Plan of Action:
How Google SketchUp Can Help Your Collections Move

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Background

The Florida Ethnographic Collection (FEC) at the Florida Museum of Natural History (FLMNH) is comprised of more than 800 Seminole and Miccosukee artifacts, photographs and documents. The artifacts, some of which date back to the 1800's, demonstrate extraordinary artistry and craftsmanship and are an integral part of Florida's heritage. For years, these materials were housed in a crowded room with thousands of other ethnographic artifacts from around the world, often indiscriminately or inconsistently organized. In 2011, as plans for a dramatic expansion of the FEC drew near, FLMNH designated more than $26,000 in funds towards the purchase of a mobile storage system with archival quality cabinets and drawers. Thus, the FEC would be united as a "collection" for the first time, moving from the Ethnographic Storage Room to the Special Collections Room.

Artifacts from the Florida Ethnographic Collection.

The Problem

A great deal of thought went into the layout of the new mobile storage system, as the goal was to maximize spatial efficiency while minimizing cost. It was important to figure out how much physical space the FEC *already* occupied, as well as compensate for any anticipated expansion. Each cabinet in the proposed mobile storage system was equipped with ten shelves, adjustable vertically along 1½-inch intervals. In order to provide proper installation instructions to the team at Patterson-Pope, Inc., the placement of both the objects and the shelves would need to be pre-determined. This meant arranging and organizing a collection of hundreds of objects, many of which were on loan, within a space that existed only in computer-generated illustrations!

The FLMNH Special Collections Room in 2011.

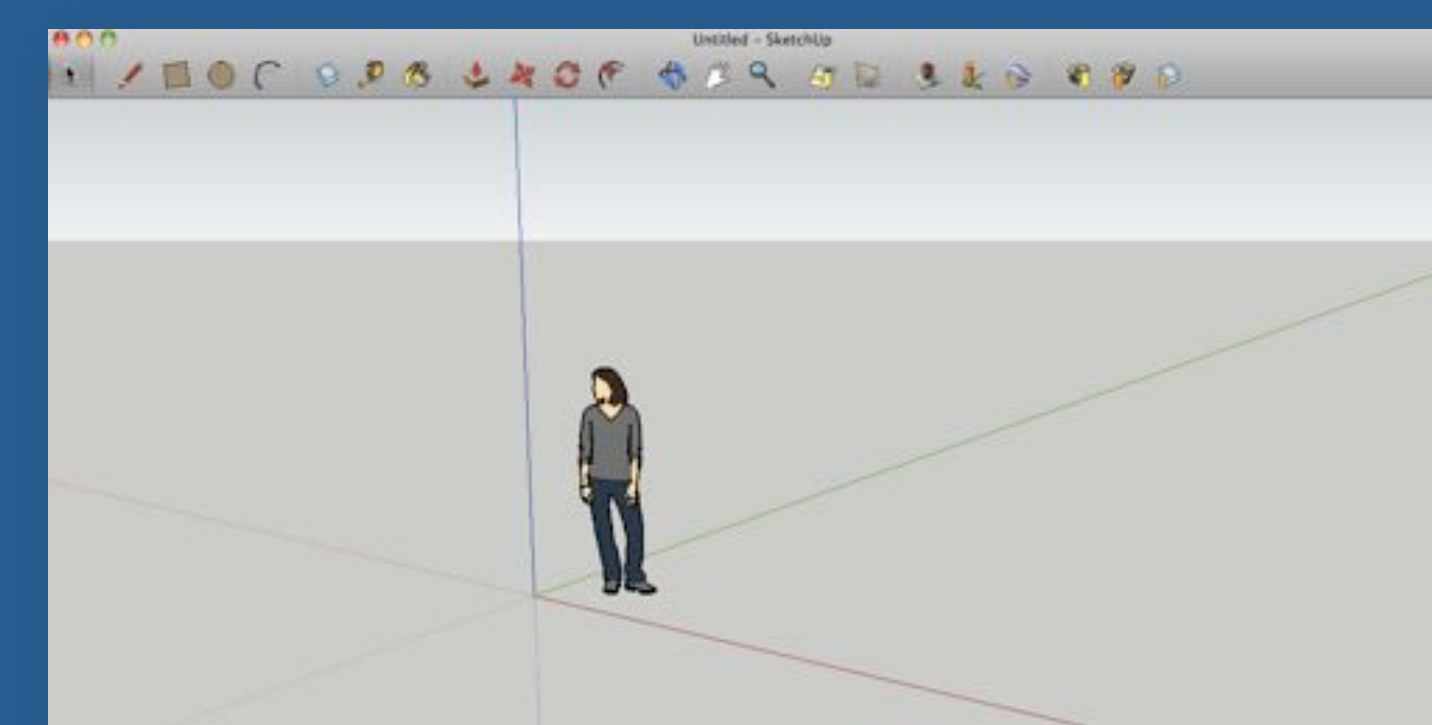The FLMNH Special Collections Room in 2012.

The Solution

In order to maximize spatial efficiency and establish a "plan of action" for moving the FEC, a three-dimensional virtual model of the proposed cabinets was created using Google SketchUp.

What is Google SketchUp?

SketchUp is a free three-dimensional modeling program offered by Google. Originally designed for architects and engineers, SketchUp's user-friendly interface makes it accessible to anyone with a set of measurements along three planes.

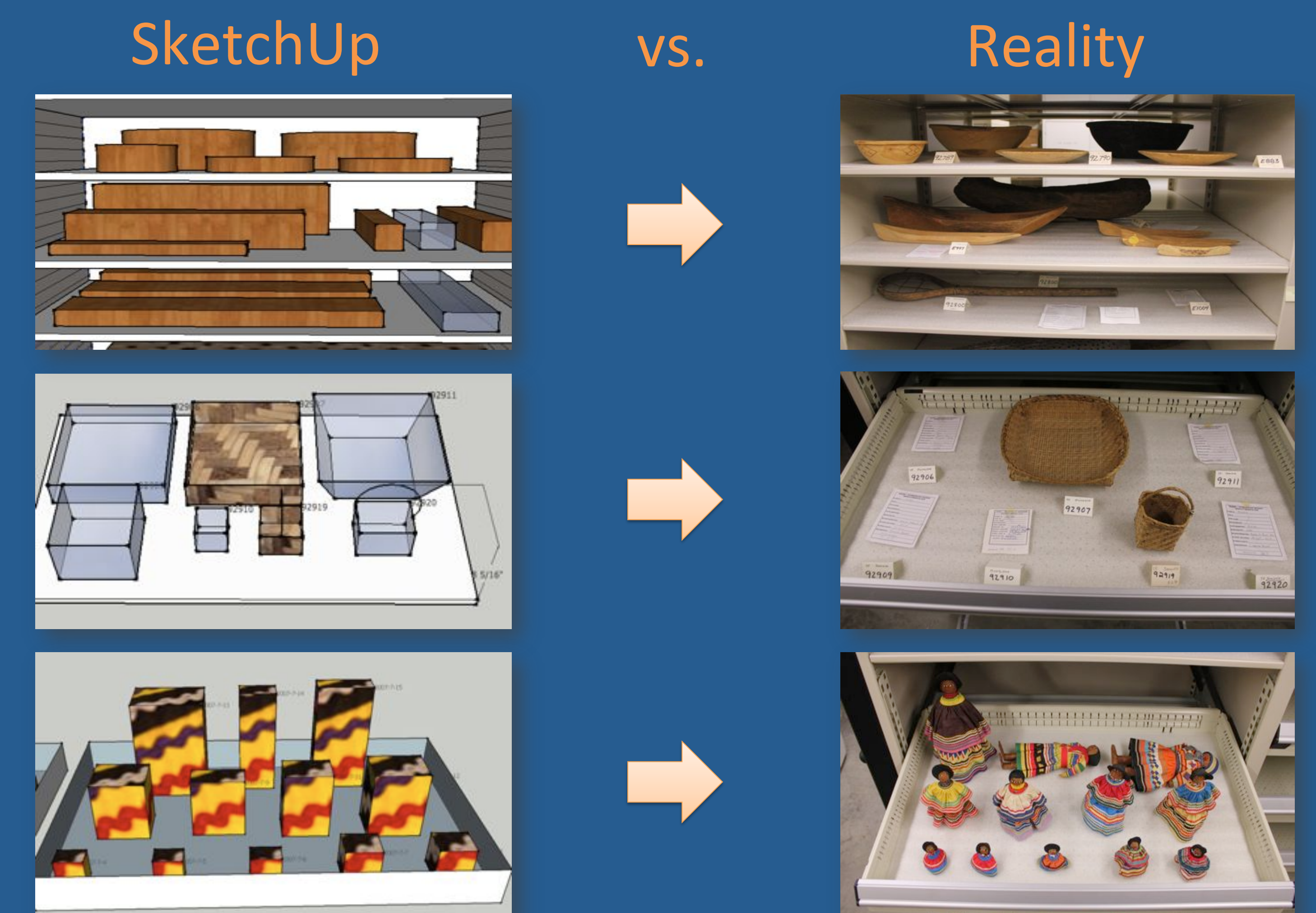**Download Google SketchUp:**
http://sketchup.google.com

Methodology

1. In order to construct the cabinetry accurately in a virtual space, precise measurements of length, width and height from the supplier's proposal were entered into the program's "component" builder, creating scale replicas of the cabinets. The 1½" shelf intervals were drawn along the cabinet's vertical plane, offering all possible options for shelf arrangement.
2. The shelves were drawn and laid out on the "floor" of the virtual space, allowing for the placement of objects according to type and catalog number.
3. The individual *artifacts* were then drawn based on measurements of "space occupied" that are not necessarily indicative of their *actual* size. They were simply measured as they were stored, as if inside an invisible box, with a maximum length, width and height (measured in inches). Thus, when drawn into SketchUp, each artifact appeared as a six-sided cube or rectangle, regardless of its shape in reality. Artifacts were color-coded by type (dolls, basketry, beadwork, etc.), labeled by catalog number and placed onto the empty shelves on the "floor." For artifacts on loan, measurements were taken from catalog cards to *estimate* the actual space occupied. These artifacts were coated with a translucent paint to distinguish them from artifacts that are actually present.
4. Once the surface area of each shelf was sufficiently full of artifacts, the entire shelf (artifacts and all) was made into one "component." This allowed for the shelf and its contents to be copied and pasted into any of the virtual cabinet's pre-constructed shelf intervals.
5. Since every object in the model was exactly to scale, the shelves were simply adjusted vertically until they maximized the space to be occupied in reality. In some cases, fewer than the standard ten shelves were needed for each cabinet, thereby lessening the overall number of shelves required.

Virtual collections and storage created with Google SketchUp.

Basketry

SketchUp vs. Reality

Results

The FEC's SketchUp model was completed in December 2011 as part of a practicum for the University of Florida's Museum Studies graduate program. The resultant "mover's guide" was applied immediately, as installation of the mobile storage unit began in January 2012. Shelves were installed according to spatial recommendations derived from the SketchUp model. Artifacts were moved downstairs one-by-one to their new locations and oriented as they had been in the model. Space was left for artifacts on loan, their pull-slips acting as placeholders. Only minor complications arose during the transition from SketchUp to reality, and those that did were easily amended. Overall, the project proved to be highly effective. It made the move of objects relatively easy, with each already having a predetermined destination. Also, the new arrangement of artifacts by type proved to be visually stunning, making it even more satisfying to the eye than the virtual model. Most importantly, the spatial efficiency of the arrangement is apparent, with minimal waste of vertical space. The remaining empty shelves now await the arrival of future donations.

How Can This Help Your Museum?

Google SketchUp is a powerful illustrative tool and should be considered for a variety of projects within the museum setting. While this project focused on the program's utility in the world of collections management, there are a variety of other applications that could benefit from its use. Whether moving a collection, designing an exhibit or applying for a grant, no amount of words is as powerful as a visual representation of an idea. With a little patience and an open mind, this free virtual modeling program can help your museum build a brighter future in reality.

Acknowledgements