

HOW CAN A REPRESENTATIONAL STRUCTURE OF WEB RESOURCES SUPPORT THE COGNITIVE NATURE OF DESIGN THINKING?

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Web Technology has opened opportunities for interaction and the sharing of design knowledge in ways which were not available before. Some limitations in the use of current technology are the lack of order and the lack of conceptual structure for the representation of information. The content and structure of design descriptions impacts strongly upon the quality of discourse within a particular domain. Beyond the exchange of information and visual images, communication must be dependent upon level of order and representation of conceptual content. Representations must encompass a broad range of expressive potential including verbal and visual media of various types and must include conceptual content as well as data and information.

In our recent work we have explored how the structuring and formal representation of designs can contribute to the expressive power of Web-based design resources. We have proposed that appropriate representational formalisms, and structuring of design information are means whereby we can realize the expressive power of Web resources. Furthermore we present how design information resources in the Web possess expressive power characteristic of design thinking. We have proposed a set of design abstractions which may function as mechanisms which can transcend specific domain boundaries. This way, the body of diverse high-level abstractions in a design domain may support cross-contextual indexing, in the sense that they are not limited only to a specific design domain. Our conceptual structure, can also enhance the content and search in visual knowledge based resources. That is, the environment which supports the collaborative use and construction of design resources should be as conceptually rich as the cognitive capabilities of the design team employing these resources. In this paper we also report on our on-going experiment in which we develop a conceptual structure for knowledge representation of Israeli Architectural Precedents.