How Do You Get There?
Digital Mapping in a Garden Setting

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Arboretum Explorer
A custom-built, responsive web app
Donna Tremonte, Web Developer/Applications Programmer
About the Arboretum

- Established in 1872 and planned and designed in collaboration with Frederick Law Olmsted
- Arnold Arboretum is a National Historic Landmark and one of the best preserved of Olmsted’s landscapes
- Founded as a public-private partnership between the City of Boston and Harvard University, the Arnold Arboretum is a unique blend of respected research institution and beloved public park in Boston’s Emerald Necklace.
- Occupying 281 acres, the Arboretum’s living collection of trees, shrubs, and woody vines is recognized as one of the most comprehensive and best documented of its kind in the world.
- The living collection is supported by comprehensive curatorial documentation, herbaria containing more than 1.3 million specimens, extensive library and archival holdings, and a 43,000-square-foot state-of-the-art research center.
The Technology

Arboretum Explorer is a responsive web application built using HTML5, JavaScript, **AngularJS 1.12.16**, and **Bootstrap 3.2.0**. The mapping components are written using the **ArcGIS Server JavaScript API**, and the application uses Web Mercator projection.

Our GIS data are available through **ArcGIS Server REST services**.

Moved from XML-based map to Flickr API for the tours and plant images, Flickr Geotagged Photosets

http://www.flickr.com/photos/28082034@N05/sets/

ESRI Map Services

http://server.arcgisonline.com/ArcGIS/rest/services

Arnold Arboretum Map Services

http://map.arboretum.harvard.edu/ArcGIS/rest/services/CollectionResearcher
Usage

- Over 15,000 plants in our BG-BASE database
- Virtual tours of featured plants
- A way to explore our collections in the landscape
- Search our collections and export data files
- A tool to catalog and produce maps of the locations of plants in the landscape
- Used by garden staff, visitors, citizen scientists, and researchers alike for applications both inside and outside of the office
- Over 3000 visitors a month to the page
Web and Mobile - Responsive

http://arboretum.harvard.edu/explorer
Demo (live) ...or Plan B

Donna Tremonte, Web Developer/Applications Programmer
Longwood Gardens
Interactive Map
Jennifer Fazekas, New Media Strategist
Goals

• Assist with wayfinding

• Build the “in-Garden” use case for our website

• Prioritize and organize experiences

• Provide an interpretive tool, evolve from wayfinding to storytelling

• Strengthen content relationships throughout website

• Leverage the Drupal CMS
Challenges

- Scale/size of Gardens
- Indoor/Outdoor
- Seasons – capturing seasonality, capturing what’s in bloom and natural events that don’t run on a set schedule
- Time of Day – bright sunlight and low light conditions
- Connectivity
Approach

• 2 months design and development
• Responsive web technology
• Javascript map elements, integrates with a JSON feed provided by the Drupal back-end
• Google Maps Javascript API determines the map functionality
• MapTiler - generates map tiles that scale to the dynamic google map
• Progressive loading - laterally (more map as you move across), and deeply (higher res as you zoom in)
Usage of a Percentage of Visitation

Nightscape – 33%
August 3 - October 29, 2016

A Longwood Christmas – 10%
November 24, 2016 - January 8, 2017

Orchid Extravaganza – 10%
January 21 - March 31, 2017

Spring Blooms - 11%
April 1 - May 26, 2017

Summer of Spectacle - 13%
May 27 to present
Survey Results

- 81% - helped them find their way through exhibit
- 78% - enhanced their visit
- 39% - helped find something they would have missed
- Overall impression of map, from a scale of 1-10 was 7.58
- 12% - had trouble accessing map
- 10% - had trouble loading/connecting outside
- 7% - had trouble loading/connecting inside
Onboarding

- Pre-Visit Email, 10%
- Website, 22%
- Sign at Longwood, 39%
- Longwood Staff Member, 30%
• Founded 1820
• Continuous operation since 1850
• 1.3 million+ visitors annually
The Challenge

• 50+ NPS site models in holiday show
• Difficult to take it all in
• Some places not well known
The Solution

• Created interactive online map
• Shows geographic diversity well
• Background info
• Photos
Map of all National Parks and Historic Sites models in the show

Freedom Tower National Historic Landmark

STATE
Florida

YEAR PLACED UNDER NPS
1979

Description
In 1925, this Mediterranean revival, 17-story building was originally used as the headquarters for Miami Daily News and Metropolis (Miami News). Several decades later, Florida's history would take a turning point when Cuba's new leader Fidel Castro would drastically change the course of history.
Model at U.S. Botanic Garden

Wawona Tree [fallen]

STATE
California

PARK / SITE NAME
Yosemite National Park

YEAR PLACED UNDER NPS
1890

Description
Yosemite’s famous Wawona Tree tunnel was created in 1881 as a tourist attraction. The second standing sequoia to be tunneled (the first, a dead tree, still stands in the Tuolumne Grove in
United States Botanic Garden

• www.USBG.gov/SeasonsGreenings
Season's Greenings 2016

"National Parks and Historic Places" in our 2016 holiday exhibit

VIEW MAP LEGEND

Old Faithful Inn and Old Faithf...
Old Faithful Inn and Old Faithful Geyser

Model list for USBG holiday show 2016 for map.xlsx

**Description**  The Old Faithful geyser earned its name from its daily predictable eruptions. Eruptions occur in 60 to 110 minute intervals, shooting up to 184 feet and lasting between 90 seconds to five minutes. Located in Yellowstone National Park, the cone geyser was named in 1870 by the Washburn-Langford-Doane Expedition. It is one of many geysers, part of the vast hydrothermal system in Yellowstone National Park.

Named for the geyser near which its construction...
Benefits of using Google Maps

● Free
● Quick to learn
● Upload excel file as base
● Just need GPS
● Can pull from online images
● Can upload own photos
● Easy to edit database
● Mobile responsive
Outcomes

• 18,000+ views

• Used by a staffer stationed in the exhibit to answer visitor questions
Discussion

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Care for the Rare Mobile App

- georeferenced tour stops
- multi-site scope
- looking for interested gardens to pilot the mobile app

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Conversation

Connectivity / wifi needs
App vs mobile
Beacons
What's next?