CONNECTIONS: EXPLORING HERITAGE, ARCHITECTURE, CITIES, ART, MEDIA

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Reimagining heritage buildings as technological spaces

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INTRODUCTION

In the course of two immersive projects, *Digital Ghost Hunt* (UKRI/AHRC) and *XR*^{3} (UKRI/AHRC; in process), we have developed a framework for temporarily reconfiguring heritage buildings as technological performance spaces for roaming audiences, without the need for making any permanent changes to the fabric of the buildings. The performances produced within this framework are designed as participatory, 'storified' encounters with heritage buildings and their history, utilising a range of simple hand-held sensor devices (SEEK detectors, designed and built for the project), the heritage building itself, and a custom 'ghost story' that allows participants to uncover the history of the building. At the immediate level, our framework builds new young and young adult audiences to engage with heritage and enter the technological design process as collaborative makers and performers. Beyond this immediate level, our approach superimposes a technological space onto an architectural heritage space, emphasising its potential as an 'experience machine' that is animated by our movements, perceptions and actions. Reconfiguring and combining technological spaces and heritage spaces, or aim is to create a subject position that is located where they intersect, inviting participation as agents that connect and 'caretake'.

The relationship between audiences and buildings

Framing audiences

Digital Ghost Hunt and *XR*^{3} performances frame participating audiences as the driving force within two-part experiential spaces, with technology as one, only partially complete aspect of the fully scripted experience and the hidden story of heritage buildings the other. Complementing these already designed or scripted parts, the audience brings conclusion to the experience through discovering and collaboratively resolving the quest that keeps the ghost trapped.[1] We position audience agency as central,[2] shifting subtly away from the idea of narrow affordances towards accommodating a broader desire for exploration and expansion of the experience horizon. The ghost story, which is adapted for each site, is built around the idea of discovery and is interlaced with the local heritage and history of the building, configured so as to come to life through the explorations and interventions of participants. Through framing audiences as collaborators with the ghost in the story, we humanise the character and their quest. The building and its heritage thus become both frame and experience machine, within which the audience and ghost communicate across time.

Inverting the technological gaze: entering the box

Our mixed reality model posits tacit questions around virtuality and embodiment in technological and aesthetic experience and offers the opportunity to participating audiences and researchers alike to closely trace the outline of agency in the suspension of disbelief. In a successful rendition, the design team and the audience 'meet' across this outline, mediated by the interface. Approaching heritage buildings as experience machines, meshed with technologically aided designed experience has broadened our initial objectives for *Digital Ghost Hunt*. At first, we wanted to crack open the 'black

box' of media technologies for young audiences to enter and build agency-led relationships with technology and design through storytelling. Beyond this objective, and with several successful renditions of *Digital Ghost Hunt* behind us, our research has become more focused on using the architecture and heritage of spaces as vehicles for storytelling, towards creating new and sustainable ways of interacting with heritage spaces and architecture. These perspectives come together in the idea of buildings as technology; 'machines' for aesthetic experience. In the present moment it seems more than apt, and perhaps essential to explore navigation of the complex interactions between physical and digital spaces. The 'bleed' between machine and human cognitive assemblages in our everyday interactions with distributed and embedded computational networks forms a computational unconscious[3] that draws on a human nonconscious.[4] Interaction through such technological-cognitive assemblages is closely instrumentalised, monitored and monetised, making its relative opacity problematic in several dimensions. Articulating the role of human participants in such assemblages – providing the inquisitive and connective agency and interpretative effort that animate them – serves as a timely reminder for a generation that will soon need to address the socio-economic and political consequences of pervasive computation and will need to draw on history to understand the moving present.

Heritage architecture as technological spaces for 'troubled play'

Regarding buildings as a form of technology or 'experience machines' that are activated by and through movement and shifting perspectives within them positions embodiment as central to designed experience. It allows for complicated or even troubled forms of play; "the processes that make and unmake objects, whether these are natural objects, manufactured objects or those objects that live and experience".[5] With this understanding that the lived aspect of experience is embodied as it occurs in time and space,[6] the audience become vehicles for meaning-making; adventuring co-creators, invited and challenged by the designer. The designer of 'troubled play' thus operates with the emergent tensions between sensate and cognisant aspects of embodied experience. This tension can be employed in design to generate experience potential where physical spaces are either limited, or where interaction must be limited for conservation purposes or health and safety. These limitations can instead become useful storytelling devices to vary audience flow and experience, such as using smaller spaces to temporarily separate younger participants from their parents and foreground their own independent agency. Our chosen approach with primarily young audiences has been to ground and embed the already 'ghostly' digital imagination within the more concrete counterpart of heritage experience, positioning the former not as a transcendent, omniscient and inscrutable agency, but a set of fallible tools for the human hand and cognition. The endless variety of ghost stories allow audiences to approach the experience with a fluid set of expectations, facilitating engagement with different emotional registers through the vehicle of the localised ghost character. Although in the course of solving the riddle presented to them, audiences take on a more senior or 'caretaker' role in relation to the technology that is used in the performances, experiences have used that same technology for humour, pathos, and dread, depending on the ghost as well as the heritage mystery that is revealed through its story. Through this superimposition of spaces, young audiences can access an embodied experience of not only their own agency in relation to technology, but also the aesthetic and emotional dimension of heritage architecture.

OUR PROJECTS: FROM *DIGITAL GHOST HUNT* TO *XR³*

The Digital Ghost Hunt

The first rendition of *Digital Ghost Hunt* took a Keystage 2 class from classroom to the Battersea Art Centre in an experience that stretched over a month. The classroom facilitators inducted the school children as 'ghost hunters' through a range of exercises to embed the narrative and produce SEEK

devices, later to be used at the heritage venue. This type of collaboration between local partners with the heritage venue is replicable and adaptable to different audiences, which is a feature we will develop with *XR³*. For the purpose of this, first rendition, we collaborated with the school to embed coding skills into the curriculum. Subsequent renditions at the Theatre Royal in York and London's Garden Museum did not incorporate a classroom experience and allowed us to adapt the induction process to circumstances when this was not feasible. Our team found that trusted adults, whether facilitators attached to the designed experience at heritage sites, teachers 'cast' as collaborators with the designed experience, or parents/guardians who acted as facilitators, were critical to the capacity of young audiences to 'self-abduct' and enter into negotiated immersion. The nature of the performance necessitated a flexible degree of support from trusted adults, in response to the level of suspense. Young audience members utilised this facility to engage more freely in the suspension of disbelief, extend interrogation further, sustain a greater degree of suspense and, afterwards, recount their discoveries. Our collaborative relationships with, in particular, Battersea Art Centre and London's Garden Museum will continue, given resources, as we take some key aspects from *Digital Ghost Hunt* forward in the development of *XR³*.

XR³

Drawing on our experience with *Digital Ghost Hunt*, but seeking to scale the story-making framework, we conceptualised *XR³* as an experience design framework that is open to a) diverse heritage venues and local researchers, b) diverse production teams, and c) diverse audiences. The knowledge base provided by *XR³*, which we are currently developing, comprises technological resources (from devices to code libraries), narrative resources (an adaptable story framework that is open to local lore and legacies), and an organisational framework that facilitates project, production and copyright management. To ensure that the framework is fit for purpose as a replicable formula that is applicable as intended to a wide range of heritage sites, different audiences and local production teams, we will stress-test it at several heritage venues, with different production and research teams to produce a model for heritage experience design that can be localised and adapted. To do so, we aim to continue working with two of our heritage partners from *Digital Ghost Hunt* and add two more sites; Bournemouth's Russell-Cotes House and Gardens, and Leigh Spinning Mill. These sites present entirely different environments, and we will work with local partners (Bournemouth University and Manchester Royal Exchange) to develop custom experiences, engaging local production teams in their realisation. At the end of the project, we will offer a standalone framework that supports the sustainable development of localised and curated immersive performances for diverse heritage audiences.

THE INTERFACE: BALANCING SPACE AND PLACE

Within the notion of designed experience, a perspective on architecture as interface, or rather metainterface[7] allows an understanding of enactment as a mode of not just experience, but realisation of the aesthetic vision. Design that incorporates the agency of its audience raises important questions around how designers may shape experience within spaces that present both opportunities and limitations in non-linear encounters. Intuitive in architecture, the resulting idea; a field of opportunities that is focused not on lines but interchanges, echoes Christopher Alexander's romanticised second theory of architecture[8] and is of more critical interest to digital interactive milieus. Challenges associated with the creation of experiential space within technological milieus which rest on digital infrastructures include the escalation of fragility as the audience journey becomes more open-ended. Designed experience in heritage environments face similar challenges, albeit with potential risk and consequences for collections rather than infrastructures. Curated experience design for heritage buildings also comes with the compound risk of inelegance as a result of oversimplification,

inaccuracy, and of the audience labouring under stifling legacies. Addressing these problems, *XR*^{3} – our design framework, looking forward – incorporates research collaboration with local historians and curators as a key part of the framework, and proposes remedial dramatic devices that we developed with *Digital Ghost Hunt*. These leverage the fallibility of technological representation to generate opportunities for the audience to enter into the 'systemic play' that is a function of challenge and the drive to resolve and conclude.[9] Opening up the texture of such challenge as part of the experience allows us to frame audiences as caretakers in relation to both the technological and the heritage environment and invites them to embody this role in movement through space and time, oscillating between what is and what could be, configuring their role as a form of systemic play.

The shape of experience

Interactive spaces not just invite but require the commitment of audience agency to their completion and the realisation of the aesthetic vision that guide their creation. Rey Chow discusses the artwork as a trap,[10] designed for audiences to 'self-capture' and perform its completion, finalising the design. This perspective on audiences holds for an artwork in a gallery, a theatrical experience or the embodied experience of architecture, and underscores the idea of 'troubled play' as an expression of agency. The suspension of disbelief of participatory audiences that allow them to enter into complicity with the completion of the artwork is voluntary, and act of self-capture. Such complicity with entrapment forms a compact, and as such, it is a prerequisite for the type of immersive experience sought by our heritage clients and collaborators. It invites ongoing negotiation, supported by trusted facilitators, particularly when audiences are young, and allows for the negotiation of space and place, license and limitation. In *Digital Ghost Hunt*, we overlaid heritage sites with a 'story trap' that left no imprint on the fabric of the building and we are taking this concept forward with the *XR*^{3} framework, which formulates experience design for heritage buildings as a composite of the aesthetic 'trap' presented by the building itself and the designed entrapment of the mystery story. The composite experience casts the audience as voluntary captives and historical researchers, and a critical moving part in a clockwork that comprises the architecture and the designed experience.

Interpretation gaps

Building a design scheme around interchanges, possibilities and emergence requires attention to gaps or affordances, into which the agency of the audience may flow. These designed affordances form the interface; a permeable membrane between the intent of the designer and the agency of the audience. The interface itself must, even when it is manifest only or primarily as affordances, virtual conduits or interpretation gaps within the designed experience,[11] be stable in order to preserve the design, particularly so in historic buildings, where alterations to the fabric of the building or the collections held within are not possible or allowed. The gaps into which investigating audiences may enter to safely and creatively explore the design shape the experience, and it is here that we may expand experience potential by leveraging the possibility of failure and destabilise the hierarchy of agencies. In order to do so and still maintain the integrity of the designed experience and the heritage site, the whole can be regarded as a nested set of frames, including the site and its architecture, the performance duration and theme, the aesthetic vision, environmental considerations ranging from health and safety to preservation and the gaps or possibility spaces within which the audience agency can be expressed. The integration of these frames within a coherent design scheme that manages space, or expansion of experience potential, and place, or containment, is the interface; a connective tissue between the designer and the audience. It is both immaterial and material and resolves in the understanding that the interface is "the site and condition of dynamic behaviour" and "draws upon the force or energy supplied by the bodies that are aligned against it".[12] Much like a connective tissue, its function is to hold and balance movements, adaptations and tensions that emerge between the exploratory activities and desires of audiences and the structure of the site and the designed experience.[13]

OPPORTUNITIES FOR *XR³*

Embodiment and heritage

XR³ is conceived for collaborative design in heritage settings to leverage and complement the skillsets of local teams. Co-creation of heritage experience affords, as demonstrated by our case studies, preservation of historical grounding in the adaptation of the design framework and allows heritage venues to develop their audiences. For *Digital Ghost Hunt*, we worked with local community groups, curators and archivists in the development of the story framework to deliver custom experiences that meshed with heritage buildings and their history. The objectives for curated heritage experience must incorporate authenticity and any set of values that are stipulated by local organisational priorities. Translation of such objectives into designed experience for young and family audiences presents some key challenges. Young audiences have often encountered interactive design primarily in online game environments, where historicity mainly features a source for visual and storyline themes, rather than a structured and accurate source of facts and discourses. Historical research raises more questions than it offers closure, and a hedonic shift that positions the former as an enjoyable experience can be aided by dramatic design Exploration with a flavour of independent enquiry is attractive particularly to young audiences, especially those that are accustomed to the game environment. Freedoms or affordances to roam are less narrowly confined in physical spaces than they are in digital or virtual spaces, where technical limitations and designed interpretation gaps at the infrastructure level offer relatively narrow constraints. Games typically offer more readily available closure, whereas historical research poses more questions. Leveraging these differences to maximise the scope for experiential space facilitates embodied engagement with heritage in a 'quest' format that follows the Aristotelian story arc and is shared with many computer games.

Future-proofing the heritage sector

Building new audiences through design of curated experience that respects historical artefacts and incorporates new modes of interaction can serve to future-proof the heritage industry. The heritage industries were already under pressure to build audiences and revenue prior to the crisis presented by COVID-19, and the pandemic has created new financial threats across the entire sector.[14] It is too early to foresee the full impact on heritage sites and their funding, but it is likely that these pressures will intensify further, since the financial stresses that result from the pandemic impact the broader economy.[15] Assistive frameworks such as *XR³* will hopefully be able to provide meaningful support in the emergent situation, and help heritage organisations rebuild and grow their audiences. The framework will compensate flexibly for skillset gaps in local development teams, supporting localised research and curatorial skills with technological means and logistics, and he adaptation and production of custom heritage experiences.[16] We were already developing *XR³* at the beginning of 2020 and adapted the project to the emerging situation when it became clear that it was going to have massive impact on the creative and heritage sectors. Since then, we expanded the concept to incorporate training and capacity-building for the creative industries through artist residencies and the development of educational methodologies for teaching collaborative immersive experience design.

Integrating social distance in experience design

An unexpected, but in the post-COVID-19 landscape possibly quite significant advantage of approaching experience design by way of the shape of the audience journey is that it allows the design team to consider audience density in detail within the development process. Through-flow can be carefully managed in tandem within the overarching design scheme, and even adapted in response to emerging guidelines. Providing local teams with the means to respond to emergent government and local guidelines that are issued in response to levels of new infections will help heritage organisations through the near- to mid-future in a post-COVID-19 environment.

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