

## **City Gaming and Participation**

Designing with computed matter models for enhancing user participation in design

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### **ABSTRACT**

Technologies are transforming architecture into a more reactive and evolutionary organism, able to interact in real time with multiple agents such as the environment, time or user needs. The emergence of these responsive environments boosts new relations among users, architects and space. If architecture of built (or unbuilt) space can be programmed to perform, the key question to deal with is: who the actuator of such a performance is. This paper engages with the idea that responsive technologies, such as Virtual and Augmented Reality and User/Gaming Interfaces, can be used by architects and urban designers as a tool for enhanced participatory design and as a tool for evaluating prior or future design decisions. Two case studies, using responsive technologies for participatory urban design are being explored. The case studies have been developed in Mumbai and Barcelona as experimental pilot projects for acquiring qualitative and quantitative data on the process of technologically mediated design participation. Additionally, the goal of the developed case studies explored in this paper, is, to create the contributing framework for the definition of the future tasks of the designer. The latter, is not seen anymore as just the final aesthetic creator but as the mediator, creator and developer of open systems and participatory design computed aided interfaces. Such creator carries the responsibility of designing processes that are fed by data collected prior to the participation event as well as curating collective decisions by overlapping data collected prior, during and after the event.

### **FRAMEWORK**

The idea of technologically mediated user empowerment in design has its roots back in the 1960s and 1970s when for the first time the capacity of professional designers to respond successfully to the user's continuous needs and society's complexity was questioned. From visionary architects such as Yona Friedman and Cedric Price to pioneers of computation such as Nicholas Negroponte and the MIT Machine group, it is clear that the idea of "design for the people" was giving way to the idea of "design with the people". In such idea, high end final aesthetics are becoming obsolete, spaces are conceived as "a kind of scaffold enclosing a socially interactive machine"<sup>1</sup>, the model of [unique design and unique decision] is questioned and the user is being placed as the protagonist that operates the various performances of the responsive "built structures integrated with computing power"<sup>2</sup>.

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<sup>1</sup> Stanley Mathews Hobart and William Smith Colleges, *The Fun Palace: Cedric Price's experiment in architecture and technology* Technoetic Arts: A Journal of Speculative Research Volume 3 Number 2. © Intellect Ltd 2005.

<sup>2</sup> Negroponte, N.: *Soft Architecture Machines*, Cambridge, MA: MIT Press, 1975

Today, few decades later, user/gaming interfaces and virtual or augmented reality in combination with connected smart devices and the Internet of things empower users to experiment multiple and different digital spatial realities blurring the limits and form of physical space and questioning the need of high-designed final aesthetics. Those new processes of responsive design and production bring the user back to the centre of design. The user is empowered to change, customize and adapt the environment in real time, crossing the limits of physical matter and traditional drawings. Emerging technologies reveal new ways of architecture and participation and the paper claims an active role for both architects and users as co-designers of new urban relations, behaviours and operations. Gaming and responsive technologies of Virtual and Augmented Reality become a tool for the designer to share and evaluate the design process through continuous real time user's feedback.

Within this dynamic context, it becomes fundamental for the architectural discipline to rethink existing processes and logics, and define the architect's new role. Is the future architect a mediator rather than a final form creator? And who/which are the future actors of the architectural production?

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Credits

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