechnical Faculty, MOL, Ljubljana, 2013, review by Serafini, S., Flowing Voids, Journal of Biourbanism, JBU Vol. IV, 2016