



VirtualArch

Visualize to Valorise - For a better utilisation of hidden archaeological heritage in Central Europe

O.T1.3. Regional strategy for the medieval Nitra - pilot site 8



Project

Project acronym:	VirtualArch
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Results of the VirtualArch in Nitra

IA SAS conducted many 3D documentation and modelling activities during the VirtualArch project. The results of these activities led not only to the participation on the overall project deliverables, but also in creation of the own mobile phone application, allowing the user to see the objects in 3D and in virtual and augmented reality. Application and propagation materials is continuously distributed (with delay due to the COVID-19 situation) in the tourist centers and among the stakeholders in the city and region.

Documentation and models are also used in the application of the city of Nitra for the European Capital of Culture. The European Capital of Culture action is an initiative of the European Union governed by Decision No 445/2014/EU as amended by Decision (EU) 2017/15451 for the titles 2020 to 2033. Also, newly created “National centre of popularization of science”, made by the project „Support of the national system for popularization of research and development” prepared under operational program “Science and innovations”, will be established in the vicinity of the documentation centre of IA SAS, with archaeology being one of the key sciences being presented.

IA SAS has a long and outstanding connection with local stakeholders not only in city of Nitra and the district of Nitra, but in the whole country. However, the participation on the project VirtualArch and closer involvement with the local stakeholders in Nitra as the pilot heritage (the city council and the mayor’s office, seat of the municipality, museums, schools and other education representatives, tourist organizations, volunteer organizations, etc.) with the concrete participation with set goals of presenting the chosen invisible heritage strengthened these bonds and paved a way for even more intense future collaboration.





Further development

IA SAS has part of the facilities in the former barracks area in the part of Nitra called Martinský vrch. Here, one of the core sites of early medieval church was documented and 3D visualized, and it can be seen by AR application on the spot of the excavations. Together with this, the future plan is to make other important early medieval sacral objects and make a series of visualizations, visible in AR in the surrounding park. The application, called “Path through the early medieval churches of Slovakia” will include the 1:1 scaled churches from the Nitra principality, built in the 9th – beginning of 11th century with the pictures from the excavations and informational tables with the popular text about them. It will be also connected with the open air museum that is being built by IA SAS in this area.

The 3D documentation however is not used only with the aim of the popular presentation, but is highly used by the IA SAS in its main scientific field- field archaeological excavations. The ability to quickly process field documentation in the form of 3D model allows not only to show it in an appealing way, but also to work with it in the scientific manner, creating hypothesis and conclusions. As an example may be used problematic stratigraphic situations on a top of Nitra castle, which were documented by the 3D photogrammetry and the results in the 3D model allowed to much more complexly understand the layers, much better than if one would have to go through many different photos and angles combined with the plans and hand-drawn sketches. Also, aerial scanning of whole localities, either by LIDAR or drone allows to create terrain models much faster, than sometimes long and arduous manual geodetic measurement. By participating in the VirtualArch, many employees had opportunity to see this modern way and part of them was even trained to process such a data, creating the huge asset for the future. As for the city of Nitra, the locality still develops, as a modern city always does, and archaeological excavations are conducted every day. IA SAS participates and will participate on these activities, using the skill set acquired also during the VirtualArch project, and the results will be presented on a created platform.





Summary

Participation of the Institute of Archaeology of Slovak Academy of Sciences in the VirtualArch project provided valuable experience in the field of 3D documentation, scanning and also the further presentation of these data and models. Prepared activities will set even more firmly the city of Nitra in the touristic map of Slovakia, making the modern and appealing presentation and documentation regular tool used by the IA SAS.



Visit of the representatives of the National Bank of Slovakia in the 3D laboratory in Nitra, being presented the visualizations also in VR