ASTORIA PARK AUGMENTED REALITY TREE ECOLOGY

Knowledge is the first step towards change, and there's no better way to learn than by experiencing. With an augmented reality project in the park, curious minds will be attracted out of the home and into community meeting spaces while learning about why trees truly matter to our ecosystem.

WHAT:

- An educational Augmented Reality App to interact with select trees in Astoria Park that contain corresponding QR codes within NYC Parks icons. The app will illustrate a die cut of each tree that includes educational information about its age, features, species and importance related to environmental sustainability.

- In dedicated areas, visitors can have the opportunity to sign a virtual message board and be directed towards actionable steps on sponsoring new tree growth and improving environmental conditions.

- Features: Vintage Photos, Tree Growth Animations

WHO:

- Astoria Park Alliance, The Glimpse Group, StudioTeka

WHEN:

- Phase 1: Spring 2018
- Phase 2: Fall 2018

WHY:

- The featured data helps influence factors relevant to an urban ecology system such as real estate values, air quality and flooding estimates.

- Information is retained at a 90% greater rate when presented visually and through physical interaction via Augmented Reality.
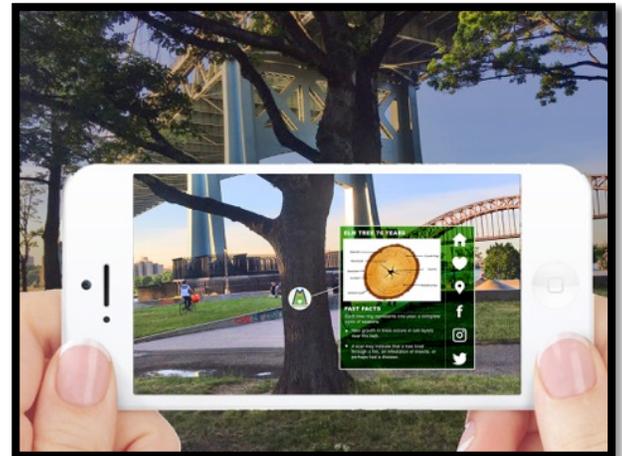
HOW:

- Production by The Glimpse Group and Astoria Park field observation volunteers
- Financed through grants, donations, sponsorships, crowdsourcing and Kickstarter campaigns

ADDITIONAL NOTES:

- Information tallied from the 2015 NYC Parks tree survey can be incorporated for a richer experience.

- APA has experts in forestry and GIS designers who can perform professional field survey measurement to properly gather data and launch an associated web-based GIS-type interactive map feature.

- NYRR Mile Markers are approved to be added to the Park, which creates a model for QR code placement goals.

- NYC Parks intends to add wayfinding guides to Astoria Park which augmented reality could enhance.

- Astoria Park has been designated as one of New York City's five Anchor Parks, and is set to receive $30m of improvements over the next few years. The potential exists for additional immersive media projects in the future.

LEARN MORE: http://www.astoriaparkalliance.org/projects

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TREE CHARACTERISTICS

- Each tree ring represents one-year, a complete cycle of seasons.
- New growth in trees occurs in cell layers near the bark.
- A scar may indicate that a tree lived through a fire, an infestation of insects, or perhaps had a disease.
- A collection of wide tree rings signifies a rainy season when plenty of growth took place.
- Thin tree rings indicate a period of drought when the tree's growth was slowed by receiving less water
- Light colored tree rings have large cells that indicate a large period of growth.
- Dark colored tree rings have smaller cells and reflect a time when the tree's growth slowed down.
- Neighboring trees can compete with each other for the vital elements of sunlight and water.

SOCIAL BENEFIT

- Trees provide oxygen, improve air quality, control climate levels, conserve water, preserve soil, and support wildlife.
- City trees deflect sunlight reducing the heat island effect caused by pavement & commercial buildings
- Trees combat air pollution that leads to asthma, coughing, headaches, respiratory and heart disease, and cancer
- During photosynthesis, trees take in carbon dioxide and produce the oxygen we breathe.
- Trees filter air by removing dust and absorbing other pollutants like carbon monoxide, sulfur dioxide and nitrogen dioxide. After trees intercept unhealthy particles, rain washes them to the ground.
- Trees absorb and store rainwater which reduce runoff and sediment deposit after storms and prevent the transport of chemicals into streams and prevents flooding.
- Trees lower the air temperature and reduce the heat intensity of the greenhouse effect by maintaining low levels of carbon dioxide.
- Far reaching roots hold soil in place and fight erosion.
- Fallen leaves make compost that enriches soil. NYC Parks host Christmas Tree recycling events citywide
- 99% of real estate appraisers concurred that landscaping enhances the sales appeal of real estate.

BRAINSTORM
- Who is the intended audience?
- How does it benefit them?
- What's the associated social impact goals and call-to-action?
- How to get initial engagement started so visitors to the park will see how it helps them?
- What metrics will be used to demonstrate its value to stakeholders?
- What's the life-cycle of the project, either in terms of running it, or how long park visitors might use it?

Concept 1: NYC Trees

With the CO2 levels at an all-time high, it is crucial to continue to plant trees and plant in order to keep our oxygen clean and plentiful. Using an AR App, a heat map could be generated (similar to the existing, but seldom viewed Nolli map) to show where there are and are not trees in the neighborhood of Astoria. An additional heat map could be provided for flowers, shrubbery, and herbs (Venice example).   When a viewer is in a "hot" area, a prompt could come up to allow the viewer to order a tree or other plant.

Next Steps: This app could be developed and sponsored by the city or by local plant distributers, such as Burpee Seed. Additionally this app could be released initially to schools with an education component added (project overview) See also Urban Ominbus, Reforesting Cities (article by Vanessa) and IIRSA (project/problem) - Initiative for the Integration of the Regional Infrastructure of South America example)

Concept 2: Using AR/Mobil VR to Show Future NYC

Using the climate change statistics and urban planning published in "2100: A Dystopian Utopia / The City After Climate Change" an app similar to the one described in Concept 1 would show what NYC could look like in the year 2100. Using Astoria Park as a launch location, the app would show
• Wind Barriers, Inflatable River Barriers, Cause & Effect of Various Global Warming Scenarios (Six Degrees Book example), Storm States, Sponge Parks (Gowanus Project example)

Next Steps: This could be funded by the state, NYC Council Members and/or influencers in DC. This could also be launched as a promotion for a climate awareness documentary.

Concept 3: Energy Analysis

Leveraging all the functionalities mentioned in previous concepts, an app can be developed to show energy consumption in Astoria. This app could include:

• How much energy is used (individual and neighborhood)
• How much energy could be saved if it were cultivated a different way (harnessing storm power, painting roofs white)
• What windmills would look like in the park/on the East River
• What a ConEd Infrastructure Expanse would look like/improve

Next Steps: If we designed this app in a way that shows the improvements ConEd is making as a company and as a neighborhood staple, there is potential they could help sponsor it.

* Note: If the mobile solution becomes an Astoria Park Alliance owned platform there would be interest and opportunity in later expanding it to include wayfinding, which could possibly become adapted within all NYC Parks.