ONLINE EDUCATION: TEACHING IN A TIME OF CHANGE

• Paper / Proposal Title:
Didactics and circumstance: External representations in architectural design teaching

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• Abstract (300 words):
Design occupies a central position in architectural practice and education. The complexity of the procedures necessary to achieve this double process requires the designer to use external representations as a cognitive support. In addition to their importance as a design instrument, external representations also assume a determining role in the educational context, functioning as a means of interaction between professors and students. However, the present circumstance – determined by the consequences of the pandemic emergency – demanded from the educational institutions immediate transformations to adapt to non presential teaching modalities.

With this paper it is intended to present the results of a research developed on the relation between the forms of representation and the architectural design teaching. The research had as its object the educational model of two schools – the Politecnico di Milano and the Faculty of Architecture of the University of Porto – and was led by three main
objectives: to characterize the educational model followed in both schools, focused on the representative component and its role; to interpret the relation between forms of representation and the architectural design teaching processes; to consider the transformations caused by the pandemic emergency, and the possibilities for the future.

Methodologically, the research followed a qualitative embedded multiple case study design. The educational model was approached in both schools considering its Context and three unities of analysis: the educational Purposes, Principles and Practices. In order to guide the procedures of data collection and analysis, a Characterization Matrix was developed, allowing to relate the three unities of analysis with the three main sources of evidence: professors, expressing how the model is Assumed; design classes, expressing how the model is Achieved; and students, expressing how the model is Acquired. The main research methods used were the naturalistic and participatory observation, in-person interview and documentary and bibliographic review.

• Author(s) Biography (200 words each):

Rafael Sousa Santos (1991) completed a master’s degree in Architecture at the Faculty of Architecture of the University of Porto (FAUP) in 2016 with the thesis “Life and movement: Hypothesis of urban regeneration about Porto’s Estrada da Circunvalação”. During his master’s, he participated as an intern at the Centre for Studies of the Faculty of Architecture (CEFA-UP) on the development of the Belmonte Revitalization Project (between 2014 and 2015). In 2017 he worked as an intern architect at Contemporânea | Manuel Graça Dias + Egas José Vieira, in Lisbon. Currently he is a PhD student in Architecture at FAUP, with supervisors from FAUP, Politecnico di Milano and Aahrus University, developing a research about the forms of representation and its role in architectural design teaching (since 2017). He also collaborated in the curricular units of Economia Urbana and Urbanística 2 of Integrated Master’s in Architecture (MIARQ) at FAUP (between 2017 and 2020).

Clara Pimenta do Vale (1967) is an Architect by University of Porto (FAUP 1991), specialized in building physics and Portuguese 20th-century construction history. She holds an MSc in Building Construction by Faculty of Engineering (FEUP 1999) and a PhD in Architecture with the thesis “An urban alignment in the construction of Porto – Boavista Axis (1927-1999) – Contribution to Portuguese Construction History in the 20th-century” (FAUP 2012). Currently she is Assistant Professor at the Faculty of Architecture and researcher at CEAU - Center for Studies in Architecture and Urbanism in the groups: Architecture, City and Territory Heritage (PACT) and Digital Fabrication Laboratory (DFL). She was a practitioner architect (1991-2004), and lecturer (1999-2012). She is also a photographer with several photo exhibitions. Research focus: Building Physics; Sustainability; 20th Century Construction History; Building Construction Legislation;
Vernacular Architecture; Earthen Architecture; The social role of architecture; Emerging technologies applied to building construction; Rehabilitation and reuse; Architectural education; E-learning and ICT. Supervisor of 2 on-going Ph.D. theses and 45 Master's dissertations in Architecture (6 in progress). She is the co-author of four books and the author or co-author of more then fifty other publications.

Barbara Bogoni (1970) is Ph.D. in Interior Architecture since 2003 and Assistant Professor in Architectural and Urban Design in the Politecnico di Milano since 2004. Her research interests range among urban morphology, architectural design and interior architecture. She has developed a continuous collaborative work with Souto de Moura, in the framework of the didactic, research and design activities carried out at the Mantova Campus, and with Carrilho da Graça and Paulo David, with whom she shares the activities carried out in the Design (about teaching: A scuola con Eduardo Souto de Moura, Franco Angeli, 2018).

Poul Henning Kirkegaard (1962) is M.Sc. in Civil and Structural Engineering from Aalborg University in 1988 and Ph.D in Optimal Design of System Identification Experiments from Aalborg University, Department of Civil Engineering in 1991. From 1988 to 2003 his research and teaching topics were mainly related to Structural Dynamics, Structural Reliability, Building Acoustics, Structural Identification and Structural Health Monitoring. Since 2003 his research and teaching topics have been Adaptive Structures, Computational Morphogenesis, Tectonic Form & Design and Evidence Based Design. In 2010 he was appointed as Full Professor in Innovative Design of Structures at the Department of Civil Engineering, Aalborg University. Poul Henning Kirkegaard is today Full Professor at the Department of Engineering, Aarhus University in Engineering & Architectural Design. His vision for the research and teaching focuses on bridging the engineering topics to architecture and vice versa.