

Archaeology at Andrews

There are two graduate students in archaeology whose research we would like to highlight (although all of our students are doing great and important work!). Stanley LeBrun's study shows how modern digital technology is revolutionizing how archaeology is done today—in his case, using GPS and GIS to accurately locate and recreate the architectural features at one of our archaeology sites, Hesban. Carina Prestes's study shows how the integration of archaeological finds with ancient written sources is providing new insights into the importance of women leading out in the early Christian church.

Randall Younker, director, Institute of Archaeology

Bringing Virtual Narration to Biblical Archaeology: A Case Study of Biblical Hesbon (Tell Hisban)

By Stanley LeBrun

THIS CASE STUDY EXPLORES the topic of 3D rendering and narrating Øystein LaBianca's Longue Duree project which seeks to explore the natural and imperial impact on the cultural landscape of Hisban, Jordan, through technological visualization.

In archaeology, data in the form of artifacts and architectural remains is being unearthed every excavation season. How the data can be presented over time, while enabling the viewer to concurrently interact, view research information, and understand expert interpretation, is a challenge. The objective of this case

study is to create a 3D environment that promotes viewer interaction, provides scholarly research information, and tells the story of how the cultural landscape has changed over time while lowering the cost of publication. It will also provide a means for further research and collaboration within the archaeological community.

The vision was to use the architectural remains at Tell Hisban in a case study in order to determine the best workflow and the tools necessary to construct a 3D environment. As we undertook this project, it was obvious that the major emphasis for this project would be as follows:

1. This project needed to promote a workflow that was intuitive as new students and faculty moved the project forward, so that there would be no wasted time in learning the tool.
2. We also needed to use tools that most of academia and the outside world were using which will give students an edge in the transition from academia to the workplace.
3. Since most higher education institutions hold a license for ESRI and/or Autodesk, this provides technical support, which greatly assists students and faculty in moving this work forward.

Therefore, the solution was obvious: ESRI, which stands for Environmental System Research Institute. It is the leading cutting-edge company when it comes to the Geographical Information System (GIS) industry. By combining ESRI with Autodesk Revit, which is the leading soft-

ware in architecture and engineering design, we were able to take the first steps in making this vision a reality.

Our method is quite simple since our focus is not to render video game-like realistic scenes.

1. Create architectural structures in Autodesk Revit and
2. import the 3D model into ArcGIS Pro in order to:
 - a. create time period layers which assist with the visual narration
 - b. embed or link research documents or other media into the 3D scene
 - c. host the 3D environment onto ESRI's Portal for ArcGIS via ArcGIS Pro. ESRI's Portal is the means by which the 3D environment is accessed online.

The next steps in this project are to:

1. Utilize architectural documentation and drafting techniques in order to have exact details of the structural remains. This technique could be used to provide visual information about the architectural remains and provide the avenue for further research to continue off the excavation site.
2. Construct the 3D architectural environment of Tall Hisban during the Roman time period, for example, in relationship to the agricultural land use of that time period.



LEFT: Model of a Roman structure
BELOW: Model of a basilica