

Architectural Design Strategies and Visual Perception of Contemporary Spatial Design

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Abstract : In today's architectural practice, during the process of designing public, educational, healthcare and cultural space, human-centered architectural designs helping spatial orientation, safe space usage and the appropriate spatial sequence of actions are gaining increasing importance. Related to the methodology of designing public buildings, several scientific experiments in spatial recognition, spatial analysis and spatial psychology with regard to the components of space producing mental and physiological effects have been going on at the Department of Architectural Design and the Interdisciplinary Student Workshop (IDM) at the Széchenyi István University, Győr since 2013. Defining the creation of preventive, anticipated spatial design and the architectural tools of spatial comfort of public buildings and their practical usability are in the limelight of our research. In the experiments applying eye-tracking cameras, we studied the way public spaces are used, especially concentrating on the characteristics of spatial behaviour, orientation, recognition, the sequence of actions, and space usage. Along with the role of mental maps, human perception, and interaction problems in public spaces (at railway stations, galleries, and educational institutions), we analyzed the spatial situations influencing psychological and ergonomic factors. We also analyzed the eye movements of the experimental subjects in dynamic situations, in spatial procession, using stairs and corridors. We monitored both the consequences and the distorting effects of the ocular dominance of the right eye on spatial orientation; we analyzed the gender-based differences of women and men's orientation, stress-inducing spaces, spaces affecting concentration and the spatial situation influencing territorial behaviour. Based on these observations, we collected the components of creating public interior spaces, which -according to our theory- contribute to the optimal usability of public spaces. We summed up our research in criteria for design, including 10 points. Our further goals are testing design principles needed for optimizing orientation and space usage, their discussion, refinement, and practical usage.

Keywords : architecture, eye-tracking, human-centered spatial design, public interior spaces, visual perception

Conference Title : ICAPDE 2019 : International Conference on Architectural Planning, Design and Environment

Conference Location : Prague, Czechia

Conference Dates : September 05-06, 2019