A-MAZE Artists Update 2022: On the development of the *Boundless – Worlds in Flux* virtual world

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Building on previous development, the A-Maze artists continue to develop ‘Boundless – Worlds in Flux – a Virtual Reality platform with a hub leading to different Artists’ spaces. During 2021, the team has reached out to museums, site-specific communities, user groups and expanded the team to include new design developers. This paper will chart this development, new insights, challenges and next steps. Insights include the response to global crises and transitional change; conversations with cultural theorists, other Artists and Artists’ collectives, curators and audiences; new perspectives on the Museum experience and decolonisation of collections, site-specific artworks and the embedding of cultural life within the community; aesthetic considerations; technical problem-solving and team-working.

Digital collectibles. Immersive realities. Artist collectives. Ecology. Virtual reality.

1. INTRODUCTION

A-Maze Artists’ Collective is woman-led and includes practitioners of all ages & diverse cultural backgrounds with a range of artistic and technical skills. This collaboration grew out of a particular historical moment, the Covid-19 pandemic. The crisis showed us how interconnected we all are and how, if we can just change one thing in our lives, it has an impact on everything else. Gunn initiated this group in March 2020.

Our areas of enquiry include: people’s experience of displacement, migration, realisation of virtual worlds through emerging digital tools and reaching out to audience-participants. We collaborate using online regular weekly meetings to design and build our virtual artists’ world: ‘Boundless – Worlds in Flux’. Here audience-participant-users-visitors are able to share the artists’ passion for the planet and its inhabitants (A-Maze artists collective 2021).

This virtual world enables visitors to navigate their way through interconnected artists’ worlds where visitors access a range of experiences. Hotspots for interactivity can be accessed in any order, providing visitors with an open-ended experience, one which can be revisited to bring new insights. The experience is similar to visitors dropping into a museum or public gallery, allowing them to focus on different collections or exhibitions depending on what appeals and how much time they can spend there.

In addition to the Artists’ spaces, visitors access the participants’ space called ‘Your Space’ where they can join the creative conversation and leave their own comments, video clips, photos, music/sound clips, poetry etc. This is a generative space growing in size and complexity over time (Gunn 2021). Users can create their own assemblage, becoming user-creators.
2. BACKGROUND

‘Boundless – Worlds in Flux’ is built on research into development of virtual world platforms, enabling poetic envisaging and innovative responses to real world curatorial issues such as concerns around the use of VR and audience engagement.

2.1 Prior research

2.1.1 Research on Second Life virtual avatar worlds (2007–2011)

This immersive avatar-populated environment was built on cultural traditions of the miniature, the doll’s house (Stewart, S. 1993) and a craft culture, to encourage learning, reflection and writing. Insights included observations of ‘parallel play’ and development of interiority of an internal voice and reflection (Hudson and Kendal 2011).

2.1.2 Virtual world workshop for ‘PinghubVR’ (2018–2019)

The workshop offered the artists the opportunity to work with a range of online design tools including TiltBrush, digital audio. Artists shared a common online space and forum between artists in London and Malaysia. Kendal, Mulla and Thomas-Freitas, 2019, investigated how artists could create innovative immersive and virtual art and build upon their tangible skills, during this workshop with its digital pipeline and tools. The workshop facilitated traditional and new media artists to create immersive 360-degree 3D worlds. Observations of the artist and their working practices were seen as performative. In this context, picture the artists in their headsets moving balletically as they design their art space. In essence, as performers demonstrating their pervading sense of interiority. Thus, adding to the traditions of art as performance and drawing as performance. Research indicates that Art as performance allows: 1) the freeing of art from confined interior spaces, 2) art as performance that is subjected to the influences of the unexpected and unscripted (Foa, Grisewood, Hosea and McCall 2020). Here this observation depicts a third aspect 3. Here, the Artist as performer, is invisible to themselves, immersed within, as it were, a womb of creative imagination. Within this playground, Elwes, 2015, describes the artist’s desire to be recognised, found and integrated but also in the same moment, acting on a compulsion to be an isolate, to hide, assuming disguise as if in a game of hide and seek. The immersive VR playground affords this desire to show and a compulsion to hide.

2.1.3 Exploring how artists use immersive technologies to promote inclusivity (2020)

Insights included activity by ‘inclusive’ artists, “osmotic seepage between virtual and physical realities” and the need to address interoperability, standards and platforms across emerging technologies, (Gunn, Kendal, & Mulla 2020) These reviews encouraged Gunn to develop an artists’ collective – A-Maze Artists.

2.1.4 The evolving collaboration (2021)

AMazed!, was the next stage of the initial pilot for the artists’ collective. ‘The A-Maze artists investigate Immersive Technology to create Imagination and Artifice, 2021’ explored transitional spaces and transportation tunnels were designed to integrate the different Artists spaces within one Unity gaming platform.

2.1.5 Integration and development (2022)

In 2021, the ‘Boundless – Worlds in Flux’ new designer-developers joined Grant to action the Unity integration stage: Barney Kass – a designer of systems as a compositional tool to interweave narrative, interaction and information into installations, sound design and music (Kass 2022) and Alan Hudson – virtual world specialist (Hudson, 2022).

A-Maze artists continue to deepen conversations with other artists and artist collectives, museums, galleries and specialists in Liverpool, Paris, Athens, Taiwan, Poole and USA. The integrated virtual world enables playful experimental sandboxes and ‘juice up’ the gameplay.

2.2 Perspectives: The museum curator

When considering the traditional museum curatorial gaze, it is worth analysing a frequent dilemma faced by these institutions. In their curatorship of collections, responsible for conservation and preservation of historical objects, they often find themselves unable to include contemporary creative voices because of the physical challenges they present. Artists by their nature are frequently disruptors, dynamic, unpredictable and inventive in their planning, they do not necessarily share the priority of archival standards of conservation and may come from very different cultural traditions and have different cultural and aesthetic values. Decolonisation of collections is not just a matter of objects and ownership, it is also about decolonisation of a mindset wired in values of Empire, hierarchy, and belief of being under siege.

Thus, the rise of a virtual, immersive artist practice which obviates the physical endangerment of precious objects should lead to a more expansive, visionary and inclusive curatorship of collections. It should – once cultural institutions get their heads around the technical barriers and their fear of the unknown, by up-skilling existing staff and collaborating with artists who can use these media. This will enable the sector to become more resilient and inclusive going forward, in particular, it may inspire greater generosity between museums locally, nationally and globally in terms of how they
share their collections. Blended media projects will also enable an expanded view of what curation can mean by providing both an online and a tangible experience. Crucially for artists, for local groups and the wider community, they may find greater opportunities to collaborate and co-create with institutions. In short, the multiple perspectives gained from working in this way will make the museum/public gallery sector truly fit for purpose, (Gunn 2022).

Trickett in 2022 proposed to Gunn and Kendal that: “if and whether Virtual Reality can be defined as an immersive, interactive, computer-generated world, where headsets are not a necessity?”. It was mutually acknowledged that curators can be hesitant about the use of headsets by exhibition visitors due to extra staff required for setting them up, monitoring and assisting the public, health and safety issues around hygiene and bottlenecks of queuing visitors to use a limited number of headsets. From the outset the A-Maze artists are designing ‘Boundless – Worlds in Flux’ for several levels of audience and intergenerational access. Visitor access includes smartphones, laptops and tablets, headsets, gallery projections with dynamic installations and sensory trigger points. An augmented reality level affords signage to stimulate visitor flow in under populated or poorly utilised areas of museums and galleries. An experimental version using WebGL is in process, (Hudson,2022).

However, to be clear, the Unity specialist Linowes (2020) indicates that VR is considered to be the use of headsets and is different from 360 degree immersive-like art installation which often includes user triggered sensory features. The advantage of VR uninterrupted view of the 360-degree experience enhances the capability of field of view. Future capabilities will capture stereo 360 degrees viewing e.g., Light Fields. Given that the practicalities and appeal for a museum audience-user is crucial, the design needs to be adaptable for multi-platform future development, access and engagement to include VR, but not exclusively.

2.3 Technologies, tools and platforms

Unity platform set up for VR can enable access to different delivery platforms. Export functions include Android, iPhone, gaming consoles, and Web, as an Exe from iOS and Windows and on Oculus Quest or Oculus Go. The alternative Game Engine is Unreal. Some developers recommend Unreal if the project requires focus on high-end graphics and gameplay. Unity remains the industry standard and the royalties remain with the developer (Arora, S, K, 2021). Kass, 2022 noted that given the artists’ original starting point was the Tilt-Brush workshop, Unity is technically most similar to Tilt Brush and not compatible with Unreal and Blender for this current stage of development.

3. METHOD AND WORKING PRACTICES

The artists’ working practices consider aesthetics, technical specifications, user testing. The pipeline process started with experiments with tools e.g., Tilt-Brush, Unity. Integration stage indicated inconsistencies and incompatibilities.

3.1 Aesthetic considerations

These include site-specific environments; collage/ montage/ assemblage; conversations and communities.

3.2 Site-specific environments

The artists were not documenting the real site-specific environment rather creating re-imaginings of futuristic, narrative or psychological virtual simulations. Chen’s environment evokes the feeling of wandering, of strangeness. Designed using Unity to create video projection scenography, this world invites viewers to immerse in the movements of Jellyfish and to be lost in that sense of gravity and orientation. Entering with a first-person viewpoint, as seen by diver’s bubbles, viewers explore and test out where the exit – liquid portals, might be located. Inside these interactive spaces, viewers will find pop-up windows as ‘Iconography’ and ‘Ecosystem’ where artists’ images inspired by Jellyfish throughout the history of art can be viewed along with scientific research in the marine ecosystem. Chen raises awareness of the ecological crisis and shows how we are intimately connected with our environment. Jellyfish are certainly proving to be the only species capable of proliferating in the whole ocean by taking advantage of human misdeeds both technological and speculative. It is urgent to study the mutual relationships between living creatures and their biological, social, and environmental surroundings. Meditating on these facts and learning about the stories of Jellyfish in a trans-disciplinary way is key to the artist’s vision.

Gunn created ‘Odyssey: Ride’ a virtual roller coaster springing from an imagined landscape. It circumnavigates an island planet floating an inland sea which teems with blooms of jellyfish and shoals of fish. Visitors can freewheel through vertiginous coils to hear stories told by a salmon, read poems hidden in rocks and see artworks lurking in caves. Metaphorical and mythical references underpin the structure of this world created in TiltBrush. This was Gunn’s response to the state of uncertainty so many of us have experienced in our COVID times. Her environment resonates with a soundtrack by composer Gráinne Mulvey, rhythmic waves of clapping, the result is a visual and aural odyssey with surprising directions and changes of pace. The
rhythmic soundtrack echoes the tidal movement in Kendal’s environment as well as the Participants’ Space and throughout the other artists’ environments. Gunn’s practice which centres around the movement of peoples, the micro and macro narratives of history and future envisaging is the inspiration for this particular ‘Odyssey’. It is a response to a life where all plans have been changed, it embraces the unknown and is transported, excited by its potential. Field, 2021 in her debate on ‘Scenographic Design Drawing’, relates Gehry’s scenographic design to Deleuze’s idea of the ‘fold’, to indicate that: The (drawing) line embarks on a metaphysical journey, “entering into a labyrinth dividing endlessly ... concave intervals of the whirls that touch one another”, For Kendal, 2022, this evokes the imagery and the experience of Gunn’s ‘Odyssey’ as metaphysical scenographic experience.

Kendal offers an ‘imaging’ based on her engagement with a specific Dorset shoreline and its hidden coves between Shell Bay and Swanage and the Jurassic coastal walks. A futuristic vision which imagines radical environmental shifts caused by rising seas and ecological interventions such as the introduction of beavers and wildlife sanctuaries. The shoreline as a liminal space and a national border, has, at times, welcomed and at other times prohibited fleeing migrants. Early childhood displacement and living at the edge of multicultural experiences is her personal journey.

Parvez has created an environment which evokes the feeling of displacement combining urban and rural, the built environment and agricultural one. Her city panorama is New York and can also be changed to London or other big cities. Parvez was inspired by artist Agnes Denes who grew an actual wheat field in Manhattan in the 1980’s. Parvez who constantly explores the idea of displacement has incorporated connections to the real world in her environment. This is the first step in creating an installation where online visitors touching something in the digital environment can set off a reaction in the physical environment and vice versa. This will be achievable in future iterations of the project.

Broughton’s environment was inspired by childhood experience as well as maritime ecology. Her mother was concerned that she needed to learn to swim and brought her snorkelling experiences in the Red Sea. She found the experience troubling because of the water’s depth; however, it was also magical to see the multicoloured shoals of fish and to have little turtles swimming alongside. Broughton also wanted to incorporate the idea of fish predating on other fish, and the fragile state of the oceans. She has created an underwater scape of coral citadels with flashes of fish hunting, glimpsed as it were, out of the corner of the viewer’s eye.

3.3 Collage, montage, assemblage

The virtual environment affords digital assemblage to generate new simulations. These include textured skins to ornament 3D hollow shapes – creating illusion of volumes turned into mass, fluidity and unpredictability of gas and liquid such as water, mist, fog, the effect of wind through the grass or wheat-fields; gravity, solidity, ‘bounceability’- lightness, to conjure up the physical laws within imagined space.

Gunn’s practice has involved mixed media and collage for over 40 years. Coming late to new media, these technologies are absorbed in how she always works. Using Tilt Brush, 3D scans, film, sound, her process involves a lot of workaround solutions, a flexible attitude and a delight in problem solving. Collage is an important way of including different perspectives, the lives, the stories and the aesthetics of others.

Kendal and Grant have developed a virtual shoreline. The montage of media types includes 3D vector-based characters and landscape with texture wraps, bitmap painted textures, photographic projections, bitmap photos of physical tangible drawings, soundscape. The shoreline offers regional areas including sand dunes and sand grass, heather walks, bogland forest, bitmap-painted sea waves. The cliffs embed cave paintings depicting mythological stories in remembrance of stories of migration, loss, re-integration and redemption.

3.4 Conversations, communities

Chen, who lives and works in Paris, has brought scientific and design contacts on board, in particular Thomas Picard, Technology Strategy Advisor and Lecturer at Strate Ecole de Design who will coordinate specialist testing with students. She has equally introduced the project to her Taiwanese network where former colleagues will test ‘Boundless’ with students at National Taiwan University of Arts. Chen is planning to show the ‘Boundless’ project in a future Smart Cities & Communities exhibition in Paris.

Gunn introduced the project, shared ideas, sent questionnaires and collated user feedback from excluded and hard to reach communities in London and Liverpool with whom she has previously worked. As virtual artist in residence with Museum of Childhood Ireland which actively promotes the rights of children and Elmhurst Primary School, London, she ran presentations and collated feedback from a range of young people. As an associate at Tate Exchange Liverpool, she reached out to fellow Tate Exchange associate Sunil Manghani and brought Winchester College of Art on board as a testing partner – specifically Contemporary Curation MA students. Her upcoming
role as visual artist in residence at the Institute of Irish Studies and multimedia solo show at Victoria Gallery & Museum enabled her to bring University of Liverpool on board as a project partner going forward.

Kendal is in conversation with site-specific communities associated with Dorset coastline’s changing ecologies, including Glen Crisford of the National Trust – beaver specialist. Interaction with tester communities / ‘communitas’ enables conversations that afford transformational values within and beyond the virtual world.

Moore, 2018, refers to Maya Deren’s film art and her writings, 1946, on notions of ritualistic art forms. Likewise, the A-Maze artists are aware of creating ‘a time out of time’, augmented, multi-layered and hybrid perception of reality. For Kendal, Gunn and Kass, there too is an interest in ritual, rites of passage, meditative states, transfigurations, pilgrimage. Resonances between artists and artists communities’ working practices, open up shared experience of cyber-consciousness.

3.5 Technical specifications, problem-solving and lessons learnt

3.5.1 Technical specifications.
A-Maze artists have created this virtual world as an all-knowing intelligent planet, with environments that can be explored by sensory humans’ visitors with reference to cultural legacies such as Shelley’s ‘Frankenstein’, 1818; Hardy’s ‘Egdon Heath’, 1840-1928; Tarkovsky’s Solaris, 1972; Piercy’s He, She and It/ Body of Glass, 1993.

Technical specifications are being developed to enrich the users’ sensory experience.

1. Pathways and orientation: Fine-tuning transportation bubbles/tunnels. Previously the transportation function was through tunnels, but now through bubbles, this function can be ‘juiced’ up.

2. Mapping and signposts: Will signposts be needed as guides? Currently spaces/pathways/ doorways are revealed as the visitor freely move around the spaces.

3. Evaluation of User Experience: User walkthroughs and monitoring user activity through the site, can track length of visitor engagement time.

4. Pace and rhythm of movement through the 3D space draws on cultural references. E.g., Kendal draws on the notion of the wanderer with a peripatetic desire from flaneur to visionary (Coverley, 2012) who walks across dynamically changing landscape encountering literally and historical connotations (Hardyment 2012). Sensing textures/ colours/ transparency- opacity e.g. fog, mist, seasonal or daily rhythms, changes in weather, light and opacity.

5. Sense of gravity, bounce-ability, of weight and solidity of objects, the feel of walking /swimming / moving as an avatar.

6. The sense of liminal transitional places between land/water/air/ up in the skies/under the sea, in mist or in clear air. Water/sea/ tides ebb and flow, and rising water levels, being underwater or on the beach /shoreline.

3.5.2 Using Unity
“The major problems in the world are the result of the difference between how nature works, and the way people think”, (Bateson, 2000).

Whether creating physical installations, a game or another form of experience it is imperative to consider how the environment will affect the user/participant/perceiver. Most living things are engaging in effortless interactions with their surroundings, through the senses, in both output and input – through actions taken and the responses to the action of other entities. All the senses influence the personal responses to these immediate and live encounters. Unity 3D allowed us to start developing artistic experiences with these sensitivities in mind.

When considering potential immersive, world building tools we required a sweet spot of technical control and, for the artists, creative expression. Due to some A-Maze artists’ designing large majorities of their pieces in a VR headset (Tilt Brush) we considered software compatibility, as noted elsewhere.

The decentralised nature of the project (Braidotti, 2018) was integral to this Artists’ collective. Shared software platform needs to function simultaneously and globally. Unity enables collaborative working for multiple geographically dispersed designers. However, communication issues alongside various puzzling technical errors have required the team to share large unity projects via google drive due to Mac and Window incompatibility, Plugin transfers among other uncanny technical errors.

An important component to acknowledge is the online Unity forum community of largely anonymous helpers who have played an integral role in solving some of the issues we have faced. From the Open Brush, 2022, giving clear instructions on how to integrate Tilt Brush with Unity to the Stack Overflow,
2022 community responding to various questions posted.

3.5.3 Lighting
Linowes, 2021 in ‘Lighting, Rendering, Realism, notes the challenges of a lot of runtime processing overhead that can create a negative impact on user experience. We need to make design decisions, based on narrative choices, often trade-offs between realistic details and smooth user experience.

When the development team was introduced to the project in September 2021, HDRI’s were introduced as skyboxes. These are panoramic photos that contain large amounts of light data which can help illuminate a 3D scene. This method has two main positives. Firstly, lighting in this way is easier on a computer to process. Our goal was to make the artworks accessible to a wider variety of computer types. This way of lighting creates a symbiosis between processing finesse and aesthetic quality we strived for.

Secondly, having this consistent and detailed lighting starts to help avoid harsh and inconsistent lighting. In Unity, if a scene uses multiple light sources, the lights can sometimes sporadically turn on and off. This can happen quite abruptly. Part of the core intention of the technical development was to create something that was smooth and playable. Both for aesthetic sensibility and to achieve an inclusive experience accommodating sensory processing needs. Optimising the lighting in this way helped us move a little closer to achieving this intention. With some way to go still.

3.5.4 360 environment, skyboxes
Experiments e.g., with SkyBoxes, Shaders, Reflections, 360 Degrees, ‘fog and mist’; hover/select/activate; visual traces; light emission and reflections ‘juices’ up the experience and gameplay. E.g., note the Visual effects used in Doug Aiken’s: Metallic Sleep, 2022, ‘a digital sculpture of interlocking oval mirrors, stands in the centre of a small arena surrounded by a high concrete wall, above which a twilit sky shifts in an unreal wind’ (ArtNet 2022).

3.5.5 WebGL
Hudson, 2022, has been problem-solving WebGL to facilitate easy web access. In order to make the world accessible, a web-based solution can eliminate many of the problems associated with developing different versions for different target platforms e.g., Windows, Apple, Android. Having the work online also allows for quicker access to the work without having to download the whole application. The work can be split up scene by scene, only downloading the scenes the viewer wants.

One issue that was raised when using the WebGL format was using Tilt Brush. Some of the shaders that are part of the software use audio input; the Tilt Brush SDK therefore has code to allow these to function. WebGL doesn’t allow audio input since it presents certain security risks. Thankfully the Open Brush website provided detailed instructions on how to upload to online applications – Refer to STYLY section (Open Brush, 2022).

3.5.6 Importing Tilt Brush assets
As an integral part of their creative process, Gunn designed her artwork, the participant space and the hub in Tilt Brush. The file format for this software is GLB. Importing these files into Unity can be problematic. The TiltBrush SDK, available free from GitHub, combined with Open Brush’s online step by step guide we were able to integrate these file types into Unity. However, Tilt Brush creates their own shaders, or materials which created some developmental issues. Firstly, due to many of the brushes creating quite high polygon objects – the geometric shapes that make up 3D objects – as well as complex procedural shaders (moving and animated) resulted in a requirement to optimise a little heavier than other scenes needed. This was done by combining two plugins, PolyFew and Amplify Impostors. The Impostors plugin was used to replicate objects that were used repetitively, turning 1000 polygon objects to 10 polygon objects. Secondly, when creating interactions in the participant space we experienced a lot of difficulties. E.g., creating interactions whereby individual trees’ material would change when touched or clicked on. Due to unclear file naming systems from Tilt Brush the interactions would change sporadically. A tree would be clicked, and an interaction triggered but, unfortunately, change the material of a different unintended tree elsewhere in the forest. We are still currently searching for the solution for this particular complication.

3.5.7 Importing Maya assets
3D Maya assets have been imported into Unity. E.g., Broughton’s self-created animated fishes. James and Grant are working on animated beavers.

3.5.8 Importing libraries
Libraries of textures and flora are imported from within Unity or external suppliers, Grant 2021/2022.

3.5.9 Using the Universal Render Pipeline
Different pipelines are available from 2019, (Linowes, 2020):

(i) Built-in Render Pipeline BIRP
(ii) Universal Render Pipeline URP
During integration stage, A-Maze design-developer team have investigated different render pipelines and resulting incompatibilities/compatibilities.

3.5.10 Juicing up the scenes
Future development includes enlivening the scene, so the environment feels alive, responsive to the user’s ‘touch’ and ‘feelings’.

Gunn’s scenes offer the user trips through a roller coaster suspended above a dynamic swirling sea; In Chen and Broughton’s spaces, marine environment is experienced from under the sea. Parvez’s scenes offer the user the sensory juxtaposition of urban experience with walking through the wheat-fields. Kendal’s scenes encourage a walking meander through diverse terrains and textures of shoreline.

3.5.11 Team-working and online community-learning
The decentralising aspect of team-working has afforded a major challenge at the integration phase. The open approach of different artists working separately on Unity is similar to the open approach of decolonising cultures. In order to meet the challenges of different Unity set ups, a further integration testing phase has been required. Moreover, unlike a commercial set up, artists, designer-developers are all working from within their personal home studios, without the support of a professional development service team. Problem-solving, whilst referring to industry forums, is achieved in-house across the team Kass, (2022).

3.5.12 Testing
At this early stage of testing, A-Maze artists offer simulated movies of visitors’ experiences. Conceptually, aesthetically and technically, the early movies made in June 2020 have evolved radically from the movie simulations generated in February 2022. Now movie stimulations use animation key frame techniques from specified coordinates and camera view positions. (Grant and team 2022)

3.6 Supporters

3.6.1 Collaborators
- Thomas Picard – Technical Strategy Advisor/ Lecturer at Strate School, Paris
- Sean Rodrigo Immersive Artist / XR Tutor / Creative Technology Consultant, UK
- Paul James, Digital Content Designer, C3 Studios. UK
- Professor Sunil Manghani, Winchester School of Art, UK

3.6.2 Schools
A-Maze have carried out iterative testing with Elmhurst Primary School, online presentation followed by questionnaires distributed and collated in combined art/technology classes. The school will continue as a testing partner going forward and we are also identifying other school partners in Liverpool specifically.

3.6.3 Higher education
Through the Tate Exchange and Gunn’s role as a Tate Associate, a fellow Tate Associate, Professor Sunil Manghani met and invited the A-Maze artists to present the project to a group of postgraduate artists from Winchester College of Art.

4. SUMMARY AND NEXT STEPS
The ‘Boundless’ project is some way from the end of the beginning, and we’ve learned many things we wish we’d known before we started. However, our instincts about digital inclusivity are proving right; gaming technology has wider cultural applications, artists can find workaround solutions, diverse perspectives, complex and subtle visual narratives can lead to more satisfying user experience and deeper engagement.

Embracing new media and technologies allows cultural institutions to decolonise their collections in creative ways, enriching their role in society rather than impoverishing it. From the artists’ perspective, this allows greater freedom to engage with diverse communities, to have access to spaces which were not available before, to communicate directly and ethically with audiences and to not have their artworks mitigated or watered down by institutions.

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