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Integrated Interdisciplinary Design. The Environment as Part of Architectural Education

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Abstract. Interdisciplinary architectural design plays a significant role in education and research at the Department of Architecture at the University of Cyprus. Interdisciplinary design with emphasis in technology is applied in the main studio of the final semester of the first three years core studies, whereas the design of the building requires a holistic, integrated development, in respect to the functions, form, structure, construction and energy efficiency. The final fifth year of studies requires a research based design development. Theoretical investigations and a state of the art documentation on specific subjects of interest form the basis for a parallel or subsequent, in any case rather nonlinear development of the design thesis. The analysis of the two main directions of interdisciplinary design, the holistic integrative design and the research based design, applied at different program levels at the Department of Architecture at the University of Cyprus, reveals in terms of the environmental aspects of the design specific similarities and different technological potentialities achieved herewith.

Key words

Architectural Education, Integrated Interdisciplinary Design, Sustainability.

1. Introduction

While the key importance of the act of design in architectural education and practice is indubitable, based on the contemporary interpretation of architecture, an integrated approach to design may be conducted within the multidisciplinary nature of the area, with one common horizontal connecting element, namely the architectural design intentions and aim [1-3]. International applications, based on a timely re-adaptation of intervention of technological parameters and in particular of the significant areas of the structure, construction and environmental systems in the architectural design, have succeeded in a timeless quality of the built up result through the optimized tuning between the desirability of the building form and functional spaces with the structure, materials and construction [4]. Furthermore an interrelation of technology with architecture from an early design stage enhances the achievement and application of respective technological innovations, while aiming at the improvement of individual or multiple architectural parameters within the holistic design context. In this respect two independent or interdependent directions may be followed:

- The integration of the design vision, structure, construction and environmental systems to form the architectural design syntax – design driven technological developments.
- The interactive architectural design process through innovative technology systems applications – technological developments driven design.

Based on four recent architectural studio design examples at different stages of the Diploma studies with emphasis on technology – two at the sixth semester of the 4-years B.Sc. in Architecture and two at the final Diploma year (fifth year), supervised by the authors at the Department of Architecture at the University of Cyprus, the paper examines the architectural-technological potentialities in the sustainability of the designs, made possible by applying the specific design-syntax. The design case studies indicate the way that advanced interdisciplinary design based research supports the development of the initial architectural aims on one side, leading thus to technological innovations and the way that design may be influenced by environmental considerations and aims on the other side, i.e. technology transfer within architecture.