Patterns in the Distribution of Artifacts from the 2006 First Baptist Church Archaeological Dig

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Background:
Providence has a rich history, and its grounds have the potential to provide vital information about land use and cultural relations throughout time. The First Baptist Church (FBC), which was established in 1638, has played a large role in settler’s lives throughout colonial and post-colonial times. Furthermore, the land it was built upon was likely used and occupied by the Narragansett tribe during the winters and for trade relations prior to colonial settlement (Boissevain, 1975) (See Figure 1). An archaeological dig at the FBC was carried out from September to November 2006 by several students enrolled in the class Archaeology of College Hill at Brown University to investigate the different uses of this communal space over time, and to provide more detailed information about what role the church has played in the college hill community.

Objective:
This study has utilized the classes’ findings, specifically the raw artifact data, to answer the following questions:

• Are there any patterns in artifact distribution throughout the site?
• Can any inferences be made regarding land use through time using this data?
• Furthermore, this research served to:
  • Create intuitive visuals for the First Baptist Church and the head archaeologists for this dig.
  • Establish a baseline analysis procedure using GIS for comparison with future digs at the FBC.

Methods:
Several programs utilized for this research:
• ArcMap
• ArcScene
• Google SketchUp
• GoogleEarth

The following operations were carried out using these programs:
• Center points for each trench were plotted using GPS
• Polygon shapefiles for each trench were created in ArcMap
• Raw artifact data was reclassified into seven artifact classes: Bone, Brick, Ceramic, Glass, Metal, Organic, Shell
• This data was joined to each trench shapefile in ArcMap
• A Digital Elevation Model (DEM) was created using elevation points from RIGIS data
• A polygon shapefile of the property boundary was created
• Using SketchUp an image of the FBC was generated
• This data was imported into ArcScene with base heights for each layer obtained from the DEM
• The SketchUp model was imported as a 3-D symbol for a point representing the center point of the FBC
• Using the extrusion calculator eight different images were generated that represented artifact totals for each artifact class at each trench and the total number of artifacts found at each trench.

Study Area:

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Results:
• The majority of artifacts were concentrated in the southwest corner of the site
• The majority of artifacts were concentrated in soil layers 6 and 7
• Few artifacts were found in the northwest corner of the site
• Brick, ceramic, and shell artifacts were the most common artifacts
• Trench B2 has the greatest number of artifacts
• Trench B4 has the least number of artifacts
• Brick, ceramic, glass and metal artifacts are concentrated in the northeast corner and the southwest corner of the site

Discussion:
The procedures and the data used for this research have several limitations and weaknesses that affected the rigor of analysis of the data. Due to the large size of the data set (even after reclassification and compression) and glitches in ArcScene, only simple procedures such as extrusions could be carried out without crashing the program. ArcScene was also unable to save changes made to certain documents which was problematic for creating final images that could be edited and modified. Furthermore, data collected in isolated trenches as opposed to a full site excavation which limited the statistical analysis to a simple distribution comparison.

Lastly, the size of the artifacts was not directly taken into account in the analysis due to incomplete size data.

Conclusions:
• The artifact remains largely represent communal feasting behavior over time
• The FBC grounds has been, and continues to be, a high traffic area
• A construction event likely occurred in the southwest corner of the site
• Potential retaining wall reconstruction in the northeast corner of the site
• Shellfish were a staple of the Narragansett Diet, with most shellfish being collected from the Providence River for this particular area.
• Trench B2 could potentially be a Native American food processing site and/or trade site
• Further excavation is warranted, especially in the Northeast and Southwest corners of the site to gain more information about land use in these areas

References: