Transforming Cities: A 3D User Experience Design for Social Behavior Change and Urban Sustainability

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Abstract. The purpose of this research-project is designing a multifunctional interactive and inter-connective shelter for all (especially millennials) where to live, work and think, while acquiring healthier and sustainable lifestyles and nourishing the need to belong to a community. The techno-shelters will allow to develop a socially influencing system which transforms new and next generations behavior and attitude, persuading them to lead lives that they value.

Keywords: Persuasive Cities, Transforming Sociotech Design, Wellbeing.

1 Introduction and Objective

 "Human development is about much more than the rise or fall of national incomes. It is about creating an environment in which people can develop their full potential and lead productive, creative lives in accord with their needs and interests. People are the real wealth of nations" [2]. Lower employment levels and smaller incomes have left younger Millennials with less money than previous generations. Instead of owning anything, they prefer to live in more flexible, adaptable, compact, shareable and resilient environments within vibrant urban areas, and their houses are often used as places to connect, work, buy or studying on-line, as entire persuasive platforms augmented with technology. This generation is reshaping future societies and defining new models of housing affordability [4].

Experimenting with new design to provide housing in a variety of sizes, types and locations, will be essential for meeting future urban housing need. Emerging forms of housing often do not fit within the numerical standards and rigid approval requirements under Urban Regulations. This usually results in added complications and a wide variation between local councils therefore limiting the growth of these new housing forms. Solutions rather need to be holistic and fundamental, including both mitigation and adaptation approaches and leading to fundamental changes in existing planning strategies [1]. A socio-technical transformation is needed [5]. This research is aimed to combine cutting edge technology with a holistic approach towards user experience design for social behavior change and urban sustainability transformation.

2 Method and Outcomes

Phase 1: Setting strategic collaborations. At a political level further exploration and research need to be done to encourage ongoing innovation in housing types and rising possibilities to remove the barriers which impede their delivery. At a community level, people will be involved through questionnaires and surveys, training and workshops—take up actions to encourage them to live more sustainably.

Phase 2: Prototyping. The research will then further technical, functional, morphological analysis, laboratory mock ups and test through digital design and robotic fabrication, until delivering a full working prototype of a multifunctional shelter (Pod), which simultaneously provide a house, an office and a commuting alternative to cars. At a building level, it will represent a prototype-spaces and persuasive platform that respond to the regular usage patterns of its occupants and encourage further innovative smaller homes to suit lifestyles and budgets.

Phase 3: Testing. Lastly, the research will develop and test applications. Converting under used public areas into urban green camps for hosting the Pods, we can create a network of interlinked, multipurpose open and green spaces across cities for providing minimal-innovative housing types for allowing more people to live where they want. The Pod should be able to influence entire systems - by linking real-time data with traffic planning, for example, to reduce congestion and create more livable, productive environments, by involving communities in digital activities, improving community access to recreation and exercise, encouraging social interaction, etc.

This research will define an interdisciplinary model to deliver new urban solutions through technologies that simultaneously address important problems. Improving wellbeing through a human-centered approach, which includes persuasive technologies imbedded in mobile shelters, is the main expected outcome of this research. This system will also provide environmental, social, and economic benefits [3] to meet the young citizens new needs. This local system could be used to refine guidelines for urban revitalization solutions for the contemporary smart cities emerging worldwide.

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