

CASTING: Site-Specific Projection Mapping Installation

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ABSTRACT

This paper investigates *CASTING*, Yiyun Kang's site-specific projection mapping installation at the Victoria and Albert Museum in London, U.K., and the acquisition of the piece by the V&A in the following year. It identifies how *CASTING* developed distinctive properties in the field of projected moving-image installation artworks and how these novel characteristics were reflected in the acquisition by the V&A.

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CASTING (2016) was an object/site-specific installation exhibited at the Victoria and Albert Museum (V&A) on two separate dates—12 February and 18 March 2016. The medium of this work is projection mapping, a relatively new projection method that can be used to transform objects—often irregularly shaped—into display surfaces. This mode of projection wraps three-dimensional surfaces, from small objects to entire buildings, with digital moving images. This exhibition was the culmination of my six-month artist-in-residency program at the V&A sponsored by Samsung. *CASTING* was acquired by the museum in 2017 as the V&A's first purchase of a projection mapping installation piece.

Background

CASTING, an object/site-specific installation regards its location—the Cast Courts, Gallery 46A of the V&A—as both the subject and object of the projection. First opened in 1873, the Cast Courts were built to exhibit comprehensive collections of casts of postclassical European sculpture, housing the V&A's largest objects (Fig. 1). As a resident artist, I was attracted to the Cast Courts' unique ontology, which led to my making *CASTING* a site-specific project. The Cast Courts have often been a source of controversy during their roughly 140-year history. For example, by 1928, the Museum considered discarding the Cast Collection because it was considered “unworthy of the Museum and [. . .] injurious to students” [1]. However, during the Second World War, some of the original pieces of art were destroyed, and in a few cases the casts remained a unique record of lost work. Accordingly, the perception of the Cast Courts began to change, and the collection has now come to be fully appreciated.

One of my reasons for working with the Cast Courts was that its collections are reproductions rather than originals. As noted, the dominant opinions of the Cast Courts in 1920s and 1930s were unfavorable because the works were not seen as real, authentic, original pieces. This issue of copy versus original is significant in digital media,



Fig. 1. Photos of the Cast Court, Gallery 46A. (Photo: Yiyun Kang)



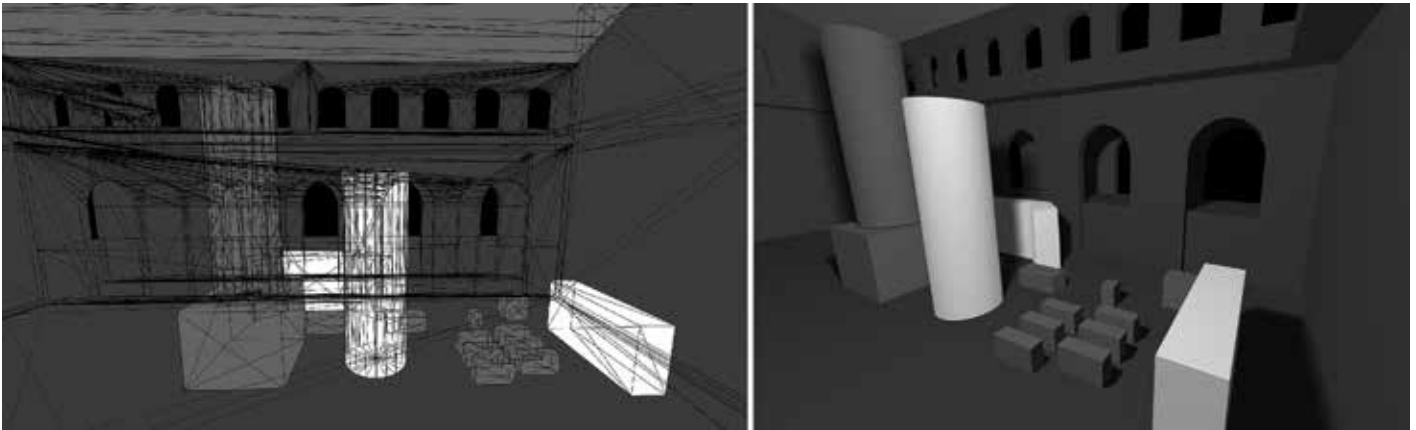


Fig. 2. Still images from 3D models. (© Yiyun Kang)

given that the notion of originality does not strictly exist in the digital realm. This ontology was also relevant for my project because the notion of originality does not firmly exist in projection mapping either, as it uses digital moving images. However, I argue that projection mapping entails a somewhat different ontology; despite its digital nature, it exists only when incorporated with its physical environment.

I titled this project *CASTING* because I intended to “cast the casts” through my digital projection, both in their given sense as artificial casts of original objects and in terms of “casting” as enlisting them as actors in a moving-image production.

Process

I began the project by measuring the real space and building a virtual model of the entire gallery (Fig. 2). Based on this real and virtual exploration, I decided to map three individual casts: Trajan’s Column, the Western Portal of the Cathedral of St. Sauveur and the Shreyer-Laundauer monument from St. Sebaldus. In choosing these, my concern was to generate an overall environment because the primary focus was the meaning of “cast” as situated in the Cast Courts rather than the specific content of the selected casts.

In producing animations for the three casts, I used Maya software, a Non-Uniform Rational Basis Spline (NURBS) program used in computer graphics for generating and representing curves and surfaces in virtual environments (Fig. 3). Alicia Imperiale explains that NURBS software is based on a dynamic system in which shapes are morphed in shifting relation to a surface [2]. The use of NURBS software in *CASTING* thus enabled me to focus on creating the structural sequences to fit each of the projection surfaces of the three casts. As a result, I produced black-and-white animations that are composed of dynamic movements of geometrical shapes devoid of any reference to the real.

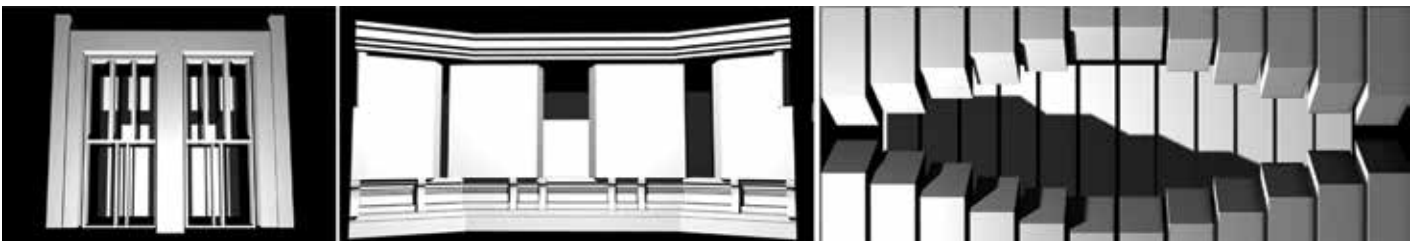


Fig. 3. Still images of final .mov files of the three casts. (© Yiyun Kang)

I then used real-time surface-mapping software, MadMapper, to merge the separate animations. In *CASTING*, MadMapper created virtual surfaces, assigned moving images to them, and projected them onto the real surfaces of the three casts. Consequently, the entire process demonstrates that *CASTING* was developed in tandem with the investigation into the contextual and formal features of the chosen projection surface and space. To achieve my intended result, I gave equal consideration to the historical context of the Cast Courts and the physical conditions of the site and three casts.

Analysis

As seen in Fig. 4, the three projections intervened in the Casts without physically altering them. This integration of the projected moving images and site was enabled by my refusal to use a canonical screen circumscribed by a rectangular frame. Instead, I augmented the surfaces of the three casts by using them as projection surfaces.

Andrew V. Uroskie argues that screen-based projected moving-image works have two different places: the “represented place” inside the screen and the “taken place” outside the screen (the actual location of the screen) [3]. Due to the rectangular screen that demarcates the two discrete sites, the represented site and the exhibited site cannot be integrated. Anne Friedberg writes that the screen’s frame marks a separation—an “ontological cut”—between the view contained within the frame and the outer space [4]. In this system, a frame draws a boundary that divides the real world from the world of moving images. Distinctively, *CASTING* does not bring a viewer’s gaze to a separated reality contained inside a screen. Rather, it incorporates the surfaces of the volumetric casts for projection and thus merges with the surrounding environments.

As the production process shows, *CASTING* is conceptually and formally integrated with the specificities of the projected surface and surrounding space. This character is reflected in the 3D-rendered moving images created for *CASTING*. It is useful to visit the term “indexicality” in understanding this. In the context of photography and cinema, indexicality has been regarded as the guarantee of film’s privileged relationship to the real, or to referentiality [5]. In this perspective, “digital” is regarded as an increasing threat and has even been announced as the “death of cinema” [6] that erodes the very nature of filmic and electronic moving images anchored in indexicality and claims of truth because digital technology can create perfect photographic credibility without real footage [7].



Fig. 4. *Casting*, 2016. Installation view. (© and Photo: Yiyun Kang)

In contrast, I found that *CASTING*'s 3D digital animations established a distinguished type of indexicality. As seen in Fig. 3, the abstract sequence itself does not contain a reference to the real world outside of the screen. However, the animations are particularly responsive to their screens—the three casts as projection surface. In this system, rather than finding the indexical reference in the outer world, the screen itself becomes an index for moving images. This indexical relationship between the casts and animation originated from my creative intention, which was to “cast the casts” through the projected moving images. To “cast,” by definition, is to “shape metal or other materials by pouring it into a mold while molten.” I cast the casts through projected light and shaped them by superimposing structural digital moving images onto them. As a result, the 3D animation in *CASTING* does not discard the notion of indexicality in moving-image works. Rather, it introduces a novel type of indexicality in digital moving-image works by opening up a conceptual and formal dialog between the moving image and its screen.

As a result, this structural sequence transformed the narrative of the casts. Trajan's Column, for example, depicts a continuous narrative of the Dacian Wars. The pictorial narrative spirals along the column in a single frame. The Shreyer-Laundauer monument follows the serial narrative structure of a triptych. In a triptych formation, thematic importance rather than chronological order determines the centrality within the scene. In contrast, *CASTING*'s structural moving images transformed the continuous narrative of these casts into a spatiotemporal narrative by adding a durational dimension to the space. Therefore, while the projectors were running, projection surfaces (casts), moving images (structural sequences) and space (the Cast Courts, Gallery 46A) formed an inextricable relationship. They simultaneously supported *CASTING* as a whole in dramatizing the original space and transforming it into a temporally augmented space by superimposing the virtual space onto the real space. If either of these constituents had not been linked, the intended installation could not have been achieved.

Seen in this light, *CASTING* can be aligned with James Turrell's notion of “viewing chambers.” This term underscores how a viewing experience can be configured spatially, not as “looking at” but as “looking into” [8]. “The surfaces turned into chamber, became habitable space” in Turrell's light installation [9]. In this view, to use Giuliana Bruno's description, *CASTING* engenders a “projective environment” mediated by the surface through the projected moving image that turns “the art of projection [into] a durational, relational experience that is materially sited” [10] (Fig. 5).

Acquisition

CASTING was acquired by the museum in September 2017. Since this was the V&A's first purchase of a projection mapping installation piece, there were several issues to resolve. According to V&A curator Dr. Rosalie Kim, who led the acquisition process, the primary reason for this purchase was because “*CASTING* is a projection mapping (new territory for the Museum) specifically designed for the V&A's collections, engaging the audience by its strong immersive qualities despite using complex digital techniques and logistics” [11].

Due to the complex technical requirements of this project, we established a detailed manual for its installation and preservation and considered alternatives to prepare for future practical and mechanical problems. Execution issues were also prioritized in the discussion. For example, we decided that the particularities of the hardware and file formats used in the real exhibition can be modified following technological obsolescence as long as the outcome meets the artist's requirement. Additionally, I provided a technical demonstration of the mapping process to the curators involved in the acquisition process to give them a basic understanding of projection mapping installation work so that they can adjust their fundamental knowledge even after the employed techniques become unavailable.

Beyond these technical matters, the more significant concern was the conceptual aspect of the project. As such, the critical issue was to find the best way to preserve this nonmaterial, ephemeral projection mapping installation without losing its conceptual essence that is specific to the contexts of the museum's collections within the Cast Courts. Subsequently, the V&A decided to collect the entire process of this work, from the first stage to the final one. The purchased package included hand drawings, computer-drawn diagrams and sketches, virtual 3D models, physical models, final digital files for the exhibition (animation and sound files), and documentary materials such as photos and films (Fig. 6). The work of wrapping artist Christo is useful in understanding this outcome. The drawings and photographic collages that accompany Christo's real installations are not merely witnesses to or post-products of his works' existence; rather, they are formative constituents that collectively complete the works. He has described his projects as having two distinct periods—the “software” period and the “hardware” period—and explained that the software period is important because it is “exactly the moment when the project exists in the drawings as an expedition” [12]. Even though the tool is different, *CASTING* similarly includes a “software” stage that was demonstrated in multiple formats, as detailed above.

Therefore, the V&A's acquisition identified that both the final exhibition materials (hardware stage) and the complete developmental cycle (software stage) were accepted as inseparable entities for the optimal preservation of the project. The course of the acquisition showed that the conceptual part of the work and the employed technologies cannot be detached because together they offer technical and conceptual support for *CASTING*. The use of software applications equipped me to investigate the creative connections between



Fig. 5. Casting, 2016. Installation view. (© and Photo: Yiyun Kang)

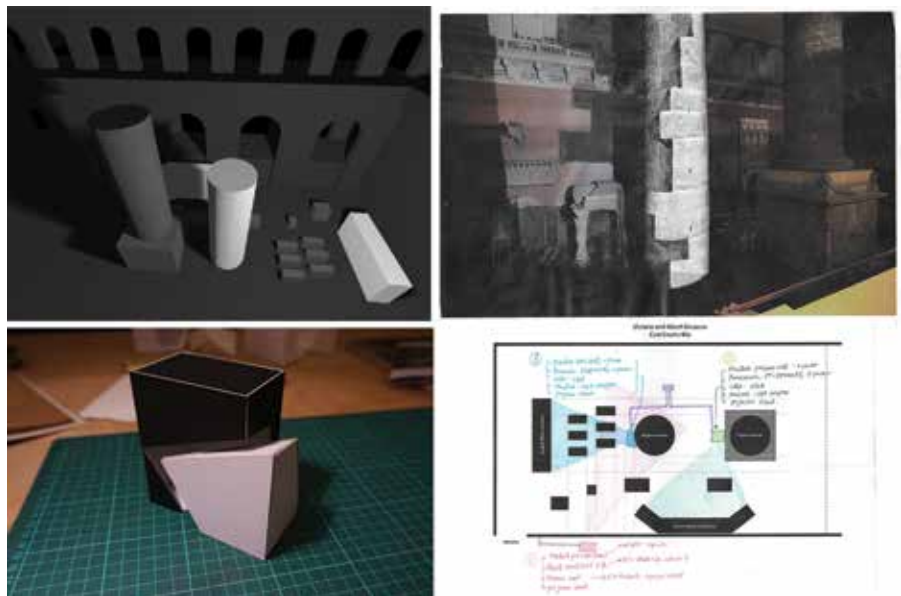


Fig. 6. Selected image from the final collection package: (clockwise from top left) 3D modeling image, sketch, installation diagram, physical model. (© Victoria and Albert Museum. Photo: Yiyun Kang.)

moving image, projection surface and surrounding space and thereby informed an inextricable relationship with the space. As Kim explains,

Acquiring the entire process allows a deeper insight in the thinking, designing and making process behind the artwork, showing the fine balance between drawings, writings, physical models, digital sketches and coding. As a museum of art and design, this part is of great interest for both curators and audience alike [13].

This acquisition demonstrates a model for future cases of archiving, preserving and documenting projection mappings and similar types of work. As detailed, technical and conceptual concerns were raised during the process of acquisition. Similar and even more challenging issues have arisen across the digital field, so this acquisition was an opportunity to face these issues properly, in a collective way, through discussions within the museum. This project would have not been possible without the help of people at the V&A and Samsung's sponsorship that had supported my residency, exhibition and acquisition.

References and Notes

Link to the video documentation of *CASTING*: <www.yiyunkang.com/casting/casting_exhibition.html>

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13. Christo [12].