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EXPLORING DIGITAL EQUIPMENT AND APPLICATIONS TO SCAN HISTORIC CEMETERIES

DIGITAL TOOLS FOR CEMETERY PRESERVATION

- Terrestrial Laser
Scanning
- Matterport
- Smart Phone
- ESRI ArcGIS



TERRESTRIAL LASER SCANNING







MATTERPORT



[MATTERPORT TOUR](#)

NATIONAL PARK MAGNOLIA PLANTATION ENSLAVED DWELLING



polycam

SMART PHONE



MAGNOLIA CEMETERY, CHARLESTON₉



GEOSPATIAL SOLUTIONS (ARC-GIS)

Circular Congregational Church – Monument Assessment

Evaluated by: _____ Date: _____

First Name: _____ Last Name: _____

Family Name: _____

Plot Number: _____ Artisan: _____

Footstone:

- Yes
- No

Fencing/Enclosure:

- Yes
- No

Type (Choose One):

- Tablet/Standing headstone, ground mounted
- Tablet/Standing headstone, with base
- Tablet/Standing headstone with border motif, ground mounted
- Tablet/Standing headstone with border motif, with base
- Tablet/headstone, wall mounted (plaques, reinstalled fragments, etc.)
- Standing monument (obelisks, columns, figures, etc.)
- Flat stone, square
- Flat stone, shaped profile
- Box tomb/vault
- Footstone
- Fencing/enclosure
- Mausoleum

Materials (Choose All That Apply):

- Brick
- Marble
- Granite
- Slate
- Sandstone
- Brownstone
- limestone
- Artificial stone: Cast stone/concrete/ composite stone
- Soapstone
- Stucco coating
- Blue stone
- Grave goods
- Other: _____

Construction methods (Choose One):

- Dry fit
- Mortar (note mix, presence of Portland cement, historic lime mortar if possible)
- Metal pins, cramps, dowels, or fasteners, original (*note type of metal: wrought, cast iron, mild steel, bronze, lead, etc.)
- Metal pins, cramps, dowels, or fasteners, part of repair campaign (*note type of metal: wrought, cast iron, mild steel, bronze, lead, etc.)

Style (Choose One):

- Lettering, hand (include transcriptions)
- Lettering, machine/modern tools
- Carvings, illustrations, relief work, motifs
- Sculpted/ three dimensional work
- Denomination/ belief system specific
- Stylistic elements indicative of a time period
- Folk/vernacular features

Size:

- Height: _____
- Width: _____
- Depth: _____

Prioritization (Choose One):

- Urgent: within a year
- Moderate: within 5 years
- Mild: long term monitor

Date of Next Review: _____

Site Description: _____

Previous repairs (Choose All That Apply):

- Replacement pieces, sympathetic (such as a replacement carved stone)
- Replacement pieces, unsympathetic (cement or materials out of keeping with original fabric.)
- Sandblasting
- Coatings
- Chemical scarring or damage from earlier cleaning
- Epoxies, consolidants, glues to re-adhere damaged pieces

Vegetation

Cracking

Spalling

Delamination

Efflorescence

Flaking

Suggested Repair (Choose All That Apply):

Sod/vegetation removal, landscaping

Cleaning

Repairing

Resetting

Mortar repair/repointing

Replacements

New foundations

Stabilizing/mothballing/protective enclosure

Fragment storage

Reconstruction/replacement

Current Conditions (Choose All That Apply):

- General rating: excellent, good, fair, poor, risk of loss
- Settling/ out of plumb/ off level
- Loose stones/out of place stones/ fragments
- Weathering/ erosion of carving/lettering
- Weathering/erosion of structural elements/stone shapes
- Rising damp
- Soiling

Repair Protocol: _____

Marker Number

Unique ID

Marker Descriptor

A short descriptive layman's name for the marker.
For example: John Doe Cross or Jane Doe Tablet

Name

Name of persons interred, if applicable

Date of Birth

Date of birth of the deceased listed on the marker.
Date format - choose the most applicable
mm/dd/yyyy
mm/xx/yyyy
xx/xx/yyyy
N/A

Surface Texture

 Rough hewn Smooth Polished Other

Primary Material(s)

Check all that apply

 Bronze Granite Limestone Marble Slate Wood Brick

Overall Condition Rating

Poor - requiring immediate stabilization or treatment
Fair - expected to require treatment in the next year
Good - stable, but could use light treatment
Excellent - like new/recently treated

Primary Photo*

Photo of grave marker

Drop image here or select image

Additional Photos

1 Drop image here or select image

Comments

Please note any details, elements, conditions, or additional notations that are relevant to this marker.

SCAN ME



4:20 LTE

Surface Texture

Rough hewn

Smooth

Polished

Other

Primary Material(s)

Check all that apply

Bronze

Granite

Limestone

Marble

Slate

Wood

Brick

survey123.arcgis.com

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Comments

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AA survey123.arcgis.com

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LTE

Circular_Church_Database Map

survey123_ff9ad915ca354a279c0a...



AA

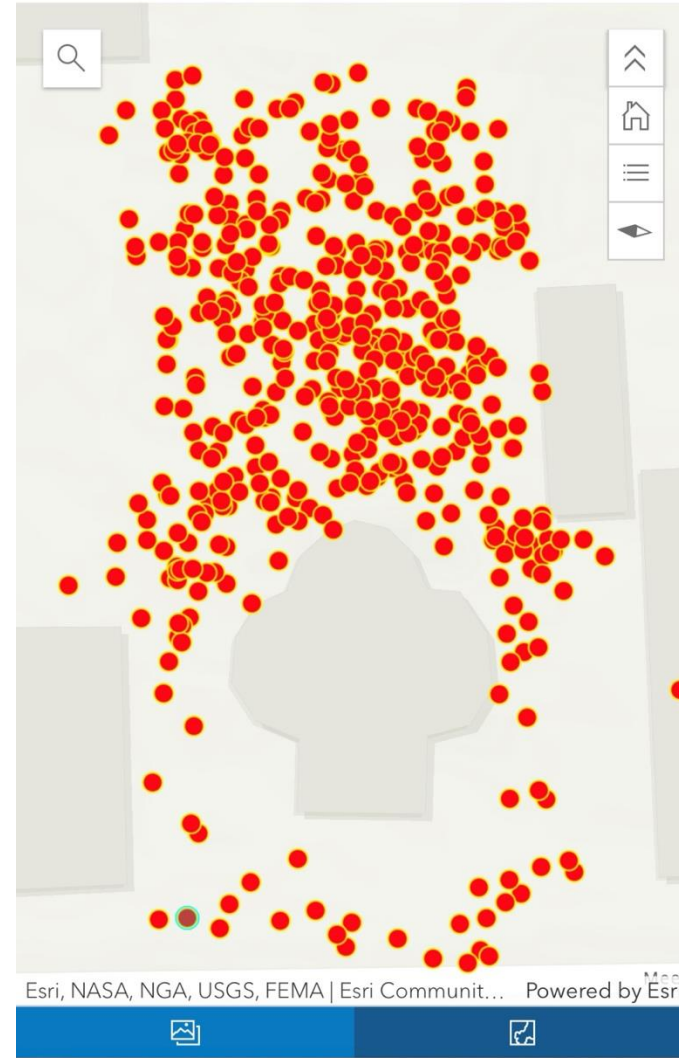
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LTE

Circular_Church_Database Map



Esri, NASA, NGA, USGS, FEMA | Esri Communit... Powered by Esri



AA

tulane.maps.arcgis.com



ArcGIS Online

COST AND PARTNERSHIPS

	TLS	Matterport	iPhone	ArcGIS
HARDWARE	\$28k-100k	\$6-9k	\$700	N/A
SOFTWARE	Leica Register 360/ AutoDesk Recap	Cloud Platform	Polycam	ArcGIS Online
SOFTWARE COST	\$10k/year	\$660/year	\$7.99/month (free initial trial 7 days)	\$20k/year
PARTNERS	Universities	Real Estate Agents	Personal Device	Universities