

FACULTY OF ARCHITECTURE
Prof.dr.ir. HENRI ACHTEN



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Prof.dr.ir. HENRI ACHTEN
THÁKUROVA 9
16634 PRAHA 6

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Review PhD Thesis Vasilija Abramović: Artificial Life Approach to Interactive Architecture: Metamaterial kinetic environments at the edge of chaos

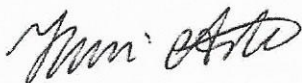
The PhD thesis of Vasilija Abramović deals with the theme of interactivity in architecture. Interactivity in architecture is not well-understood. Theoretical foundations are mostly missing, leaving open the interpretation of interactivity to almost anything that somehow changes. Most of contemporary realizations of interactivity should be considered reactive systems at best, rather than interactive. For interaction to take place, there have to be at least two agents involved in a certain form of communication. In her PhD research, Vasilija Abramović focuses on the artificial agent part of interactive systems. Based on literature review, she argues that an interactive system needs a degree of autonomy. Such autonomy can only be achieved in a bottom-up manner, contrary to top-down approaches. Vasilija Abramović identifies Artificial Life as a potentially promising approach to implement autonomy in the interactive agent. A substantial part of the research has been done and realised at the Interactive Architecture Lab of the Bartlett School of Architecture of University College London. This opportunity was greatly supported by the head of the Interactive Architecture Lab, Professor Ruairi Glynn. The embedding of the work in the context of this lab enhanced the quality of the work that would not have been possible at the Faculty of Architecture of CTU in Prague. I am very grateful for this wonderful collaboration, and extend my thanks to Professor Ruairi Glynn. Interactive architecture must be investigated on three levels: theoretical; speculative; and physical. Only through confrontation with physical

prototypes is it possible to assess the potential impact of interactive architecture. Vasilija Abramović chose this strategy to investigate interactive architecture. The realization of a prototype lead her to explore three technologies: (1) artificial life for autonomous control; (2) metamaterials for materialization of the physical object; and (3) soft robotics for the linking between control and embodiment of the prototype. All three technologies are integrated in the main piece of the research work, the installation Edge of Chaos.

Edge of Chaos is a very remarkable prototype. In many cases, prototypes serve a demonstration purpose limited to a laboratory setting, in controlled environments, and with limited access of people to the prototype (typically one at a time, with the researcher nearby). Edge of Chaos completely turns the tables in these respects. It was installed and moved to three international events, confronted by thousands of visitors, and remotely observed by means of cameras.

The results of the observations are modest and methodologically well-founded on the visual material provided by the cameras and personal observation of people interacting with Edge of Chaos. Both the realization of the prototype and the experimental investigation are of a very high level of quality. Based on this review, I therefore support the thesis to be passed as excellent research work, and give the mark 'A'.

Thank you for your consideration.



Prof.dr.ir. Henri Achten