

Implementation of virtual and augmented reality experiences for the dissemination of structural diagnosis results in historical buildings

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ABSTRACT

The constant evolution of information and communication technology towards increasingly higher levels of interaction and immersion are radically transforming the platforms in which information is transmitted. In the scientific field, traditional techniques for disseminating scientific results are not enough to capture the interest of the public, especially the non-scientific community, which in many cases is the main recipient of information. Visual, interactive and user-friendly broadcast platforms are needed. In this sense, the Virtual and Augmented Reality are shown as two powerful technologies for the generation of impact in the dissemination of scientific knowledge, due to the high level of sensory immersion (visual, auditory, haptic, olfactory.) that they provide. In the present paper, Virtual and Augmented Reality experiences are implemented for the results dissemination of the structural diagnosis works carried out in two 16th Century churches located in the Peruvian Andes. The experiences involve the generation of an immersive and interactive scientific tour around the churches, where the process and results of long-term structural remote monitoring studies are shown. The referred tours provide technical information of the test, allow to visualize details of the equipment used and allow to observe the methodology adopted to carry out the test. The complementary use of both tools will allow a better understanding of the research carried out on the structural behavior of the churches, especially for the non-scientific community, which in most of the cases are the people in charge of managing the buildings or in charge to create national strategies.

Key Words: virtual reality, augmented reality, scientific tourism, long-term structural remote monitoring, heritage