Establishing an Alumni Geodatabase Using ArcGIS

(WPAOG “Brick and Paver”)

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Bricks and Pavers Program (B&PP) Background

- Historically, the B&PP has been tracked using an Excel spreadsheet.
- Several years ago, that spreadsheet was filtered incorrectly. The majority of data was rendered useless.
- The program was moved many times since its inception in 1992.
- With no standard operating procedures (SOP), the data in the system is now either not available or not easily reported.
- When asked about where specific bricks or pavers are located, it is often difficult to determine without physically walking out to the patios and checking.
B&PP Expansion Efforts

- Originally, only standard 4”x8” red bricks were offered.
- Today, 8”x8” and 12”x12” gray granite pavers were introduced. Bricks and pavers are considered donations that support the Herbert Hall Building.
- Costs range from $500-$2,500 and are tax deductible donations. A certificate and tax receipt are sent to the donor for their records.
- Installations occur in the spring for graduation and reunions and in the fall based on the football season and class reunions.
B&PP Expansion Effort: “A Clarion Call for GIS”

- Since its inception, the layout of the bricks and pavers has been redone several times to accommodate program growth.
- The installation area has expanded to surround the building to accommodate the more than 600 engraved pavers and 4,500 engraved bricks.
- Classes are represented from 1879 to the present. More growth space is being identified
- The Class of 2020 will occupy the final open space.
The GIS Project Using ArcGIS

- The West Point Association of Graduates (WPAOG) Brick and Paver Program (B&PP) staff initiates a project with the United States Military Academy’s (USMA) Department of Geography and Environmental Engineering to develop a GIS tracking system for the 10,000+ bricks and pavers surrounding the building.
- This project will allow graduates, friends, and family to request brick or paver information from anywhere in the world.
- They will be able to enter key criteria and identify the brick matching that.
- Once they select their own brick or paver, they will be able to see an actual photograph of the item.
Establishing the Criteria

- Each individual brick or paver as a point file
- Make a large polygon area the size of the Herbert Hall area
- Raster image of each area, make a mosaic and put it into the work area
- Put raster mosaics in place, and consider making a polygon as well.
- Digitize the points for each brick
- Add information to the attribute table as required
- Develop the database, and then link it to the html Graphical User Interface for any queries.
- Each individual brick or paver as a point file
- Add to attribute table as required
- Raster image of each area, make a mosaic and put it into the work area
Video

Prototype Testing: Developing the Data and Checking Locations
Locating and Identifying The Bricks and Pavers

Photos were taken of each brick and paver in a grid process.
The Excel database was updated and converted from Excel to a .csv file and then imported into ArcGIS.
Edits were made to the attribute files and to the location of each brick.
Creating the Feature Class from the Criteria
Video
Prototype: Updating the Geodatabase According to the Criteria
Video
Prototype Testing: Adding to Image to the Database
• Matching the brick on the patio to the information in the database
• Make sure the Editing mode has been started
• Open Attribute Table and select a record (it is now highlighted)
• Check it against the brick photos and move it into the correct position in relation to the bricks labeled for each graduating class
• Continue the process and check for any inconsistencies in the database
Right Said Fred?

- GIS data management
- One brick is placed in the incorrect location for a particular class
- Purchased in 2015, but for the Class of 1975.
- Report the information and log the inconsistency

Location for the Class of 2015
Twice As Nice?

- Two entries are created for one person after converting the Excel file.
- Were 2 bricks actually purchased, or is it a data entry error?
- There are 2 bricks with similar inscriptions!
Final Thoughts

- Data management expansion transitions into a GIS project (From Excel to ArcGIS)
- If the project entails has some sort of spatial component, consider GIS as a solution
- Project engineer it up front – establish the criteria early to avoid changes later
- Issues with moving from a legacy system to a digital system (start up costs)
- Data conversion and storing data in a geodatabase – know the formats required

Project Team
- Amy Hagan: Program Manager, WPAOG Brick and Paver Program
- Jamie Rainelli: Project Manager, WPOAG Brick and Paver Program
- Alexandra Elfers: Intern, WPOAG Brick and Paver Program
- Amy Dillon: Intern, WPAOG Brick and Paver Program

https://www.westpointaog.org/brickandpaver

It’s not where you start, it’s where you finish
(and it started with this .pdf map right here)