Citizen Tree

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Abstract

In a time of ever-increasing climate crisis, the recognition of the importance of forests and tree-cover remains critical. Citizen Tree is a work-in-progress project that playfully engages the public with the importance of forests through a provocative, performative, technological-ecological artistic intervention. CT is a mobile eucalyptus tree designed to travel through the Melbourne CBD, acting as if it is another independent inhabitant of the city. The project relates to recent tree planting initiatives of the City of Melbourne, as well as the tree emailing social experiment of Melbourne's urban forest. Previous works by the artist that engage with the agency of natural systems with human perception are discussed as background to the project. Citizen Tree engages with the following ISEA themes, including creative robotics and human-machine partnerships, posthuman, transhuman, and 'more than human' paradigms, the politics of machine learning algorithms and other new optical regimes.

Keywords

Ecology, Performance Art, Urban Environment, Landscape, Autonomous Systems, Interactivity, Mechatronics, AI.
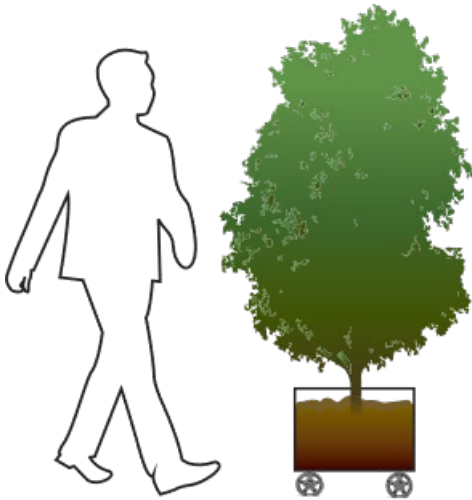

Figure 1. Dr Stephanie Andrews, *Citizen Tree concept sketch*, 2024.

Introduction

"My job is to try to reinvent the tree in such a way that it appears ichnographically in advance of its physical existence." – Jeff Adams [1]

Citizen Tree (CT) is an eco-machine hybrid seeking to impose its own presence and situatedness in the urban environment. The allegorical narrative conceit is that Citizen Tree is an entity in and of itself, harnessing human technologies such as robotics, machine vision, and artificial intelligence to give itself agency amid the densest of human habitats, bringing the timeless force of nature back into the built environment as an active agent that seeks a voice and presence of its own accord. It will wander the streets of the Melbourne CBD, demonstrating its right to be considered a citizen of the city like any other.

The work consists of a human-scale eucalyptus gum tree planted in a plexiglass box with a robotized, remote control transport system. The plexiglass box exists for two reasons, one, to distinguish it aesthetically and conceptually from a run of the mill commercially potted plant and two, to draw attention to the materiality of the soil substrate that the tree is planted in.

The tree will be a eucalyptus, the dominant species present in pre-colonial Australia, representing the deep history of the native landscape in contrast to the many passive, predominantly non-native trees that were planted in the CBD since colonization. Situated on the southeastern coast of Australia, Melbourne was colonized by Europeans starting in 1835, taking over the unceded territories of the Wurundjeri Woi Wurrung and the Bunurong Boon Wurrung indigenous peoples. Recently, the majority of the trees that lined the streets of the CBD were London Plane Trees, a divisive choice with residents. With this species the delicate hairs are well-known for causing coughing via contraction of the vocal cords and skin irritation. [2] In 2019 the City of Melbourne launched a campaign to replace many of the London Plane Trees with species that were much more adapted to climate-change. [3] Many these replantings (though not all) are species native to Australia. A similar policy of replacing London Plane Trees is now happening in Sydney. [4]

Citizen Tree can be seen as a conceptual outgrowth of this project in that CT could metaphorically be a next stage of development of presence for native vegetation to reclaim its place in the landscape of Naarm (Melbourne).

Expanded Possibilities

There are several augmentations and expansions of the piece that may be explored as well. These include more activation and affiliation building between human and non-human via allowing remote viewing of the environment from the perspective of CT via website or 360 VR. This would allow the public to, in some sense, inhabit the body of Citizen Tree and observe the reactions other people are having to its presence amid the cityscape.

Also, Citizen Tree could ideally be expanded into a durational piece, if the same tree can be maintained and cared for, people could watch it grow from a "child" into an "adult", where it eventually finds its occupation and is planted in a specific location. Along the way, there would be extensive social media and documentation that the public could access to follow its progression, ideally encouraging people to form an attachment to the tree and provoking discussions of the work and its implications.

Ambitiously, it could also be a piece that is re-created and/or re-imagined for different specific cities with their own context and issues around the tension between the built and natural environments incorporated into the instantiation of the work. Over time, with Citizen Tree appearing to spread from city to city in the country, and then the world, it could be seen as a type of reverse occupation, or invasion of the human space of the Anthropocene.

Inspirations and Relevant Works

Formative Influence

Growing up in the far suburbs of Seattle, Washington in the United States, I witnessed firsthand the effects of clear-cut logging and urban expansion to the vitality of the forest landscape that had dominated the pacific northwest environment previously. Even more starkly, after a visit to the Hoh National Rainforest, my understanding of the true complexity and magnificence of the old growth forest was forever burned in my mind. These formative experiences have created a sensitivity in me around the role of trees and forests in the world and are prime motivating factors in realizing this work.

Previous Works

As an artist there are a few key works I've previously created that are relevant to this piece. The first is ThinkTank from 2002, a mechatronic artwork that explored the concept of natural forces, in this case water, attempting to communicate or interact with us. [6] I created and engineered a bubble display that, letter by letter, spelled out the phrase "AM I MAKING MYSELF CLEAR" that consisted of a tank of water, binary control valves, a pneumatic airflow system, and a computer algorithm. The intent was to suggest to the viewer that the water itself had some conscious desire to communicate and was attempting to reach out to the human world but was not sure it was being heard or succeeding to be noticed by humans.

The second work is Ghost Forest, an interactive VR immersion I developed that intertwined the pine forests of the Pacific Northwest with the gum tree forests of Australia. [7] Using a novel method of non-naturalistic 3d spatial distortion I developed in my PhD dissertation that caused the two landscapes to interfere with each other and change the stereoscopic rendering of the immersive 3D space inside the VR experience. The simultaneous conflicts, intersections, and overlaps between the environments serve as a significant metaphor for how landscape can be interpreted within the human imagination vs the actuality of the physical space that human is currently occupying. This mirrors the phenomenon of existing in two places at the same time, reflecting a current experience of the forest in both locations. While my physical presence will be grounded in either one location or the other, my mind will be occupied with visions,

Figure 2. Dr Stephanie Andrews, *Ghost Forest*, 2017.

comparisons, memories, and glimpses of the alternate setting. The forest of the mind, representing my internal remembered landscape, intertwines with the tangible location on the planet. Conceptually, Citizen Tree explores this idea from a new direction, juxtaposing the mobile presence of the tree against the assumed inhabitants of the city and causing them to question their assumptions about what their environment should really consist of, and how the realities of real and imagined can entangle themselves in each other.

Related Project

In Melbourne trees are now the recipients of emails that find their way to the City of Melbourne's (CoM) offices through an online platform featuring an interactive visualization of the urban forest's publicly managed trees. [8] However, the CoM took it a step further by assigning each tree its own email, intending to enable residents to report maintenance issues related to specific trees. Surprisingly, such maintenance-related emails are infrequent, as people instead send a variety of much more personal and relational messages to the trees. This initiative of emailing trees offers a chance to contemplate the impact of digital technologies on ecological concerns. Those who participate aim to strengthen their connection with each tree by using the CoM platform to

exchange experiences and reflections, with the goal of improving and mending disruptions in both human and non-human well-being. For example:

"Hello tree.
I don't actually know you, but recently I've been wondering what trees say.
A friend of mine gave me your contact information, so I thought I would go straight to the source.
So here is my question: what would you tell people if you could speak?"

The urge to anthropomorphize the trees in these communications is a prominent feature. Citizen Tree intends to harness this same urge, specifically by designing the work at a human-scale to elicit familiarity. Straughan, Phillips and Atchison argue that the opportunity to email the trees increases the public's sense of relational understanding between human and other-than-human entities, revealing that digital interventions and augmentations can assist in the re-imagining of human and tree togetherness. [9]

One element that is discussed is that because the trees are only given numbers to represent them, the emailers must negotiate an approach to addressing the tree they are talking to, and usually adopt an anthropomorphic approach. There is an awkwardness to this process that comes from identifying the distinguishing features of humans vs non-humans. However, this process is seen as activating connection in an ultimately positive manner, because it asks the human to consider the individuality of the tree more fully in question and engender specific relationality as opposed to relegating the tree as a generic part of a landscape. They further suggest that by interacting with the specific elements of a landscape in a more refined manner, the human develops a more personal bond that can ultimately be beneficial in the formation of city ecologies and attitudes toward urban forests.

CT could be incorporated into the tree email project, either officially or unofficially, and given its own number to be a form of address that people negotiate. Citizen Tree raises questions about the difference sociological response as CT is a very active and intrusive agent rather than passive, comforting part of a landscaped environment that people retreat to for relaxation. The moment of the encounter in this case will be flipped, where the tree is coming into the built environment and asserting its presence, which may well elicit different reactions.

Development

Phases

The development of the work will take place in two general phases, allowing for multiple iterations in each.

Phase 1 is the creation of a remote-controlled vehicle, based on the technology of a mobility scooter, electric wheelchair, or similar with remote operation based on RC car navigation at a distance. This prototype is designed to test and understand physical, logistical, social, and navigational factors that will inform the development of new iterations with ever-increasing autonomy, technological sophistication, and conceptual relevance. Notably, this initial version will remain under manual control of a human operator.

Phase 2, a far more ambitious but also more compelling version, is the development of an autonomous eco-robot that navigates as independently as possible via the use of artificial intelligence and machine vision. Given the current state of these technologies, it may be some time before this is fully achievable, however, preliminary advancements can be made toward this ultimate goal.

In both phases, safety is of course a primary concern, as the potential to lose control of the vehicle may result in damage or injury. It's paramount that in all versions there is a two-level redundancy in being able to stop the vehicle at a moment's notice such as manual override of controls and secondary remote kill switch. It may be more viable/legal to choose a very public location that is not actually on a footpath, such as the spacious Federation Square near Flinders Street Station. Issues of accessibility in the built environment may also be highlighted with the creation of these vehicles, as they will be like challenges those using wheelchairs may experience when navigating the city.

Summary

CT is a performative eco-art intervention and public performance piece, a provocative, locomotive green space that seeks to intervene in the normal human understandings of passive natural scenery. By engaging with the public in actively transversing and transgressing the normal spaces of pedestrians, Citizen Tree will challenge the human-centric default interpretation of the cityscape.
"… this could be expressed in our contemporary milieu as a critical 'planting' of ideas, exploiting the many various meanings of the verb to plant, which would seem apposite at this time" – Jeff Adams[10]

Acknowledgements

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Author Biography

Dr Stephanie Andrews is an artist, lecturer, and creative technologist with more than 30 years' experience in digital art, 3D graphics, interactive media, virtual reality, and site-specific installations. Originally hailing from the United States, she began her career as a Technical Director at Pixar. She is currently the Program Manager for the Master of Animation, Games, and Interactivity (MAGI) at RMIT in Melbourne, Australia.