

# Designing a virtual museum within a museum

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## Extended abstract

The project "Virtual Museums" was sponsored by the Greek General Secretariat of Research and Technology. Its main objective was to create a virtual environment (VE) for enhancing the experience of visiting a museum by affording viewing and manipulation of certain exhibits. Ten real museums which exist in Athens (Anthropology, Forensic Science, Hygiene, Gouladris Museum of Cycladic Art, Archaeological Museum, Museum of History of the Athens University, Mineralogy, Geology, Botanical, Zoology) participated in the project and provided 2D and/or 3D content to be digitised and presented within the virtual environment (VE). This VE would be installed within the participating real museums and experienced locally, while a specially developed application would enable remote visitors to search and view exhibits' resources (3d objects, images, video, etc.) through the Internet. Software tools necessary for the museums' supervisors to index, categorise and retrieve objects were also created.

Reasons which justify the introduction of a VE, comprising museum content, within the space of the museum itself are: a) to overcome the limitations of available exhibition space, b) the need to enliven exhibit presentation, c) the production of a multisensory experience, d) the ability to create a simulation of important heritage objects or environments, e) the production of exhibitions which can be easily transported or remotely experienced, f) the enhancement of navigation within museum content, g) the ability to provide visualisations of hazardous or remote sites. Finally, a VE system may support the process of designing an exhibition.

The design of the virtual museum followed a task analysis methodology; proposed by Parent [1]. Design requirements for participants (researchers, students and general public) and for the target application were identified. These requirements determined the manner in which the museum content was organised and categorised and also informed the creative phase of the design at all times.

The development of the Virtual Museum consisted of four main tasks. The first was the digitisation of exhibits to be presented; the second was the development of the Virtual Museum environmental elements, within which the exhibits would be spatially arranged and presented; the third was the actual integration of exhibits within the virtual space; finally the

manner in which participants navigated within the VE and interacted with its elements was implemented.

All aspects of the virtual museum experience were organised so as to add to the participant's knowledge acquisition and entertainment, mainly focussing on the educational aspect of the museum experience, rather than the aesthetic one. Emphasis was given on the functionality of the environment regarding user navigation and content presentation. The manner in which space was designed within the museum aimed at aiding the participant into navigating within the VE, while maintaining a sense of orientation provided by appropriately designed environmental information. The utilisation of architectural knowledge has proved invaluable in enhancing the participant's environmental knowledge and in directing participant attention towards certain points or messages within the exhibition space.

The final virtual museum environment does not resemble a realistic representation of museum building. The approach followed in designing the museum maintained certain generic environmental elements of the real world and attempted to investigate more abstract, non-realistic forms and elements which were thought to improve the effectiveness and impact of the exhibition.

[1] Parent, A. A virtual environment task-analysis tool for the creation of virtual art exhibits. *Presence*, 8(3): 355-365, June 1999, MIT Press.



Views from within the irtual museum environment.