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Hybrid Design *Creates* Innovative Museum Experiences

*Assembling mixed
media artifacts in
order to create
engaging museum
environments.*

The Situating Hybrid Assemblies in Public Environments (SHAPE) project within the European Disappearing Computer initiative has explored how emerging ubiquitous technologies can support museum visiting experiences. Many museums still rely on simple text panels to provide information to visitors about museum artifacts, which are enclosed in locked glass cases. Visitors have little chance of engaging with the material. Also, ethnographic studies of public installations have highlighted the collaborative nature of museum visiting, with couples and family groups interacting around exhibits, and discussing artifacts with museum guides and other visitors [1, 4]. The studies revealed the significance of co-participation and collaboration in the museum experience and the ways in which the navigation of galleries, the discovery of exhibits, and the conclusions that people draw arise in and through social interaction. These studies involved extensive fieldwork, audio-visual recording, interviews and discussions with curators, museum managers, educators, and exhibit designers.

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hybrid artifacts—installations that support visitors manipulating physical and digital material in a visible and interesting manner for many museum visitors. A second concern has been how to knit together multiple artifacts into a coherent visiting experience that extends across space and time. These ideas have been explored in two *living exhibitions* developed within public museums. Both design interventions avoid the simple didactic forms of display, where visitors passively receive information, by creating stimulating exhibition environments where people explore, question, debate, and reflect on the nature of museum collections.

Uncovering digital history at Nottingham Castle. Nottingham Castle has witnessed over 1,000 years of British history, including the exploits of Robin Hood and his followers. However, visitors to the current site face a difficult challenge: how to understand the many interleaved events that have taken place at different times and locations, in buildings and spaces often no longer visible above ground.

The first living exhibition addressed this problem by creating a “history hunt” around the castle grounds [3]. On arrival, groups of visitors, often

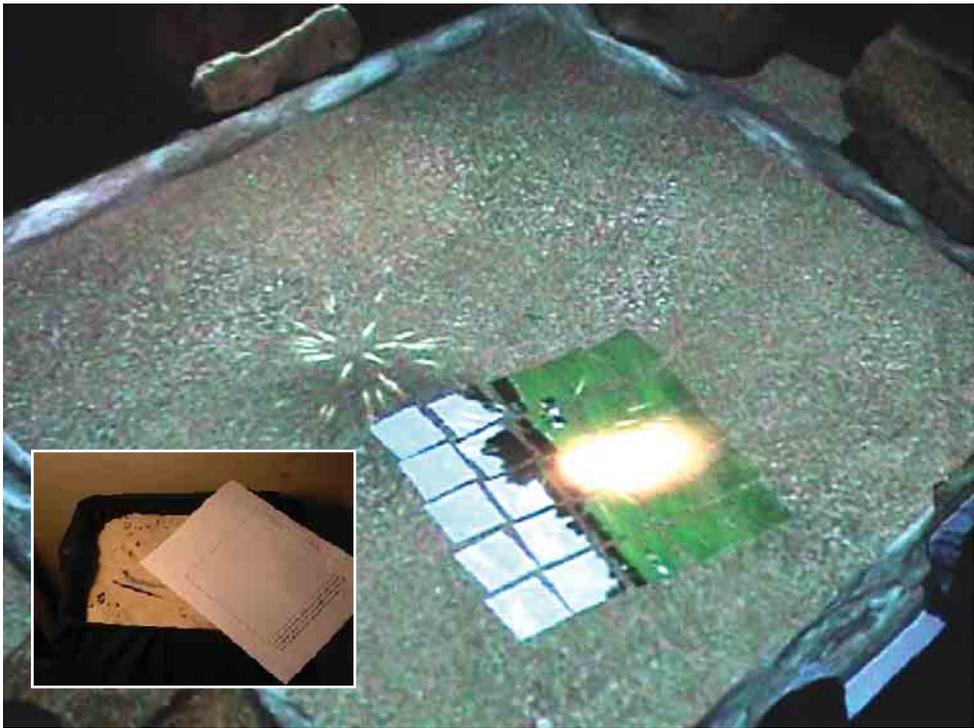


Figure 1. The Storytent with turntable inset (top) and the Sandpit with sandbox inset (bottom).

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families, collected a set of paper clues that led them in search of a specific historical figure. At key locations associated with this person they were asked to annotate and personalize the paper, for example, by making drawings or rubbings. Back inside the museum they used their completed paper clues, which were electronically tagged using RFID, to shape their interaction with several installations that revealed further information.

The Storytent was a mini-immersive environment in the shape of an A-frame tent. Visitors placed paper clues on a turntable, which through an embedded RFID reader triggered the display of a 3D historical reconstruction. They could rotate the turntable to view a 3D panorama and also view related paintings and documents from the museum's collection. A second installation, the Sandpit, was a floor-projected display of graphically simulated sand in which groups of visitors could dig for images. The images loaded into the sandpit were also related to the current paper clue placed in a nearby sandbox (containing an RFID reader) and digging was achieved by shining flashlights onto the display (the positions of the beams were video-tracked).

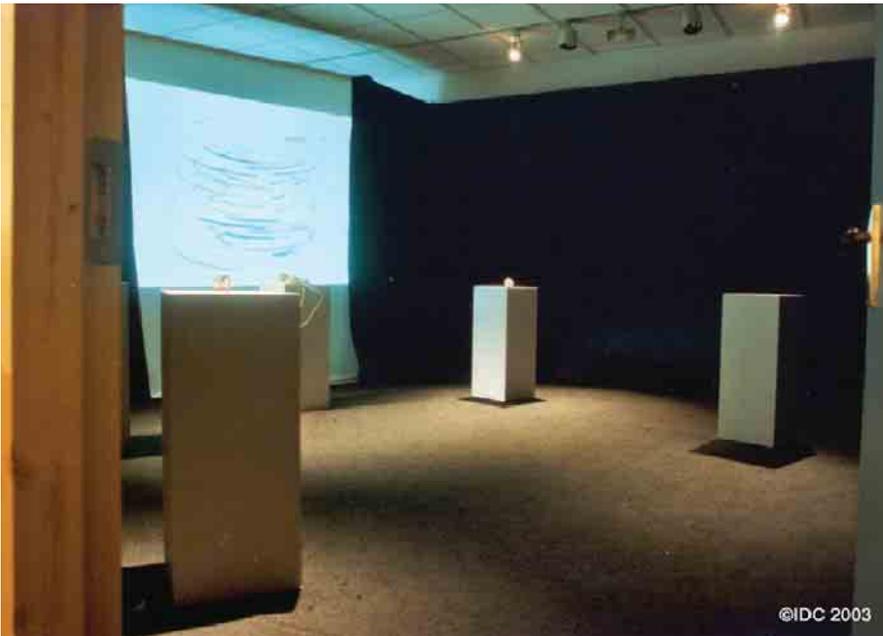
Both the Storytent and Sandpit were designed to support collaboration among visitors—sitting together in the tent or digging together in the sand—and also provide public views of their interaction (see Figure 1). The RFID-tagged paper clues then provided connections between these different displays and the visitors' experiences from the grounds, relating physical locations to digital information and enabling visitors to assemble a coherent overall experience from their interactions with different installations.



Figure 2. The Study Room (left) and the Room of Opinion (right)

Retracing the past at the Hunt Museum. “Re-Tracing the Past: Exploring Stories, Objects, Mysteries” was the second SHAPE living exhibition held in the Hunt Museum, in Limerick, Ireland. It was designed to show how novel interactive computer technologies could be sensitively introduced into a museum setting, adding value to existing artifacts. The design of “Re-Tracing the Past” was based on the insights learned through a series of field studies [1], and was guided by the production of a number of design scenarios. Participatory design sessions, prototyping workshops, and focus groups were also conducted [2]. The exhibition was an integral part of the Hunt Museum 2003 catalogue. Two room-sized spaces—the Study Room and the Room of Opinion—contained interactive installations created within the temporary exhibition area of the museum (see Figure 2).

The Study Room contained four interactive installations that enabled visitors to explore various details



of mysterious objects of unknown or uncertain provenance and purpose. Object cards endowed with RFID technology were the keys visitors used to explore the installations and trigger the provision of information, providing a unifying activity for the experience, as the augmented paper clues did in the historical hunt living exhibition.

This area was designed to provoke the visitor's imagination, to show there are a variety of perspectives from which to understand these mysterious objects, and that there could be several kinds of evidence that might be used to interpret them. The Room of Opinion enabled visitors to handle replicas of the objects and to record a personal opinion on the nature and possible use of these mysterious objects. These recordings were also dynamically collected and projected in the space through visual and aural means, allowing other visitors to hear and see the interaction. Also, these visitor opinions were stored and made accessible to all visitors at a further installation, the

Radio, which served as a permanent "memory" of the opinions that visitors could scan and play.

The SHAPE project has provided interesting insights into the ways in which new ubiquitous technologies can be assembled and combined with other media to create new and engaging forms of interactive and collaborative experiences within museums. **C**

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