VIEW OF AUGMENTED REALITY TECHNOLOGIES IN ARCHITECTURAL GUIDE; THE EVALUATION ON EINDHOVEN CITY

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Technological advances have created virtual living space, as well as having a place in every aspect of people’s life. Today, virtuality is leaving its place to mixed form of reality and virtuality. In information technology, this link between virtuality and reality is presented people as Augmented Reality. Many people use the technology that we have been using via mobile application in our daily life for years but its Augmented Reality name was not known. Adoption and understanding of what the technology is by people that use it is important for continuity of developments. There have been many studies on Augmented Reality in both hardware and software areas. Despite all the efforts, still there are some limitations, but they are expected to be overcome in time. The advances in Augmented Reality technology enabled the emergence of many applications in the field of architecture as well as in other areas and now there are many applications having distinctive features related to the field architecture.

In this study, main purpose is to examine recent developments in Augmented Reality technology, and to explore the possibilities of their use in the creation of a new architecture guide. To achieve this purpose, recent advances in hardware and software in the field of Augmented Reality are analysed and their reflections in the field of architecture are evaluated through examples. With reference to the general features of architecture guides, it is focused on how to improve Augmented Reality. In the light of all these studies, ARc-G Architectural Guide is formed as recommendation.

Today, architectural guidelines are presented through two different mediums, which are print and digital, and they contain data parallel to each other. It is indicated that digital guides, but not printed ones, offer
convenience of directing how to find location of selected structure and wide range of scanning options. However, it is found that they are lack of functions providing route for all structures, defining this route in a certain time or creating new routes depending users’ interests. It is observed that it is required an interactive application to overcome these inefficiencies. Furthermore, today’s architecture guides that in use presents rigid data, but should they be adequate? There are data that may be included into system and enrich it. It is thought that presentation of structures’ virtual data in 3-D will be indispensable part of the system in near future.

ARC-G Architectural Guide is a model constructed in a way generally applicable to all cities. Assessment of research was made according to working principles of application that was run for Eindhoven city. This city became subject of interest because its potentials offered us multi-faceted evaluation. The model was manually examined based on the data of the city’s transport and architecture. In the route selection, it is sought that route suggestions offered by the model can be interfered with, depending on personal and scanning options. In model route, new routes were created based on user’s personal interests such as adding and removing structures, defining user’s own route, using a route depending on time. In case of route presentation based on scanning options, scanning was formed with the parameters of construction style, architect and construction category that connects each other. Then, it was continued as the examination of the model through the city and sampling presentation of AG technology based on the route. It is showed that besides standard information of scale of the building, 3-D presentation of functional, structural and aesthetic features that cannot be found in an ordinary architecture guide can be achieved.

Model enables easiness for observing architectural structuring in the city and providing instant data based on location, with support of 3 dimensional data from architectural structures’ database. In addition, people’s architectural trends can be realised through feedback from the model or structural data visited by them. In this way, while system will reveal user’s personal architectural structure profile and widespread interests in architectural structures and styles. ARC-G Architectural Guide model should not only be considered as a re-creation based on today's technology architecture guidelines. It should also be considered that this would support architecture tourism developed recently. At this point, alternative architectural tour routes and presentation of more data at the same time in an interactive environment gain importance. With reference of ARC-G Architectural Guide that was examined in the study, development of application was tried to be enriched.