

## University of Reading: Creating a Virtual Museum with Revizto

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Digital archiving of museums' collections are all the rage now, and along with virtual tours it makes a whole museum available for literally any Internet user in the world. But digitizing the entire building with thousands of objects in it requires time and resources that smaller local museums just can't afford. We in Revizto were excited to learn that our product could offer a solution. To be exact, Revizto has already tremendously helped researchers from the University of Reading to create a virtual prototype of the Museum of English Rural Life. We asked the Principal Investigator of this project, Dr. Ian James Ewart, to share his Revizto experience with us and tell us how they used Revizto in this project. So here's his exciting story.

### **Dr. Ian James Ewart (School of the Built Environment, University of Reading, UK):**

"I heard about Revizto when looking for possible software to use as part of a new research project here at the University of Reading. The project was called 'Creating a Virtual Museum' (funded by the EPSRC 'Communities and Culture Network+' at the University of Leeds) and was aimed at producing a 3D virtual reality model of the Museum of English Rural Life (MERL), here in Reading. But since museums and similar cultural heritage organisations are not funded to the same extent as commercial operations, and digital technologies are not generally part of their skill set, the project had at its heart the need for a user-friendly low-cost solution to creating virtual museums.



Shows the photogrammetry models and the SketchUp models merged

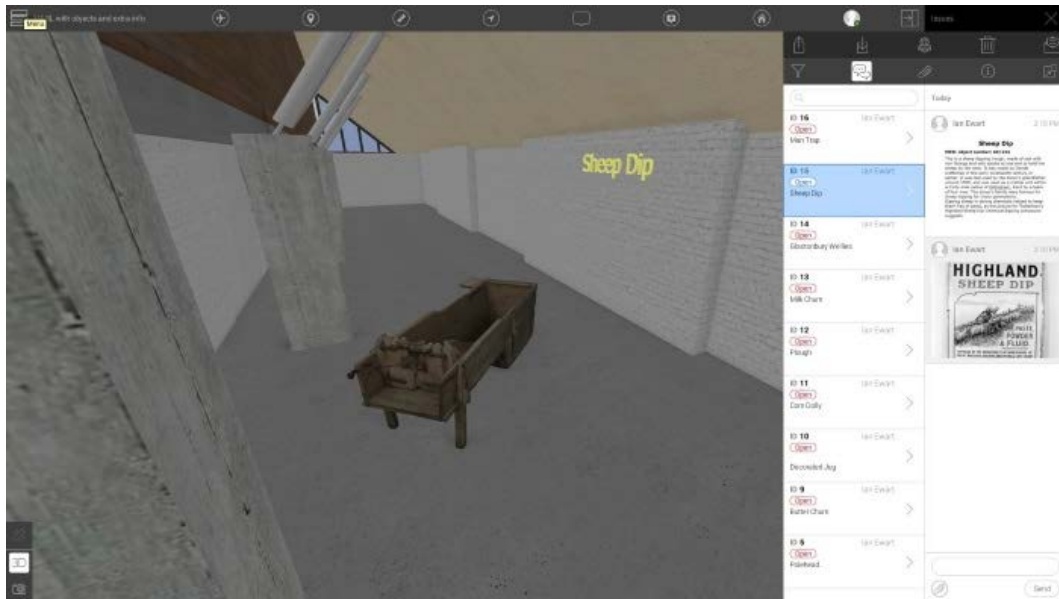
In other projects we have used proprietary gaming engines, particularly Unity, but these were too complex for this project, so after quite extensive searching and testing, I decided that I could do 90% of the same but with 5% of the technical effort using Revizto. Revizto was also ideally suited to the project since it was already designed to work with SketchUp, which we were using to draw part of the building, and the Oculus Rift, which we have as an option for visual output. We have tried to make the workflow as simple as possible, so that a museum professional could do something similar, within the constraints of time and skill that they are usually up against.



Shows a closer view of the photogrammetry model with an object and 'issue bubble'

So, the project has been carried out, partly as an experiment, using photogrammetry to create the external decorative Victorian brick façade of the MERL entrance, and some of the objects in their collection, and SketchUp to create the newer building, including an extension that was not yet built. These various models (two large photogrammetry models of the brick entrance, approx. 200k polygons each; 9 objects from the MERL collections around 50-100k polygons each, and a large SketchUp model of the new building - approx. 80m x 20m) were imported into Revizto, combined into a single model using the 'merge' tool, and realistic materials applied. Using an Xbox controller, the user can now explore the virtual museum and encounter each of the objects, either in an Oculus Rift, or on a large screen.

The other aspect we wanted to include was a way of the user finding out more information about the objects when they came across them. This is where we have used the 'Issue Tracker' in a slightly different way. By assigning an issue to each object, the user can turn on the issue tracker and click on the comment bubble in the model (or on the menu bar) and is presented with extra text and photos relating to the object. This is not ideal since it requires the user to know where to click and how to get out of the issue tracker when they are essentially members of the public, but it works and has allowed us to include extra information in the model.



Shows a close up of one of the objects having selected Issue Tracker, so that the additional information is displayed

As a university, we like to include students in this type of project, and it was set up in part as a learning exercise for some of our students in teaching them about creating 3D models. We did this in collaboration with a colleague in the University of New South Wales in Australia, who used this as a project for some of their architecture students. So the SketchUp and Revizto models were shared between the University of Reading, in the UK and UNSW in Australia, with around 10 students in total involved.

The model is now being presented to members of the public, and museum professional and is being investigated for its potential use in the future."