

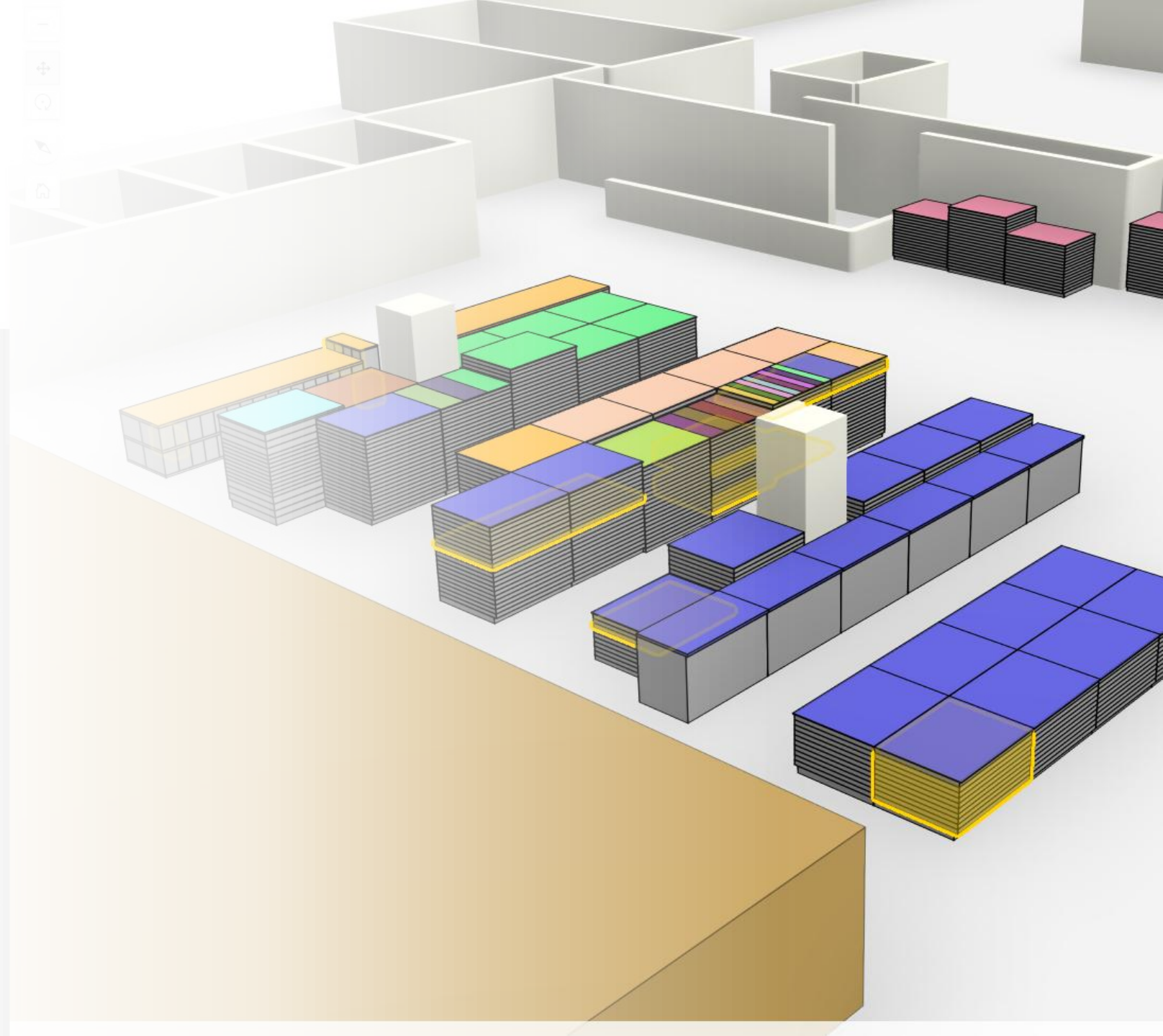


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A 3D GIS Web Application for Map Library Exploration

Jose Anza Garcia

janzagar@umd.edu



Introduction: Our map library

- 200,000+ individual items! (paper maps, atlases, relief models)
- Location: west (back) wing of 4th floor, alongside GovDocs
- Regional Federal Depository Library for Maryland and Delaware
 - Government documents collection includes 27,000+ serial maps
 - Open to everyone!
- Administered by the GIS and Data Services team



Ongoing issues

- Map library is relatively underutilized
- Lack of public/community awareness?
 - A lot of historically important materials that could be useful for researchers
- No central, comprehensive catalog of all map library materials!
 - Select inventories, some outdated
 - How to search for materials?



Our proposed solution

- 3D web GIS application of the map collection and surrounding environment
- Workflow based on ASU's 3D Explorer web application, but tailored specifically to our library
 - 1. Obtain measurements
 - 2. Build model
 - 3. Develop web application
- Leverage 3D GIS capacities of ArcGIS Pro + ArcGIS Online
- Custom search functionality based on geographic range of individual drawers



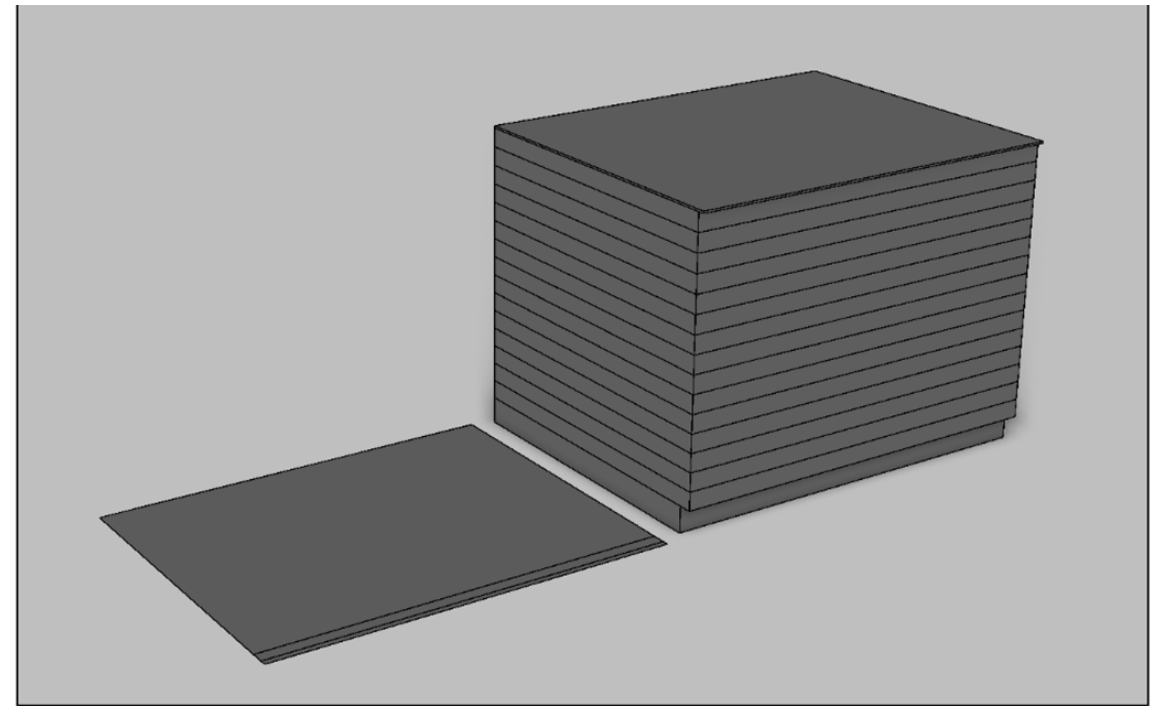
Phase 1: Obtaining measurements (+ study area)

- Located in 4th floor's west wing (approx. 1/3 of floorspace)
- Two different types of map storage furniture:
 - 1) Drawer-based map cabinets
 - Modular (stacked in groups of 5) – 41 total
 - Top-open – 6 total
 - 2) Atlas bookcases – 3 total
- Measurements taken with laser measuring tool – cabinet/bookcase dimensions, distances, etc.

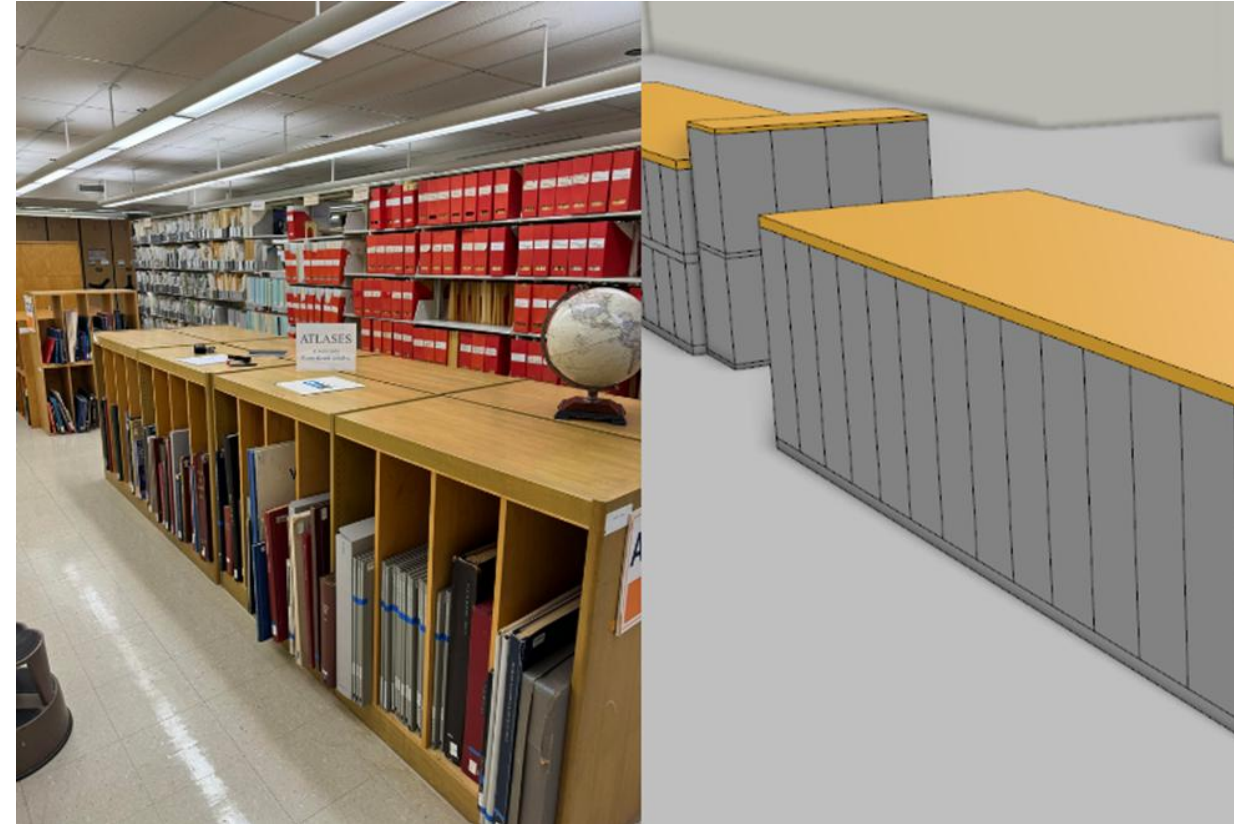


Phase 2: Building the 3D model in ArcGIS

- Model built from scratch—no preexisting datasets to work with!
- 3D local scene – good for small-scale applications
- To make 3D, set base height and top height to attributes in attribute table
 - Extrusion
- Then, copy and paste + rotate in editing tools
- Convert to multipatch feature layers for upload to ArcGIS Online



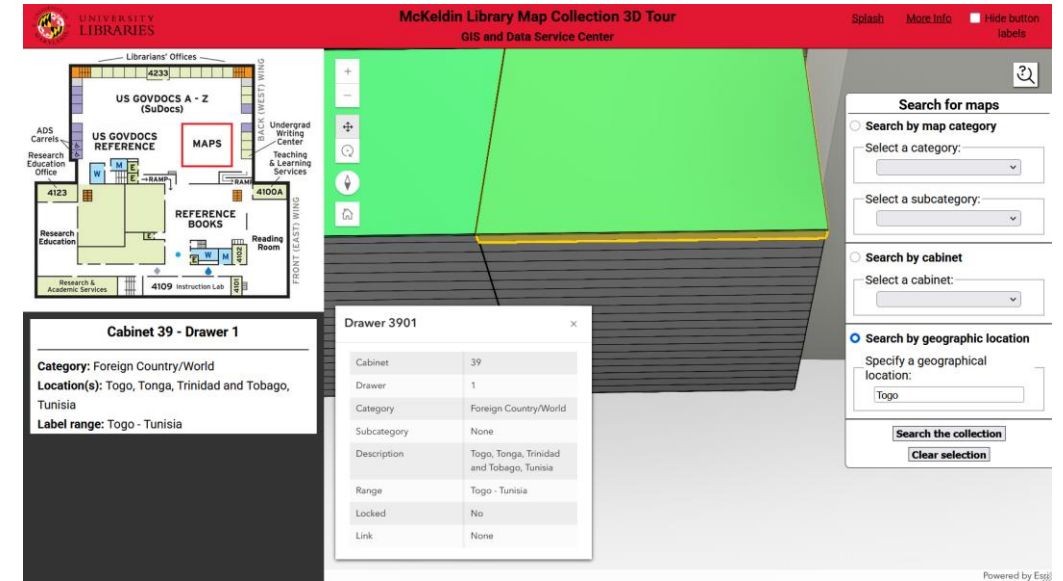
More images



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Phase 3: Building the web application

- ArcGIS Online – SaaS hosting solution with seamless integration to ArcGIS Pro
- Web app built with HTML/CSS/JS
- Mapping library: ArcGIS Maps SDK for JavaScript – also perfect integration with ArcGIS Online
- Query function – SQL based querying of attribute table
- Highlight
- Zoom





Demo time!

<https://mapcollection3d.umd.edu>

Conclusion

- Successful in building and developing an app that allows for patrons to explore materials
- Promotional value for map library
- Search system overcame lack of catalog
- Replicable and adaptable workflow
 - Other map libraries can use!
- Next steps? Your input!

