

POPULATING VIRTUAL WORLDS

Architecture, photography, sonic art and creative writing collide at “In the Forest with the Trees we Made”.

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Abstract. This paper provides an original empirical study examining the engagement of artists, curators and virtual tools. The case focusses on a collaborative project called “In the Forest with the Trees we Made”. Since the publishing of the project, many compelling findings have been made in reference to both CAAD design and contemporary curatorial and creative practices. They have been made possible, by allowing multi-participants, institutions and disciplines to project their specific creative acts into a single sharable portal. The paper describes the activities of the participants. It then offers a discussion of how these interactions are seated in the new digital realm. The skills of spatialisation, movement through space, generation of geometry and orientation are made accessible through this new digital tool. To conclude, a reflection on the changes in space perception and how ‘space’ becomes the ‘matter’ being exhibited is offered.

Keywords. Social Virtual Environments; Mozilla Hubs; Collaboration; Interdisciplinary.

1. Motivations for study

The motivation for generating this paper is to provide an original empirical record of a particular case and to contribute to the fledgling field of Social Virtual Environments (SVE’s). The case explores a group of creators who have employed SVE’s as an exhibition platform. The significance of writing up this case is that while virtual exhibitions are fairly well documented, the SVE as a phenomenon is relatively recent and novel development.

2. Methodology

The methodology employed in this paper tends toward naturalistic observation and co-creation in the write-up. The authors, who were also creators, try to string together, how the events, instruments and technologies brought together helped found new knowledge. The project has employed the collation of meeting notes, conversation recordings and has included an extensive period of screen recording, some of which have been converted into images for this paper.

3. Introduction

In late 2019 the CAADRIA Thailand local committee has accepted the authors proposal for an on-site exhibition. The goal was to exploring new media arts in the context of CAAD as a follow on to the exhibit at the previous conference held in 2019 in Wellington, New Zealand. The focus was intended to present a body of creative work based on Augmented Reality (AR) and to interrogate notions of digitally activated biophilia across a range of disciplines: Art, Photography, Poetry, Music and Architecture. However, the local committee announced sometime later that the conference would be postponed due to the pandemic, and CAADRIA20 would be held virtually.

The original plan had proposed to generate an internal forest planted in pots on the campus grounds. The project team had intended to create pathways and places to pause amongst the foliage and then set up a series of interventions using QR codes to activate visual, audio and tactile interactions with smart devices. The work was to span spatialised sound installations, augmented poetry readings and on-the-fly processing of photographs. The result looked in principle to leverage fascination with digital devices and technology against the backdrop of negotiating this relationship with a simulated natural environment. However, due to the unprecedented global pandemic, the whole plan needed a considerable to adjust to the virtual delivery of CAADRIA20.

A simple webpage or publication did not meet the project team's expectations. Presenting 2D images as a flat entity was discarded as an option, given the original proposal to exhibit within a physical space and design the exhibit in such a way that moves through and around the forest would not be an approximate shift or provide any conceptual linking between the team's intention and the proposed display. An alternative proposal suggested exploring a scheme using an RTVE. However, managing networking for multiple inhabitants was not something that appealed to the team or adequately matched their professions. A chance decision initiated the activity to explore the SVE known as Mozilla Hubs. Hubs seemed to answer the desires and limitations identified in this exploratory process. Prior research has established that Hubs is suited for use by conference delegates (Duc An Lee, 2020, pp).

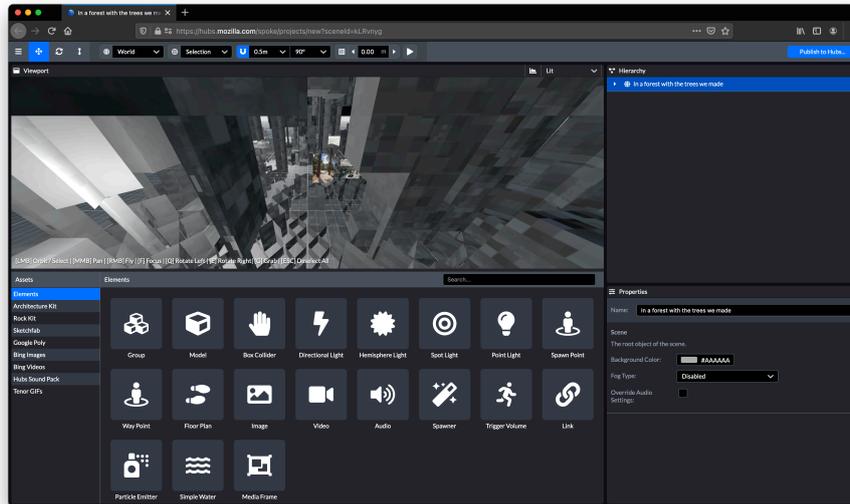


Figure 1. In the Forest with the Trees We Made in Mozilla Spoke for Hubs.

The platform boasts relative stability, and operability across many platforms and a range of devices - including HMD. Lee's study found that Hubs facilitated 'natural' communication (ibid) between delegates and that moving from one conversation to another was facilitated by 'walking' from one group of colleagues to another. It was decided that this aspect of Hubs is crucial to the presentation of a body of creative work to an audience. Another feature that stands out is spatialised sound. It was noted that being able to inhabit a specific acoustic 'situation' would benefit sound-based works, and provide opportunity to explore the tool more generally. Finally, access to a Hub is pointed out as an especially low hurdle. 'Hubs' being an entirely web-based platform, means that access to the environment is achieved by clicking a single web link. These characteristics supported the project team to consider that an SVE hosted exhibition would support a broad engagement and participation of conference delegates in the work.

4. Creating a virtual forest in a SVE

Lingering feelings of wanting to simulate a forest for the project persisted and an environment was drafted. A philosophical position of interrogating 'digital biophilia' led the project team to explore, not an accurate representation of a forest, but rather, attempt to co-generate an artistic interpretation of what a forest might entail, if not only in the digital world. Inhabitation, enclosure, texture and scale were considered in the creation of the base model. A desire to generate a reasonably tight canopy and a vertical structure, hinting at trees trunks was decided upon. Finally, texture-map and lighting schema was developed to complete the scene.

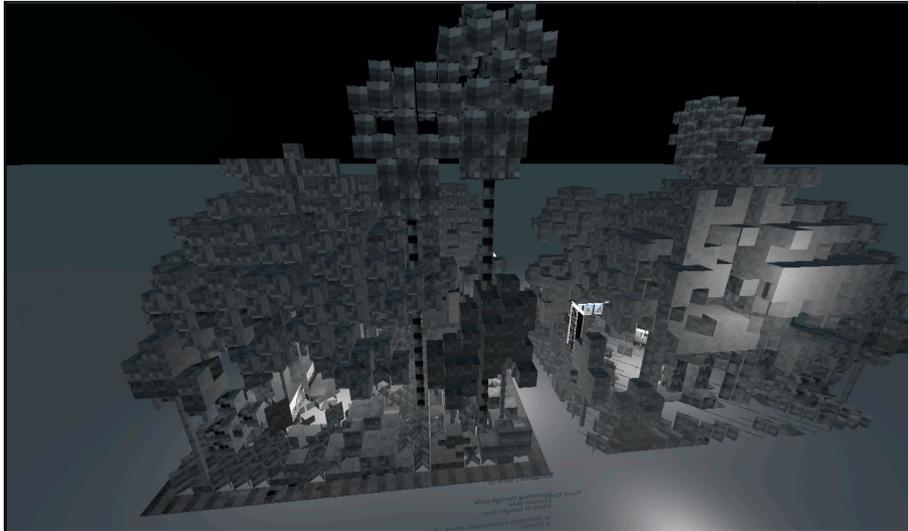


Figure 2. A virtual forest.

The modelling of the virtual environment was undertaken using the online tool TinkerCad. This tool was chosen to facilitate sharing of models with the team, who were predominantly non-architects; Photography, Poetry and Music and had no prior 3D modelling experience. The notion that design options could be viewed and discussed in the online portal Gallery of Things without downloading or needing to learn software was a key consideration. In a considerable departure to typical architectural modelling, no plans were generated. The first creative act was to download a series of components, make quick scalar adjustments and force the components together in what is termed in the game design field as a mash-up. The chosen elements were 'Tree and flower!!', 'Spooky Tree', 'Cycle Tree' and a creatively named, 'boss palm tree SKILLZ'. Beyond this, the items in the base model were all custom created for the environment. A conglomeration of simple cubes was arranged to simulate a grass-like texture, and a very pixelated 'S' shape was used to hint at a hanging vines. A series of intersecting panels were installed in the environment, a kind of crisscrossed effect was achieved, and the floor space was broken up in an ad-hoc manner. This happened to produce 'virtual clearing' in the forest, a small place of rest in an otherwise, increasingly geometrically complex space. These developments marked a fascinating departure from architectural design in a gallery setting as the co-creators articulated a desire to avoid generating walls, or doorways that may resemble their typical dissemination venue.

In this project, walls were exchanged for tall tree trunks, and a ceiling was replaced with a porous tree canopy that filtered a night sky. Hubs support a range of lighting tools; skybox, spotlight, point light and directional light. The lack of accuracy and comprehensive controls of these tools is offset by simple ease of use. In most cases, the only parameters are hue, direction and distance. A range of 'scenes' was explored daylight, sunset and night, however, a night setting was selected for fairly pragmatic reasons, which were mostly centred on providing

an environment where the artists works would be as accessible as possible in the dense forest environment. For these reasons, the general setting is subdued, with moments of brightness.

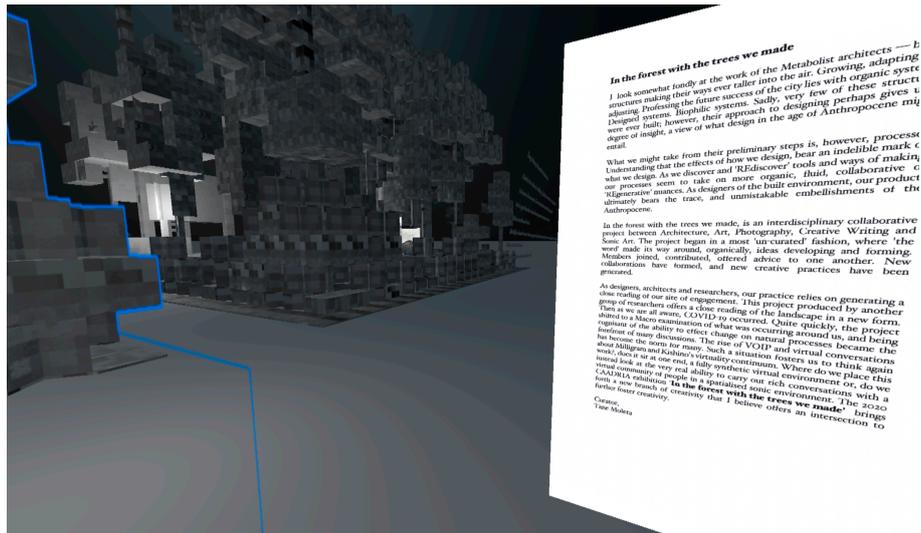


Figure 3. Virtual 'Forest gallery' and 'Gallery text'.

Following the creation of an environment, a process to inhabit works within the 'forest' was undertaken. The original plan was to iterate and reconsider how to better design and accommodate the artist's work within the environment, however, an interesting series of discoveries were made, that were primarily centred around the use of an SVE. The first of which was multiple artists inhabiting the SVE simultaneously and discussing the placement of work from varying different perspectives. One artist would be viewing the scene from above, while one from a lower angle and then one off to the side. This collaborative period of activity saw the time that was allocated for re-design and remodelling of the environment, being spent instead on collaboration, discussion and conversation in the SVE and directly testing work placement before locating the works in their final position. In this period of exercises, artists took multiple passes through a given space, considered how their works would be considered in sequence and how different pathways to exploring the work could be achieved by their audience.

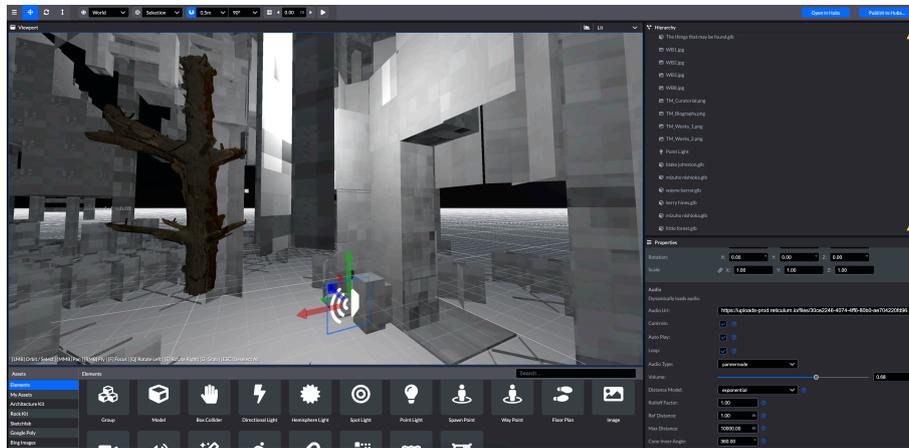


Figure 4. Sonic Artwork by Blake Johnston and sound controls.

The inclusion of a sonic artist in the project team brought a series of new and rich considerations. This work displayed below in (Fig 3) is a work that employed photogrammetry and included an audio file. Unlike sound in a physical environment, it was noted that the sound could be as large, or as small as was needed to produce a compelling virtual experience. There was a degree of frivolity and playfulness to the placement of the work, and also the permeating audio track which would eventually be set to a volume that could be heard from within the entire project. Upon nearing the single-coloured tree stump generated in photogrammetry, the audience is overwhelmed with a rich series of acoustic tones. The considered difference of this means of engagement with an audience is that the audience is able to quickly traverse away from the point of sound, either horizontally or vertically. The positioning of the work does, however generate a rich dialogue on modes of representation, simulation and generation. The model is highly edited digitally, yet in a second reading, is, without doubt, a capture of the natural environment, albeit experienceable only in the virtual.

A suite of poems was prepared for the exhibit. The decision-making process of this work was again collaborative and co-generated using the SVE. The author was able to inhabit the virtual environment, select locations and make adjustments to the positioning of the work within the environment, taking care, that the text was legible, and that a degree of blending with the environment was achieved.

The author of these works was especially driven to experiment and arrive at an outcome that would exploit the abilities of the CVE. The author was aware of their digital engagement in the opening lines of 'Kaingaroa Forest (2)' offers something to consider in the terms, "journeying through code, pine-not pine, a loop in straight lines". In contrast to an artist with a career based in printed material, there was an interest to explore and to generate written work in a manner that was immersive and inhabitable. The work prepares a serious nod to the looped audio pieces explored in the sonic artwork. The work speaks to industrialisation, to landscape and to the commodification of fragile landscapes and ecologies. The final outcome was

a series of written works that could be experienced by glimpsing at the works through the trunks of the tropical forest or peering underneath the forest canopy. What does the SVE bring to this body of work, and how is the reading of these works altered by squeezing ones way through the virtual, and peering between the simulated forest walls?



Figure 5. Photographic works by Wayne Barrar enmeshed in the virtual environment.

5. Findings

This project activated an intense period of rich participation and co-generative creation. The tools employed borrow from an interdisciplinary toolkit that touches equally on architecture, virtual reality, simulation, curation and exhibition design. The creative practitioners involved in this project have stated that they wish to undertake a project in this manner again and that they have. Working in visual arts, creative writing or music, the artists often spend considerable periods focused on singularly creating their work. This project and the processes it entailed using SVE's represented a substantial departure from their historical practices. The following section outlines some of the findings from undertaking this process and engaging in a series of conversations on the outcome of the activity.



Figure 6. Photographic works by Mizuho Nishioka enmeshed in the virtual environment.

All practitioners report that they would not typically exhibit with such a diverse group. Despite the desire to initially undertake the project, there were some concerns, these were quickly resolved in the proposal to generate an exhibit in an entirely virtual format. One of the larger issues raised was an attempt to achieve artistic integrity for their individual creative practices. There was some concern that one type of work may have an overbearing presence in the overall exhibit. These are however, considerations that were carried over from a career of exhibiting in physical sites. The outcome of working in the SVE was that the overlap or meshing of works was considered a positive attribute of exhibiting in this manner. The unlimited canvas that the SVE provides gives the exhibiting artist an impression of having enough physical to carve a place to position their unique creative activity, and in this constructive place, they also demonstrated a desire to draw in closer, and make the exhibit more compact, more intimate and more layered.

Borrowing the movement controls from game design of WASD and mouse point have proved to be relatively easy to gain mobility within the virtual environment. The ability to move in new ways in the SVE was reported as facilitating a further reading, or experience of the works by the creative practitioners. The ability to navigate freely in the vertical plane, and depart from conventional means of inhabiting space.

A renewed relationship to scale was also put forward. Engaging in viewing the work was altered through being permitted to be too close to the work - an affordance not typically allowed in a conventional gallery setting. Partially due to the porous nature of the exhibition site, 'glimpses' of work were able to be seen across the entire exhibition site. This was reportedly successful in drawing

visitors across the site, for them to only capture a glimpse of something again on the other side of the site. In this manner, the SVE does go some way to producing an alternative means to the negotiation of space and relationship to scale.



Figure 7. Text-based works by Kerry Hines peeking through the forest.

There was a notion that the spatialisation of sound was altered in the SVE. The observation was that in the relatively silent areas that the work was experienced (office or home), the subtle shifts in volume in the SVE were more pronounced than if experienced in physical format. This is a striking finding given that most exhibition experiences are held in closely monitored gallery environments. The SVE does, however offer a unique characteristic in that the only material in the SVE is material that the authors wish to be there. There is a considerable difference in inheriting an exhibition site than there is with creating a site to exhibit in from an entirely blank canvas.

The participants noted that portability and sharing with others were also more possible in this format. The work could be shared with anyone, in any place at any time, as long as minimum equipment requirements were met. Sharing of the experience was perhaps overly simplistic. A case of two youths meeting in the space and discussing matters were reported. The SVE, whilst being designed for an exhibition purpose in this case still maintains a heritage as a communicative tool to the core. The SVE was reported as a site that facilitated conversation, prompted unexpected engagements and altered the notions of an exhibition.

The real-time engagement was also noted as an especially valuable characteristic. The feeling of 'being there' and contributing to a live activity was reported as generating a sense of place beyond other online experiences.

6. Conclusion

This paper explores architectural representation and the design of virtual environments against the challenges of curating of artworks in virtual space. It provides an original empirical study on the engagement of artists, curators and virtual environments in the context of CAAD. The project 'In the forest with the trees we made' set about generating a rich and compelling artefact to aid in the understanding of the natural environment and our impacts upon our planet. Inhabitation of this response was made possible by the use of an SVE, which was originally purposed for many different uses. As a tool to aid social interaction and support communication, the SVE excels to such a level that the limitations of the tools seem to be erased. The true benefit and contribution to knowledge this case study makes is in producing a record of engagement and offering a rich description of the research site. This paper postulates that the SVE offers new possibilities when bringing new teams together to work in unfamiliar methods. This case is a single example of how immersive technologies are increasingly being employed in ways not originally intended. This case study documents the projection the SVE can make upon our professional and creative careers.

7. Artefact

The below link will give access to the project In the Forest with the Trees We Made for the duration of 2021. Future attempts to preserve the link beyond this date will be attempted, but cannot be guaranteed. Access point to In the Forest with the Trees We Made: <https://hub.link/zL4LT3c>

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