

# Between Material Permanence and Digital Evanescence. 3D Projection Mappings during the Festivals of Cluj

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3D projection mappings have become highlights of city festivals in Cluj.<sup>1</sup> Based on the aesthetic and symbolic dichotomy of light and shadow, these installations create an experience of augmented reality situated at the juncture of the urban space of the city and a virtual environment. This paper investigates from a phenomenological perspective the relationship between the physical materiality of the built architectural heritage of Cluj and the non-material, ephemeral digital space emerging through 3D projection mappings. As such, it distinguishes and unravels two relevant aspects of the complex experience generated by these mappings: the cultural dimension of self-representation expressed and perceived within augmented urban spaces of the city, and the specificities of bodily perception in conjunction with the aesthetic qualities of the observed case studies. It is the hypothesis of this paper that these ephemeral artworks reflect hidden traces of the socio-cultural landscape of Cluj and are instruments of marking ethnic identity within both architectural and digital space. Regarding the phenomenological aesthetics of these installations, the paper uses Gilles Deleuze's idea of tactile optical spaces<sup>2</sup> and the example of Moholy Nagy's *Light Space Modulator* to investigate the perceptual characteristics of these presentations.

## Cultural Perception during 3D Projection Mappings in Cluj

While in Bucharest, capital city of Romania, there is a rich history of 3D projection mappings, iMap being an annually held festival dedicated to the subject, in Cluj these installations were always devised in the context of a festival. Almost all of the 3D projection mappings of Cluj in exterior urban places were mappings of historical monuments (Fig.1): Matthias Corvinus House (Architectural Days, 2011, Historical Cluj Days, 2016, Matthias Days, 2018,) Bánffy Caste in Bontida (Bánffy Castle Days 2011, 2013, 2014), Old Casino of Cluj (Cluj Never Sleeps, 2013), National Romanian Theatre (Romanian Centenary celebrations, 2018), Romanian National Bank building, Sebestyén Palace (December 1<sup>st</sup> celebrations, 2019), Saint Michael's church (Hungarian Cultural Days, 2016, City Days, 2018), Student House (City Days, 2011), Clujotronic (2016).

3D projection mapping presents many similarities to silhouette art and shadow theatre, in the sense that it creates a spectral play between shadow and light on a physical surface. The particularity of 3D projection mappings is the architectural quality of this surface. Silhouette art, shadow theatre, and 3D projection mappings all operate creatively with transparency and the relation between what parts of the image are represented, what parts are hidden, what are

1 Cluj (also known as Cluj-Napoca) is a secondary city in Romania and the capital of the historic region of Transylvania. It has a rich built heritage dating from the late period of the Austro-Hungarian Empire, a long tradition of Hungarian culture, and a substantial Hungarian minority.

2 Gilles Deleuze, "Spinoza: The Velocities of Thought. April 24, 1985," accessed September 5, 2021, <https://deleuze.cla.purdue.edu/seminars/spinoza-velocities-thought/lecture-08-0>.

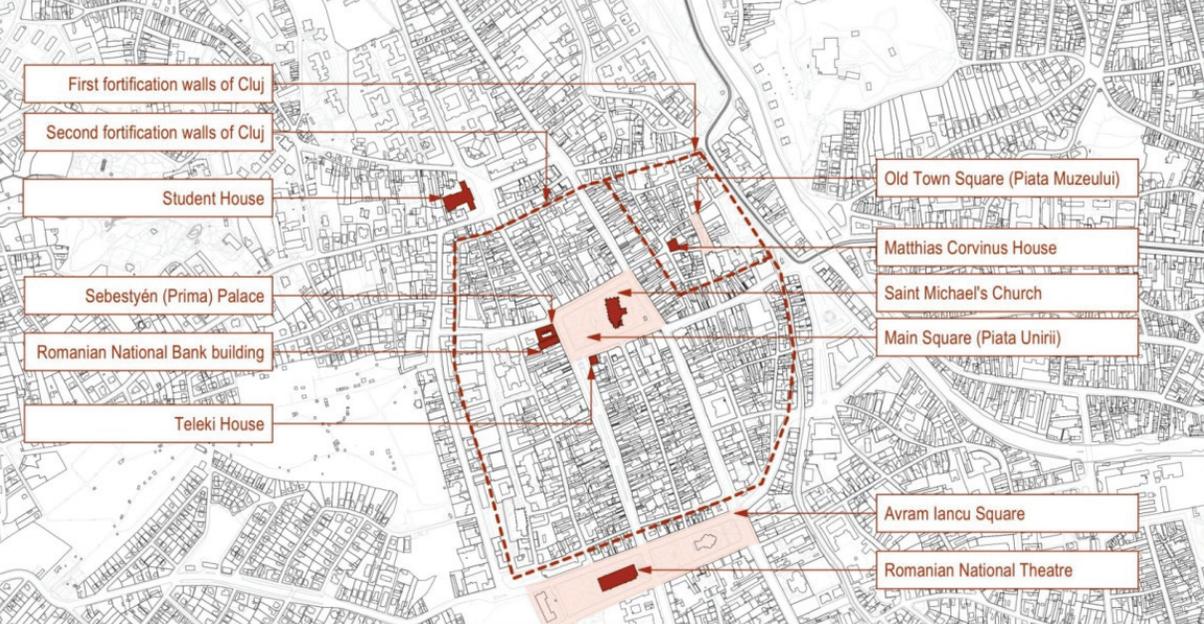


Fig. 1: The map of urban space 3D video mappings in Cluj.

Fig. 2, 3, 4: 3D projection mapping of the Romanian Opera building in 2018.

masked, what are manipulated in order to appear as something else. A shadow is “a spectral trace of subjectivity.”<sup>3</sup> A silhouette, a shadow is an abstraction of an image into its subjective essence; it is a concentration of the fundamental characteristics of the image in a way that it becomes a representative symbol of the original image.

Symbolically, the play between light and shadow represents the binominal aspect of the visible and the hidden, of reality and its abstract representation. In the case of the 3D projection mappings of Cluj these symbolic abstractions are represented in two ways. Firstly, in these cases the building itself is reduced to its symbolic value “taking advantage of the iconic status of the heritage”<sup>4</sup> and the *genius loci* of the place playing a significant role. Thus, in this regard historical heritage becomes an icon, a monument, a sign, a symbol subordinated to the scenography created by the consumerist setting of the festival. In the dichotomy of light and shadow the building appears a mere shadow, a silhouette to support the new media presentation. This is best exemplified by the 2018 video mapping of the Romanian National Opera (Fig. 2, 3, 4) designed by Mindscape Studio for the Romanian centenary celebrations. The animation that was projected on the building merely used the shape of the building without actually interacting with its architectural topology. In most of the cases of projection mappings in Cluj the buildings were reduced to their iconic silhouettes, having a symbolic value on a cultural level. The Romanian National Opera, as a free-standing building, accentuated the presentation and gave it an added monumentality, while presentations such as on the building of the Romanian National Bank were less spectacular due to their less iconic silhouette.

Secondly these installations operate with symbolic content in a very concrete fashion: all projection mappings projected emblems, logos, symbols of the organizing festival, cultural institutions, cultural symbols of ethnicity, and of themes related to the festival. It was the craftsmanship, the ingenious use of computer programming they displayed that was in fact the real subject of this type of art. They were manifestations of the exploration of different technologies rather than the creators of content.<sup>5</sup> The digital shadow play superimposed on the existing architectural context of the building also revealed aspects of the relationship

3 Lisa Saltzman, *Making Memory Matter* (Chicago&London: University of Chicago Press, 2006), 56

4 Daniel Schmitt, Marine Thébault, and Ludovic Burczykowski, *Image Beyond the Screen, Projection Mapping* (London: ISTE Ltd and John Wiley & Sons, Inc., 2020), 194.

5 Lev Manovich, “Lev Manovich, The Death of Computer Art,” 1996 (revised 2001), accessed September 24, 2021, [http://absoluteone.ljudmila.org/lev\\_manovich.php](http://absoluteone.ljudmila.org/lev_manovich.php).



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Fig. 5, 6: 3D projection mapping of Saint Michael's church for the Hungarian Cultural Days.

between urban space and national identities within the city and aspects of symbolical spatial appropriation and spatial conquest. This was most striking in the case of the Hungarian Cultural Days and the City Days festivals, that both had 3D projection mappings of the Saint Michael's church on the Main Square.

The first installation (Fig. 5, 6) was created by Bordos László Zsolt and it was commissioned for the 700<sup>th</sup> anniversary of Cluj as a free royal city and celebrated Hungarian culture. The second was created by Mindscape Studio and celebrated the centenary year of Romania, the 100<sup>th</sup> anniversary of the unification of Moldavia, Muntenia and Transylvania. This event was marked by a series of projects, artworks, among them a 3D projection mapping on the Saint Michael's church (Fig. 7, 8, 9). From a cultural perspective, the 3D projection of the symbols of the centenary carried different and ambivalent meanings for the Romanian and Hungarian ethnicities of the city due to the differing affects, attitudes towards the centenary celebration. While for the Romanians 2018 marked a year of celebration, for the Hungarians it represented an anniversary in which the country lost more than half of its territory to neighboring countries after the First World War.

The aim of the City Days was to unite the city's various communities, to connect with the population of different urban structures. On the anniversary of the centenary the City Days were a proclaimed celebration of the concept of multiculturalism with the motto "creating relationships." The choice of the Saint Michael's church at the historic Main Square of the city as an architectural object for the presentation was meant to underline the together-ness of the city, to celebrate a unified 100-year community. However, the act was interpreted as a symbolic spatial conquest by some Hungarians. From a Hungarian perspective the 3D projection of centenary symbols on a church symbolically associated by them with Hungarian culture, can be described as a sign of the dominance and symbolic oppression by the Romanian culture in the context in which the Romanian-Hungarian ethnic representations within the city are characterized by the relationship between marked and unmarked identity. Norbert Petrovici argues that in the first decade after communism, Mayor Gheorghe Funar addressed the people as "we Romanians" thus "Romanian was the normal, the unmarked, while the Hungarian became an exceptional side."<sup>6</sup> This correlation is still valid today, and is reflected in the relationship between the City Days and the Hungarian Days. In everyday discourse many Hungarians of Cluj associate the City Days with the Romanians instead of the city while the Hungarian Cultural Days are specifically a Hungarian event. The City Days Festival represents the contemporary political agenda while the Hungarian Cultural Days are the representation of an ethnic minority.

6 Norbert Petrovici, "Articulating the Right to the City: Working Class Neo-Nationalism in Postsocialist Cluj, Romania," in *Headlines of nationalism, Subtexts of Class*, ed. Don Kalb and Gábor Halmaj (New York and Oxford: Berghahn Books, 2010), 69.



Fig. 7, 8, 9: 3D projection mapping made of Saint Michael's church for the City Days.

Considering the spatial appropriation aspect of these installations and the signification of the play of light and shadow, the genre can be associated with graffiti art. Graffiti operates with a similar visual language as projection mappings to create spatial illusions in order to add a virtual dimension to space. Graffiti tags represent a specific gang or person. Tagging, signing a building is a gesture of appropriation. The projection of logos and emblems during a projection mapping on a building is a similar gesture of tagging and appropriation (such in the case of many 3D mappings of Cluj). Besides being the representation of taking pride in the achievements of the city it can also be considered a gesture of identity and cultural marking upon the built environment similar to graffiti tagging or signing. Thus, 3D video mappings can be considered a form a virtual graffiti. They are contemporary tools in the communication apparatus of institutions, city administration to convey ideas and political messages.

Similar to the layers in silhouette art or shadow theatre, ethnic representation within urban space through making a cultural mark on a building reveals a clashing of superimposed layers of cultural contexts appealing to ethnic sensibilities. In this regard – just as the yin and yang of light and shadow – 3D projection mapping brings together conflicting aspects of ethnic

representation. A shadow represents the unconscious, the hidden but defining aspect, while light is the conscious, rational aspect of the self. Regarding the use of a silhouette in the case of a minority, Saltzman argues that “the silhouette emerges as the oblique means of representing and encountering traumatic history.”<sup>7</sup> However, in the case of the Hungarian ethnicity the projection mapping on the Saint Michael’s church and the play of light denoted the aspiration of an ethnic minority to be seen, to be represented, to be brought to public urban consciousness.

### Bodily Perception – the Hapticity of 3D Projection Mappings of Cluj

Schmitt and his colleagues argue – referencing Jean-Louis Baudry – that during projection mappings the viewer participates in a “simulation of the world that has no connection to reality”<sup>8</sup> and everyone participates in a collective “virtual hallucination.”<sup>9</sup> William Gibson describes the same concept in this way: “Cyberspace. A consensual hallucination experienced daily by billions.”<sup>10</sup> In cyberspace and in the case of spatial augmentations of 3D video mappings the participant enters the hallucination willingly, accepting the altered laws of the virtual world and on a community level it is a collective experience. In William Gibson’s cyberpunk novel *Neuromancer* cyberspace is accessed only with the consciousness of a person, without the body, similar to the case of video games or contemporary VR technology. In the case of 3D projection mappings visual, auditive, haptic sensations are altered, conjured up by the installation. These augmented spaces define a new type of perception, a virtual hapticity, experienced by the viewer collectively, similar to the spectator of open-air cinema or theatre.

Virtual hapticity is described by Gilles Deleuze as a tactile-optical space. In the 8<sup>th</sup> installment of his lecture series entitled *Spinoza: The Velocities of Thought*, he differentiates between purely optical spaces and tactile-optical spaces. He observes that even in the shadows an object retains its shape and form. “In fact, if the object in shadow keeps its form, it is obviously through a tactile connection (...) Hence the reign of the contour, in particular, is a tactile referent in an optical world.”<sup>11</sup> 3D projection mappings are tactile-optical spaces in this sense, they are situated at the intersection between material and immaterial, between ephemeral and permanent. They appear in-between materiality and temporality.<sup>12</sup>

The “projection makes it possible to create direct contact between intangible and tangible data. Paradoxically, it is not the hand that touches the objects, but the image, the representation itself, which acquires this double haptic sensitivity by the way it meets the surface.”<sup>13</sup> It is “the medium as a layer of light that touches the surface, giving a tactile dimension to the image.”<sup>14</sup> In the case of Cluj this hapticity manifested itself in a very concrete way in the case of the projection mappings of the group Visual Skin: at the projection mapping of the Bonțida Castle in 2011 and at the projection of the Matthias Corvinus House in 2012 (Fig. 10, 11).

In the first case there was an animation that stretched pastry dough across the façade of the castle. At the Matthias Corvinus House there was a female hand that traced along the façade and placed the cut-out shapes of windows onto the façade. The building was treated as a toy-like object. There was an engagement with the building both as a concrete and as a virtual object. The building was appropriated by the contemporary digital culture in which the 3D projection was created. In cyberspace the juxtaposition of pastry dough and the façade of

7 Saltzman, *Making Memory Matter*, 57.

8 Schmitt, Thébaud, and Burczykowski, *Image Beyond*, 39.

9 Ibid.

10 William Gibson, *Neuromancer* (New York: ACE Book, 2000), 51.

11 Deleuze, “Spinoza.”

12 Schmitt, Thébaud, and Burczykowski, *Image Beyond*, 60.

13 Ibid.

14 Ibid.

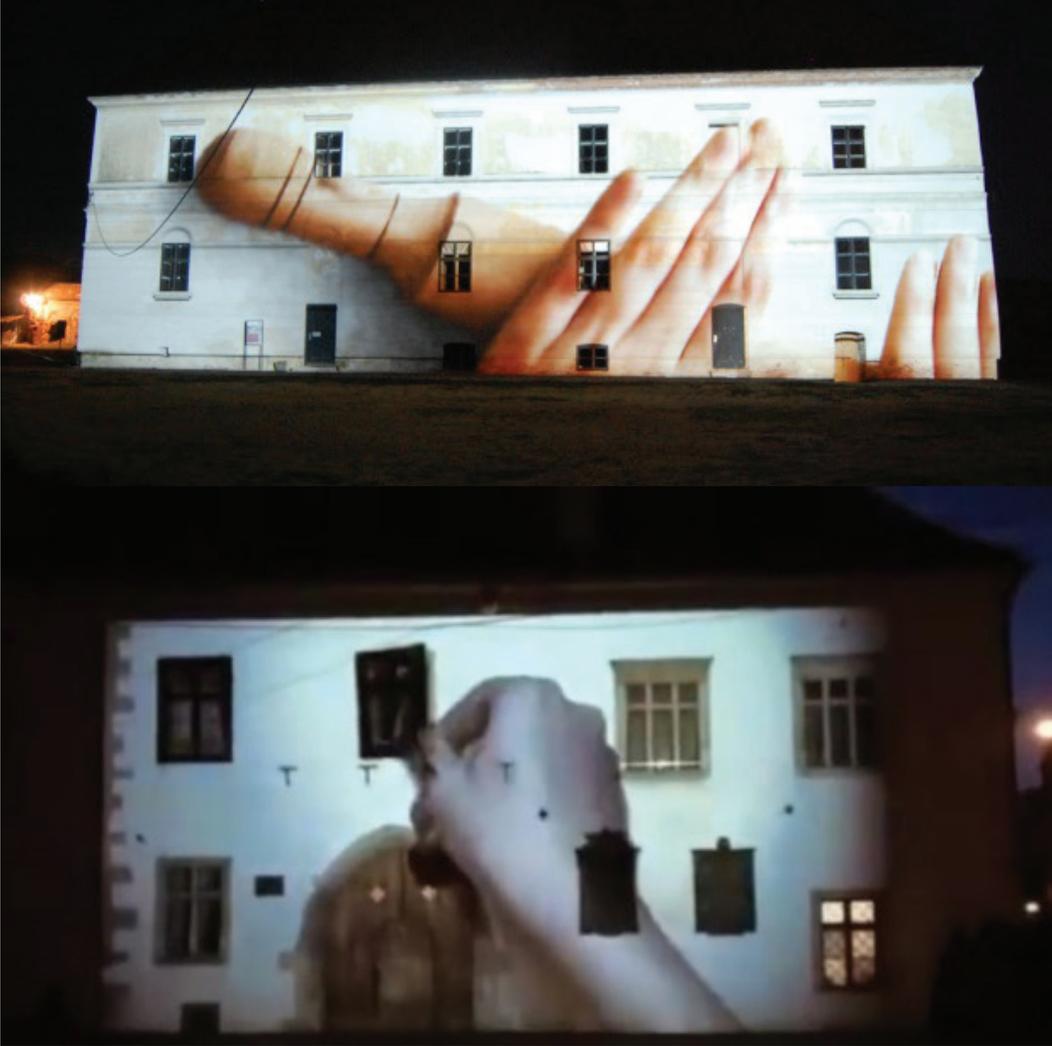


Fig. 10, 11: 3D projection mapping of Bontida Castle in 2011, 3D projection mapping Mattia Corvinus House in 2012.

a historical building is not unusual. In this world the user clicks, navigates from one place or page to another, everything is connected and juxtaposed. 3D video mapping virtually digitizes the building. Architecture becomes virtual not just visually but on a conceptual level as well. By superimposing a digital layer to the building “it reinforces the monumentalization of heritage, in the sense that it carries a heritage discourse beyond the built environment to transcend it in an interactive collective experience.”<sup>15</sup> In this regard navigation in space is no longer a corporeal exploration, rather it is a guided virtual and cultural collective navigation. This virtual navigation is depicted with the molding of the pastry dough on the façade of the building. It represents a metaphoric game for the virtual remolding, reshaping of the building. From a haptic point of view the most successful and spatially embedded projection mappings are the ones that work with the topology of the building, illuminating contours and shapes. It is this movement of the image of illuminated contours that gives the haptic illusion of the presentation. It is this play between shadow and light that brings the building alive. In these cases, the presentation explores the architecture of the building like a painter or a sketch artist would. These 3D projection mappings are the representations of an interface of a computer

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<sup>15</sup> Ibid., 178.



Fig. 12: 3D projection mapping of Saint Michael's church for the Hungarian Cultural Days.

program like Adobe After Effects or Adobe Photoshop. Lev Manovich argues<sup>16</sup> that these computer programs are also part of the contemporary digital cultural content and represent the apparatus of engagement with and creation of the contemporary cultural landscape. In these cases, new media did not merely replace the artist's canvas with architecture; architecture is not merely the supporting medium for these artworks but is an integral part of the installation.

In this respect the presentation created by Bordos László Zsolt for the Hungarian Days is the contemporary continuation of the light art and kinetic light sculptures of Moholy Nagy László. In the art of Moholy Nagy there was a symbiosis between light, shadow and a kinetic, sculptural object. In the case of Bordos, the building shaped the animation and vice versa, the appearance of the building was altered by the light projected upon it. From a haptic point of view this 3D video mapping presentation played with both the three-dimensionality of the building and the textures and topology of the façade. It presented digital effects that created the illusion of dematerialization, of parts of the building rotating, disappearing, shaking etc. The architectural

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16 Lev Manovich, *The Language of New Media*, (Cambridge Massachusetts, London England: MIT Press), 2002.

materiality and hapticity of the building were perceptually questioned when it was digitally transformed into a drawing, a sketch then into glass, stone, a liquid-like virtual texture etc.

The installation presented the topological illusion of projecting the inside of the church onto the outside main façade (Fig. 12). The virtual image layer gave the building the characteristics of a Moebius strip, similar to the Deleuzian idea of the “fold”<sup>17</sup> where the inside and the outside are connected and intertwined without spatial hierarchy. This spatial augmentation effect has its roots in the tradition of *trompe-l’oeils*, emerging as a way of connecting the materiality of the church with the hidden, imaginary dimension of the interior. Through this digital *trompe-l’oeil* the 3D video mapping technology added a fourth dimension to the three-dimensional space of the church. In this case the interior of the church was presented as the shadow silhouette upon the illuminated exterior of the church. It was a mere hint to awaken curiosity about the hidden inside enclosed by the church. The juxtaposition of the architectural elements of the inside and outside, however did not match, there was no spatial, aesthetic correlation between the two, the connection remained a mental, referential link through the abstract, symbolic form of the shadow.

On an urban scale these effects are spectacular because they bring to life an impossible reality. They present a clash between the fixed, well-known character of everyday reality of materiality, hapticity, topology and the ephemeral, changeable, surreal character of the digital world where a new texture, color, shape even place is merely one click away.

## Conclusions

Analyzing the different aesthetic and symbolic aspects of the dichotomy of light and shadow the paper investigated two main aspects of the 3D projection mappings of the historical heritage buildings of Cluj. On a cultural level it argued that these installations bring to light hidden cultural aspects of the society of Cluj and reveal characteristics of representations of ethnicity. These technologies are instruments of bringing together in a digital context contrasting representations of ethnicity and are the instruments of symbolic spatial conquest in the case of Romanian and Hungarian ethnicities of the city. On the other hand, on an aesthetic, perceptual level it argued for a new virtual hapticity that defines these presentations. These installations add a fourth dimension to the buildings and recontextualizing architecture and offer a new way of exploring space.

These buildings were chosen as subjects for these installations because of their iconic, monumental stature in physical space, for their *genius loci*, and in a new digital context they were transformed into signs, symbols and shapes (silhouettes), into mere data and referential links to an illusion similar to cyberspace.

## REFERENCE LIST:

- Bennet, Andie, Jodie Taylor, and Ian Woodward. *The Festivalization of Culture*. New York: Routledge, 2014.
- Deleuze, Gilles. *The Fold, Leibniz and the Baroque*. London, New York: Continuum, 2006.
- Deleuze, Gilles. *Spinoza: The Velocities of Thought*. April 24, 1985. Accessed September 5, 2021. <https://deleuze.cla.purdue.edu/seminars/spinoza-velocities-thought/lecture-08-0>.
- Manovich, Lev. *Lev Manovich, The Death of Computer Art [Online]*. 1996 [revised 2001]. Accessed September 24, 2021. [http://absoluteone.ljudmila.org/lev\\_manovich.php](http://absoluteone.ljudmila.org/lev_manovich.php).
- Manovich, Lev. *The Language of New Media*. Cambridge Massachusetts, London England: MIT Press, 2002.
- Petrovici, Norbert. “Articulating the Right to the City: Working Class Neo-Nationalism in Postsocialist Cluj, Romania.” In *Headlines of nationalism, Subtexts of Class*, edited by Don Kalb and Gábor Halmai, 57-78. New York and Oxford: Berghahn Books, 2010.
- Saltzman, Lisa. *Making Memory Matter*. Chicago&London: University of Chicago Press, 2006.
- Schmitt, Daniel, Marine Thébaud, and Ludovic Burczykowski. *Image Beyond the Screen, Projection Mapping*. London: ISTE Ltd and John Wiley & Sons, Inc., 2020

17 Gilles Deleuze, *The Fold, Leibniz and the Baroque* (London, New York: Continuum, 2006).

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Fig. 10, 11: Courtesy of Visual Skin.

Fig. 12: Courtesy of the festival organizers.