

Strategies for Parametric Design in Architecture

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Abstract: *A new specialist design role is emerging in the construction industry. The primary task related to this role is focused on the control, development and sharing of geometric information with members of the design team in order to develop a design solution. Individuals engaged in this role can be described as a parametric designers. Parametric design involves the exploration of multiple solutions to architectural design problems using parametric models. In the past these models have been defined by computer programs, now commercially available parametric software provides a simpler means of creating these models. It is anticipated that the emergence of parametric designers will spread and a deeper understanding of the role is required. This thesis is aimed at establishing a detailed understanding of the tasks related to this new specialism and to develop a set of considerations that should be made when undertaking these tasks. The position of the parametric designer in architectural practice presents new opportunities in the design process this thesis also aims to capture these. Developments in this field of design are driven by practice. It is proposed that a generalised understanding of applied parametric design is primarily developed through the study of practical experience. Two bodies of work inform this study. First, a detailed analytical review of published work that focuses on the application of parametric technology and originates from practice. This material concentrates on the documentation of case studies from a limited number of practices. Second, a series of case studies involving the author as participant and observer in the context of contemporary practice. This primary research of applied use of parametric tools is documented in detail and generalised findings are extracted. Analysis of the literature from practice and generalisations based on case studies is contrasted with a review of relevant design theory. Based on this, a series of strategies for the parametric designer are identified and discussed.*

Keywords: Parametric Design

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