

## Bibliografia

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## MASS CUSTOMIZATION IN RESIDENTIAL BUILDINGS

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Expectations concerning architecture in the information era grow together with its users increasing architectural consciousness as well as with new technological and economic possibilities. Although usually the process of designing architecture is a single act, resulting in the creation of a new structure influenced by the customer, in many spheres of design the final user has a minimal impact on the shaping of the space in which he/she is going to function. One of such spheres is the architecture of standardized single-family houses.

The present work is aimed at analyzing and testing alternative designing methods helping to adjust such houses to the needs of individual customers. Implementing such alternative methods will be possible if computer software is created which will allow customers to modify the standard layout without the architect's direct involvement, only following the general principles of design set for the given project. Selling products adjusted to the personal needs of users is an increasingly common strategy in industrial design. It is called 'mass customization', combining the notions of mass production and customized design.

Algorithms developed by Stiny and Mitchell,<sup>1</sup> Hersey and Friedman,<sup>2</sup> Duarte,<sup>3</sup> or Merrell, Schkufza and Koltun<sup>4</sup> prove that it is possible to encode design principles for the purpose of the automatic generation of layouts of desired shape. Those examples not only bring us closer the idea of mass-customized housing but also show that systemic thinking about layout has long been applied by architects in designing. Of particular interest for architects should be the method proposed by Merrell, Schkufza and Koltun,<sup>5</sup> since they have worked out their system of single-family house generation without an assistance of any architect, drawing all the necessary data from an automatic analysis of a corpus of standard layouts (Fig 1).

Keywords: mass customization, process of designing architecture

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<sup>1</sup> G. Stiny, W. J. Mitchell, *The Palladian grammar*. „Environment and Planning B”, 1978, 5(1), p. 5–18.

<sup>2</sup> G. Hersey, R. Freedman, *Possible Palladian Villas: (Plus a Few Instructively Impossible Ones)*, MIT Press, 1992.

<sup>3</sup> J. P. Duarte, *Towards the mass customization of housing: the grammar of Siza's houses at Malagueira*, „Environment and Planning B: Planning and Design”, 2005, 32(3), p. 347–380.

<sup>4</sup> P. Merrell, E. Schkufza, V. Koltun, *Computer-generated residential building layouts*, ACM Trans. Graph., 2010, 29(6), p. 1–12.

<sup>5</sup> P. Merrell, op. cit.

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