

Ph.D. Thesis

**„The impact of computerization on the character and extent of user participation in the design process of single-family houses”**

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**Abstract**

The subject of this dissertation is the impact of computerization on participation of residential space users in the design process. This topic was examined on the example of single-family houses. The research was conducted through cases studies of digital tools and methods supporting design participation. The collected cases include both research studies and commercially created examples.

In addition, attempts were made to develop proprietary software supporting participatory design of houses. The HOPLA-Home Planner tool, as one of the results of that work, was used to conduct simulation studies with students of the Faculty of Architecture of the Warsaw University of Technology and people not associated with architectural design.

The collected research materials were used to analyze the issue of computer aided design participation broken down into three areas representing: the tool, the creator and the recipient.

The tools supporting home users in the design process require guaranteeing the correctness of the obtained solutions and the possibility of their realization. Computer programs extend the scope of participation and increase its range.

The creators of a concept of computer aided participatory design of houses were architects. Development and implementation of tools by professional designers extends their standard duties and responsibilities.

The recipients of computer tools supporting participation gain a number of capabilities to decide on the final design outcome. The use of software affects the way they perceive designing and triggers the desire to actively decide on own living space.

**Key words:**

computer aided design, mass customization, participatory design, residential architecture, single-family housing

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