



Decoding the Digital Border

>>> Overlaying = ['Images', 'Spaces', 'Cultures', 'Histories']
to Find Depth in a Virtual World;



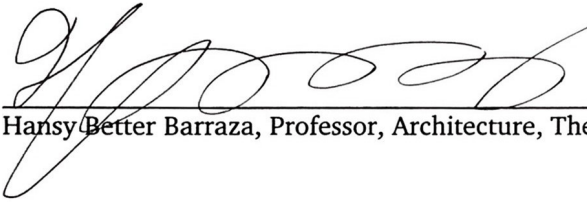
Rhode Island School of Design
M. Arch Degree Project
Gian Villarruel
2018

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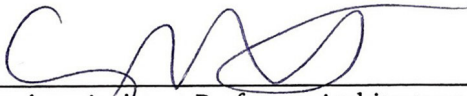
A thesis presented in partial fulfillment of the requirements for the degree Master of Architecture in the Department of Architecture of the Rhode Island School of Design, Providence, Rhode Island by

Gian Villarruel
2018

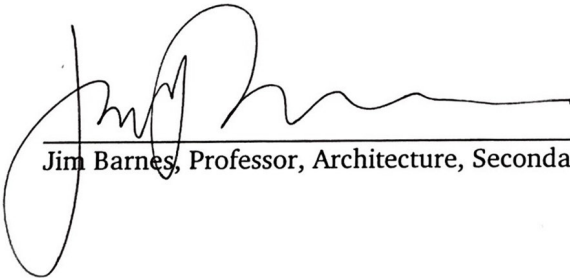
Approved by Master's Examination Committee:



Hansy Better Barraza, Professor, Architecture, Thesis Coordinator



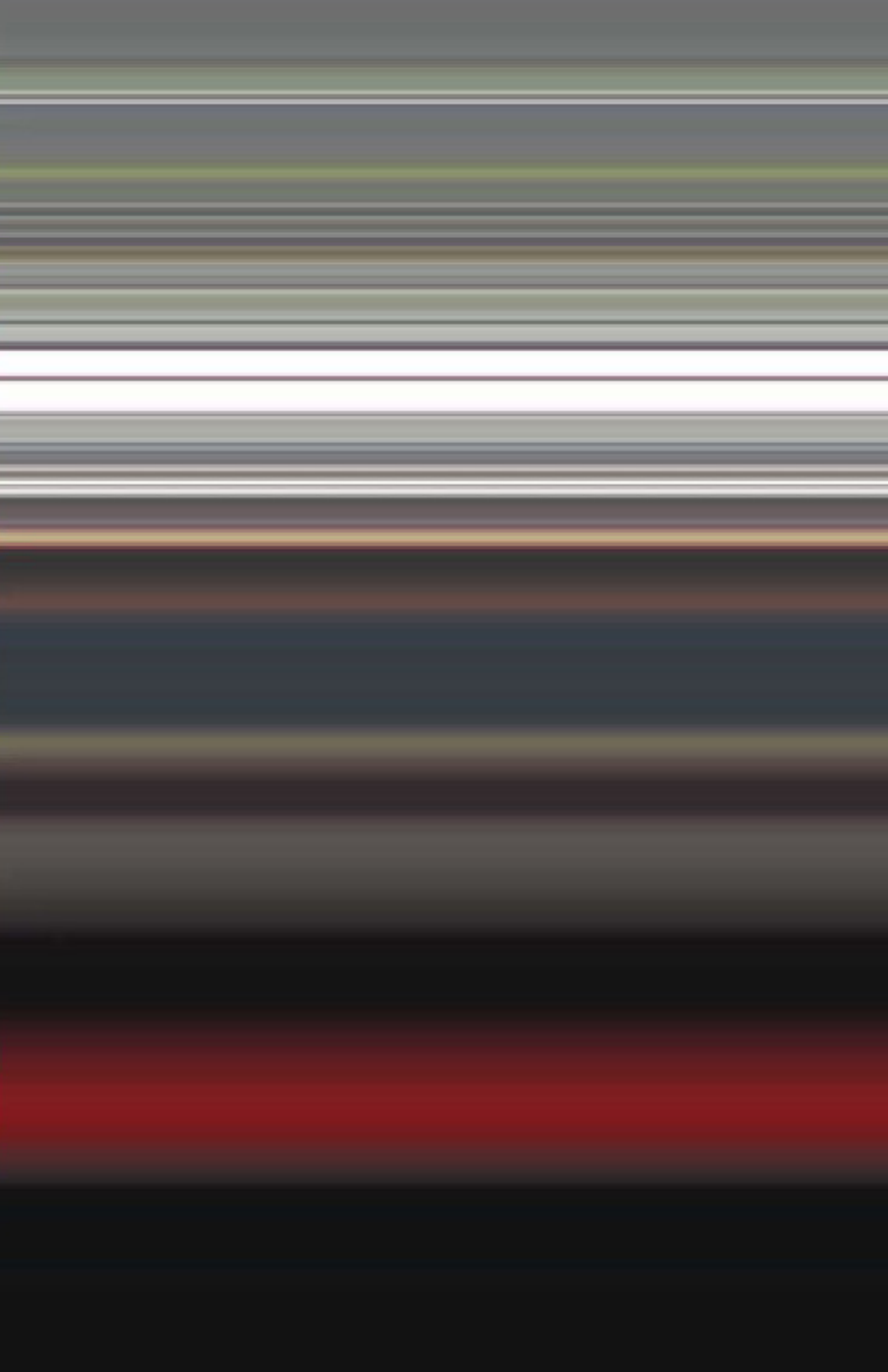
Carl Lostritto, Assistant Professor, Architecture, Primary Thesis Advisor

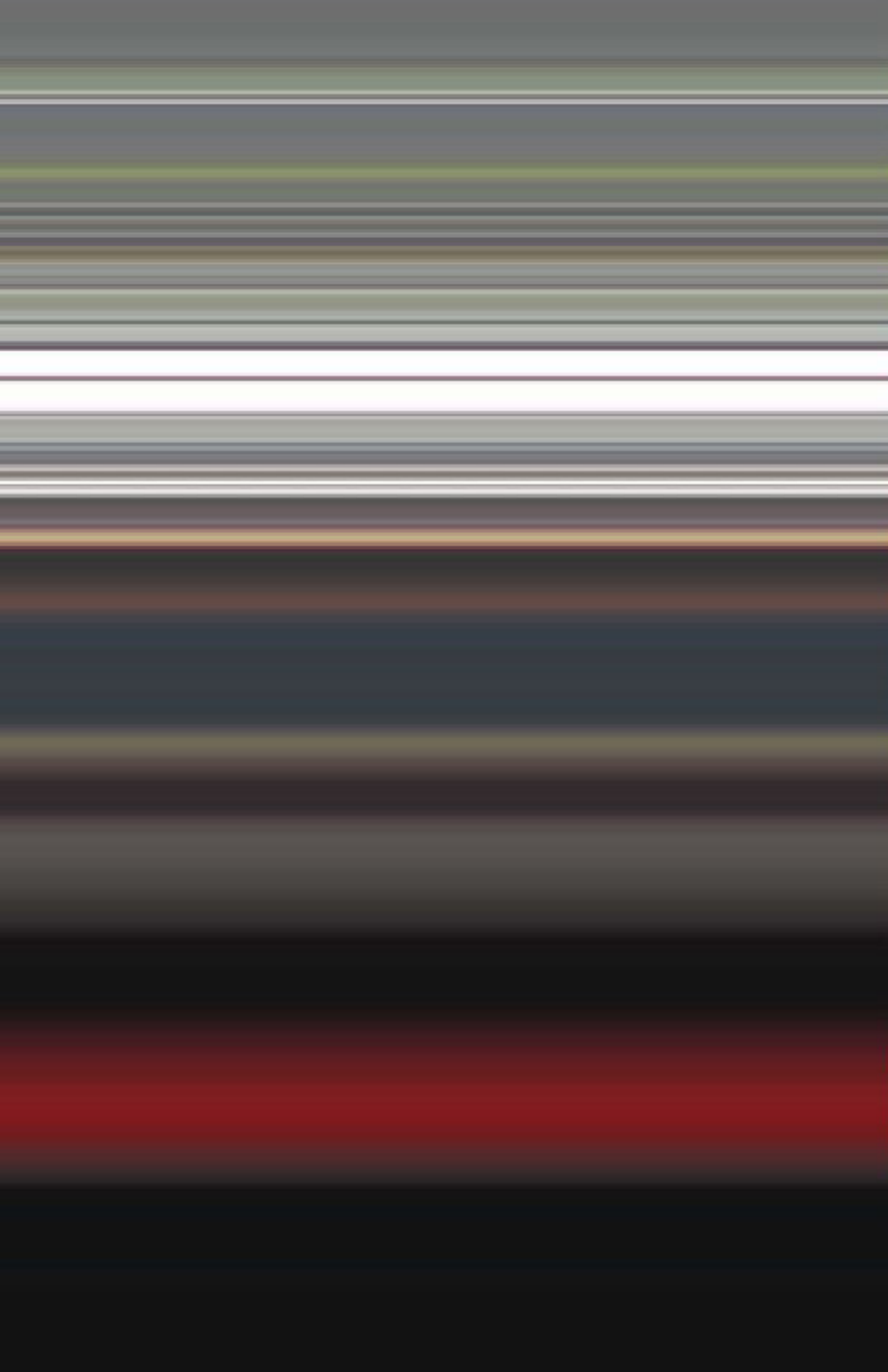


Jim Barnes, Professor, Architecture, Secondary Thesis Advisor

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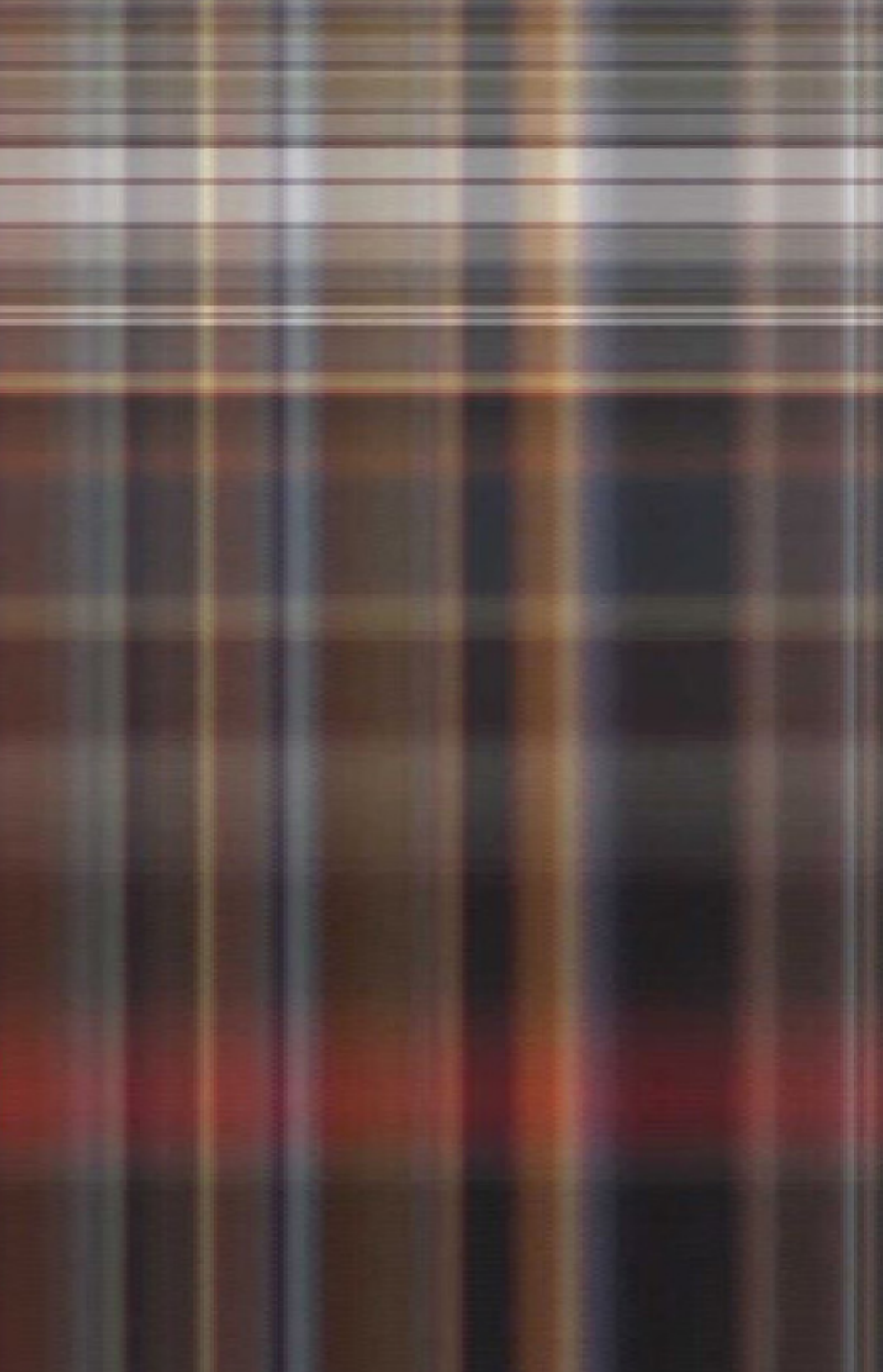


Abstract

We come to rely on computer hardware and digital software to generate and digitize the world around us and the degree of distortion latent in “street view” and public domain digital representations is rarely brought to the fore. Organized information made up of data scripts and RGB values within an intangible space have now become what many assume to be architecture. But where, between all that translation of information, does our sense of history and culture lie? What impressions remain and what memories are lost from the collective of digital representations when the only things left to define them are digital photographs and a short description on Wikipedia?

Having been raised in a Mexican-American family and a large ethnic community, I know there is a divide between the actuality of my own heritage and what has come to be represented digitally. This is especially true when it comes to the site of Chicano Park under the Coronado Bridge in San Diego. There is a legacy of activism and cultural awareness brought forth by the Mexican community that is embodied through a variety of public art and murals embedded into the concrete structure of the bridge that does not get included in 3D models of the space and only get snapshots of moments through images and photographs.

This project creates previously unseen perspectives and the misrepresentations they generate that are then built into physical constructs from digital meshes using tools such as 3D printers and stereoscopic cameras. By exploring concepts on the degradation of digital information, I manipulated and constructed impressions of depth and form using data points and RGB values as markers from static images. Images become juxtaposed with 3D models created by other humans online to bring attention to the content and history each digital manifestation fails to portray. It is that same sense of a cultural and historical misrepresentation that is realized throughout the evolution of this project.





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“Architecture is now invisible, and organizing information is referred to as architecture. The instrumentalized surface of the interface is an architecture that lies suspended between silence and the virtual. An electronic inscription of our extended and blurred bodies, incised onto an event horizon of no escape...Forever a gaze with no center. A gaze that is beyond identity, beyond body...”³ - J. Beckmann

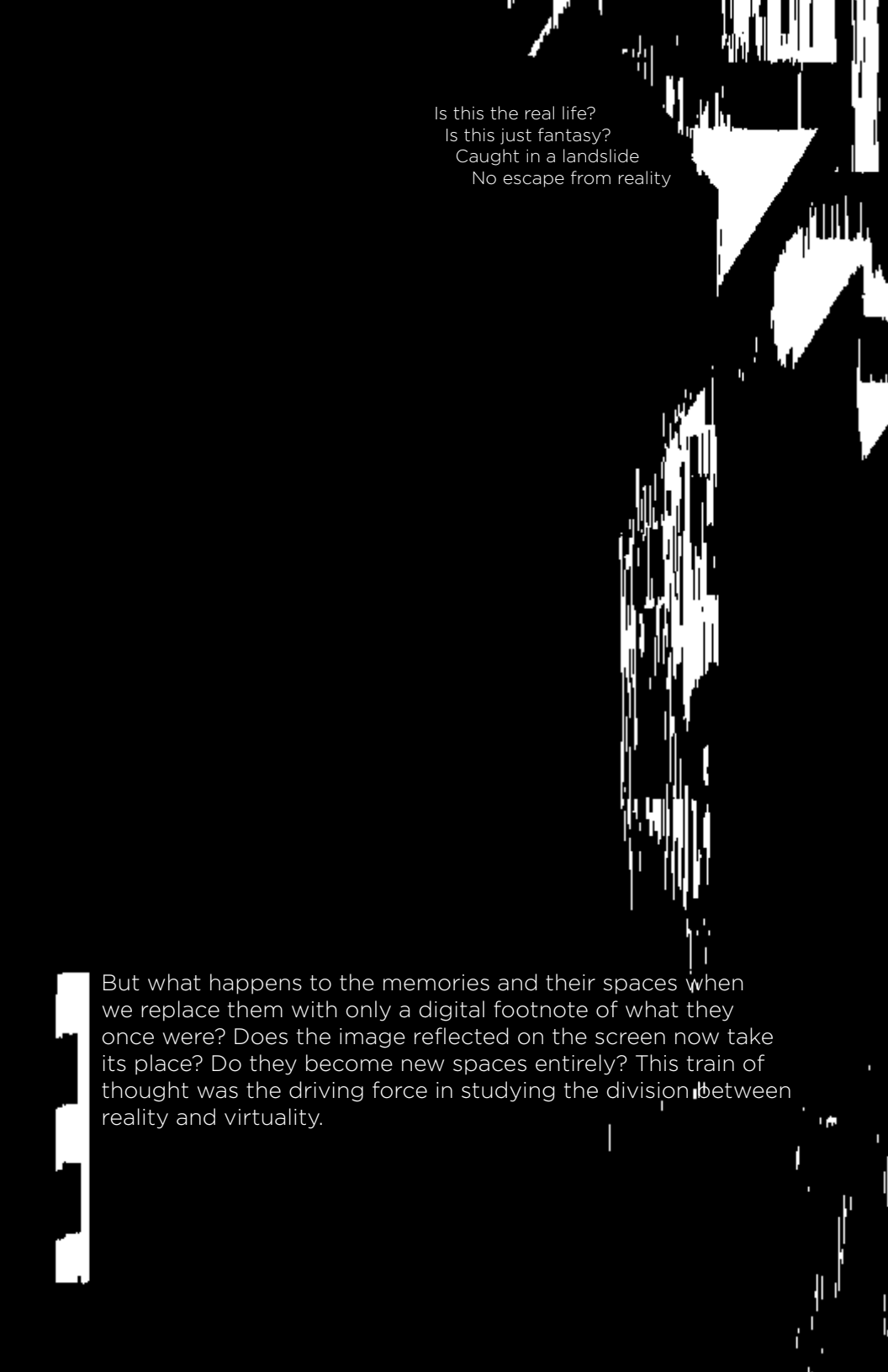
Accessing Memories





Fragments of time are all that is left. A life of experiences and places visited becoming nothing more than memories engraved in the back of our mind waiting to be recalled in conversations with a colleague or during a quiet moment of reflection. Degrading as our bodies do with every passing moment until only abstract signifiers are left of entire events. Buildings remain buildings and trees are still trees but the details in the bricks and leaves get forgotten. Leaving behind only fragments of what was once there.

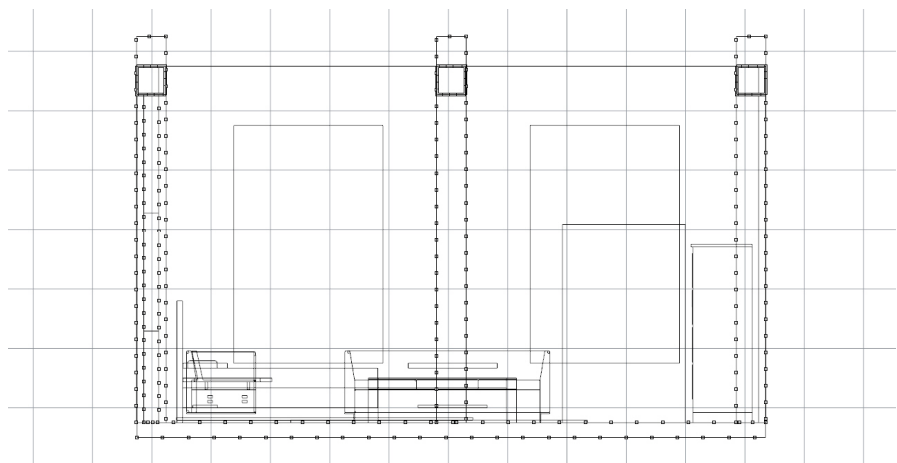
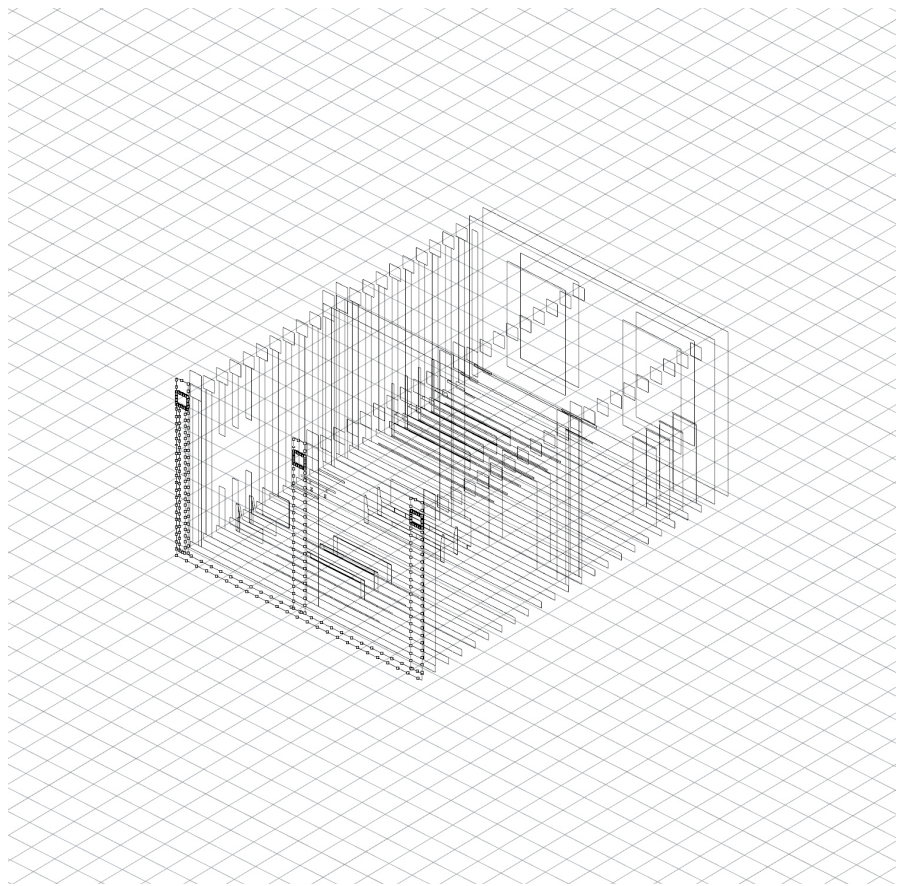
These images are no different. Archived annotations of moments we try to not forget. But where do they exist now? They have shifted from actual moments in time and got sent into a digital cloud of archives connected directly to the internet. Fragmented into bits of code and pixels ready to be called upon at the touch of a button.

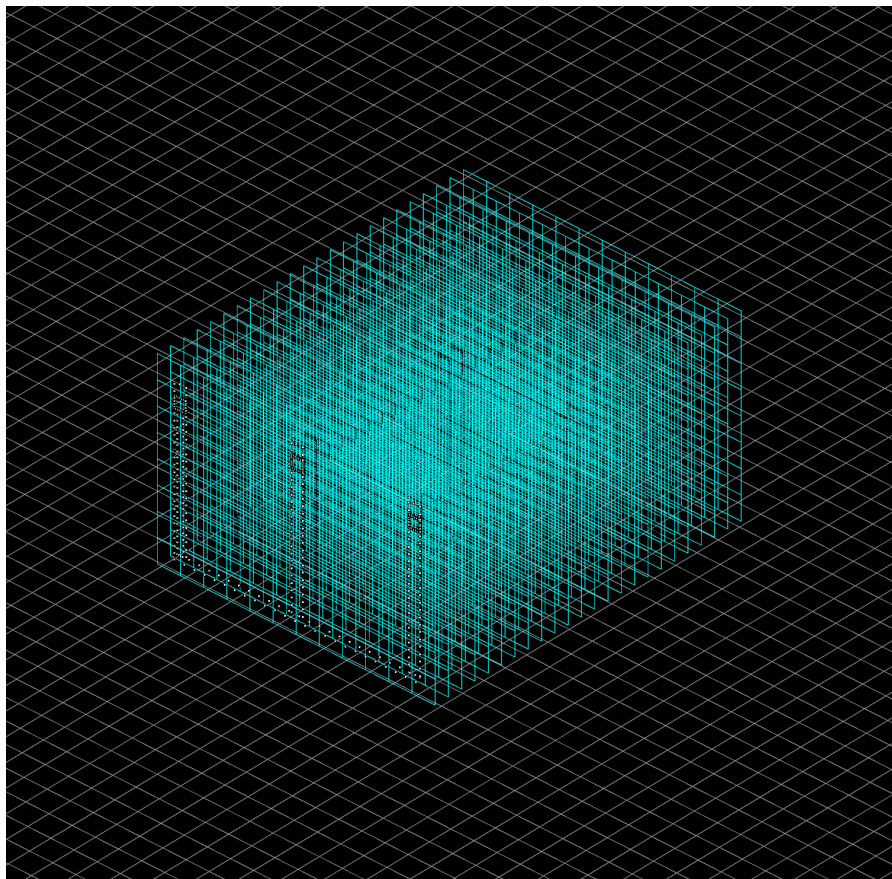


Is this the real life?
Is this just fantasy?
Caught in a landslide
No escape from reality

But what happens to the memories and their spaces when we replace them with only a digital footnote of what they once were? Does the image reflected on the screen now take its place? Do they become new spaces entirely? This train of thought was the driving force in studying the division between reality and virtuality.

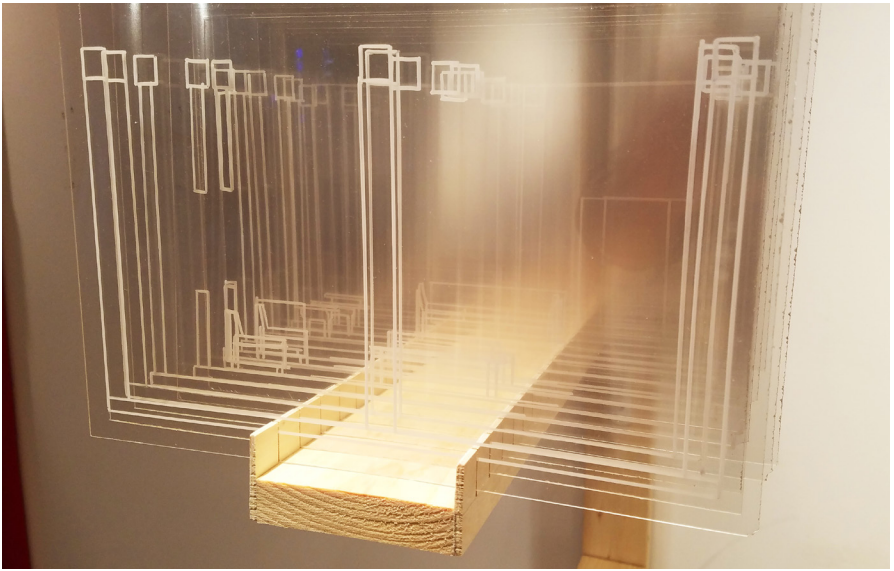






Digital space being fragments of information compiled together to create depth in real time and allowing us to comprehend what we see in a different sense than what it is. A harmony of coded pixels on a screen.

We know what a room is and therefore we distinguish the concept of a room as a room. The more layers of information added, the higher resolution of understanding we obtain. Lines of information creating mass in a digital void. Defining walls and furniture while creating the idea of a living space in relation to what our own memories of what habitable spaces are.

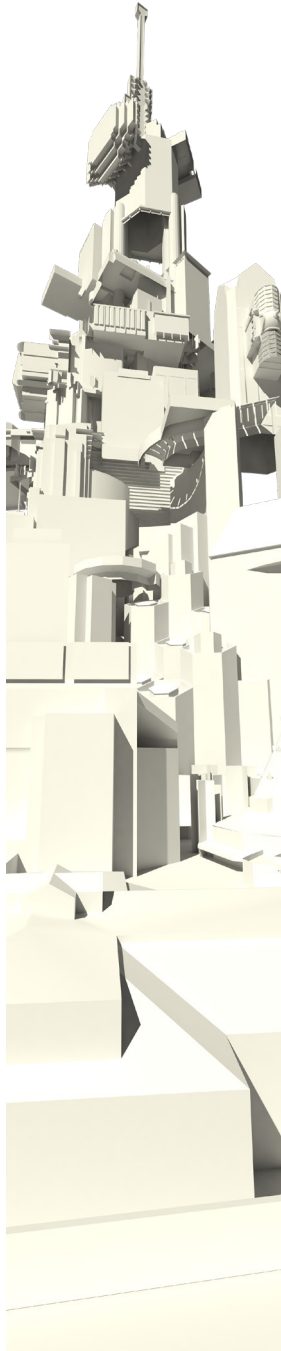


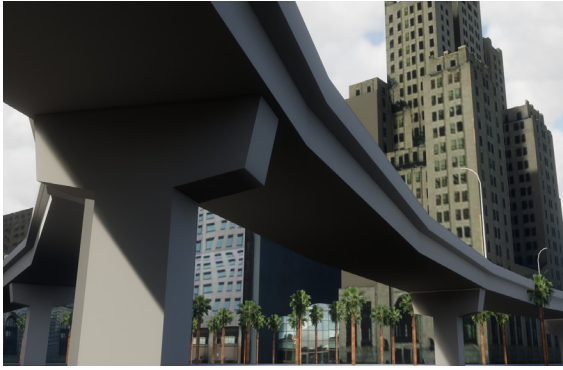
When applying the same concepts of representation within the physical world. Depth is still created when there is no actual depth and the same rules of resolution apply. Only the signifiers of a mass depicted as 3-Dimensional space.

Bed becomes chair becomes table becomes wall becomes room becomes building becomes infrastructure. Continuous like film, an architecture based on duration and flow, from the actual to the virtual, and from the virtual to the actual. Of projected and transmitted surfaces within surfaces-kernels within kernels that forever unravel and surprise. ³



Merging Realities

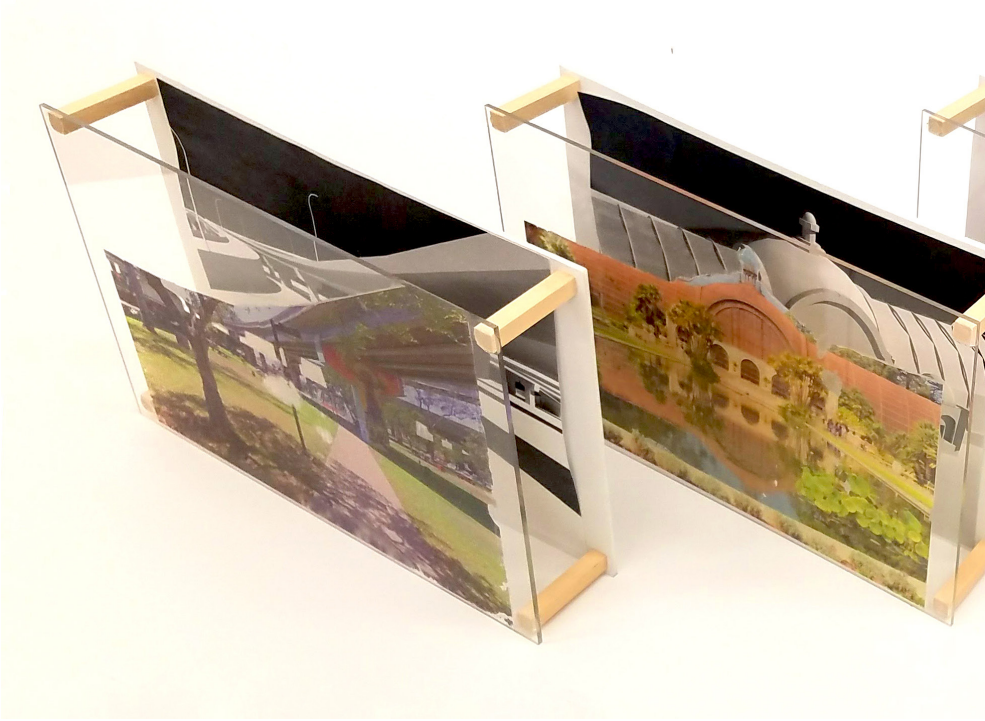


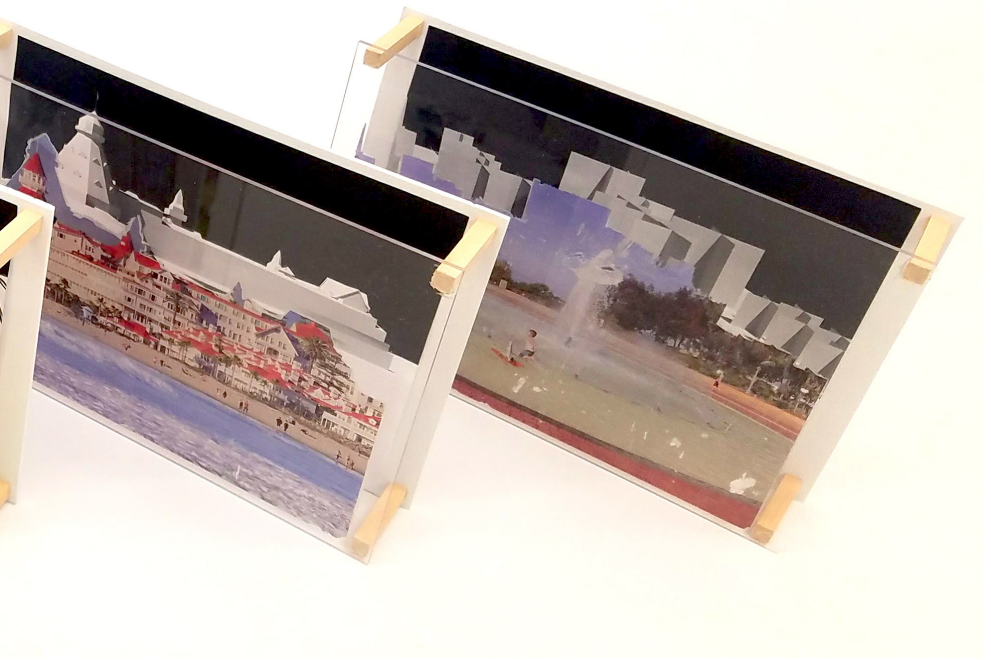


3-dimensional models that exist in the virtual world are usually characterized by their depiction of real life physical things, beings and buildings. Within the digital realm they can be manipulated in a variety of ways that can push the limits of their representation or be united together to create a multidimensional collage of model meshes.

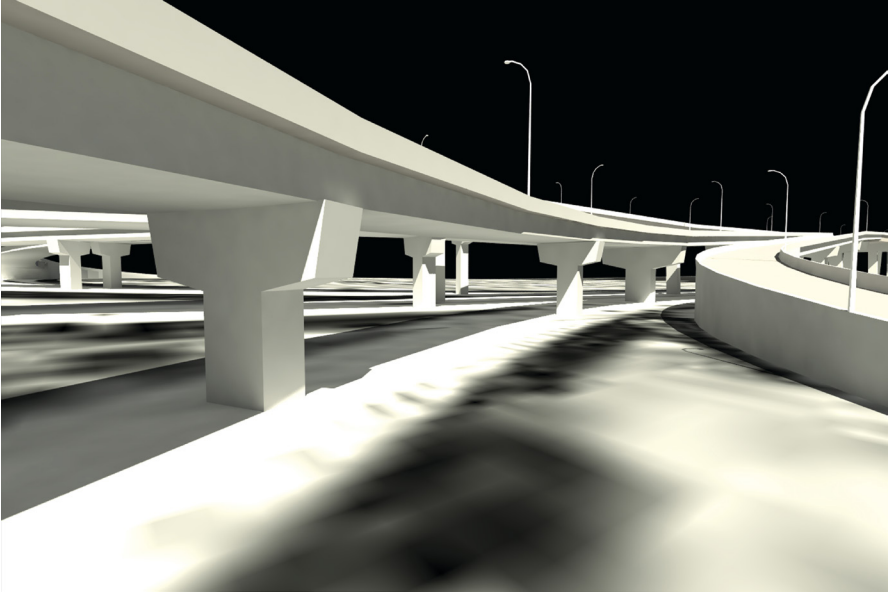
Buildings and bridges are no longer limited to their actual location but can instead be brought together to create an entire new environment that could only exist in the digital. Something that is always misrepresented, however, is the detail on the surface of their physical counterparts.

This usually gets added on as an extra layer of texture as the mesh model's skin in the form of a photograph or completely omitted and replaced by a basic model texture of brick and concrete used only to create a visual idea of the model itself.





In my research looking for architectural 3D models, I noticed a pattern of misrepresentation that occurred more likely than not in the meshes that were found. The culture of the community and the people that inhabit them are normally nowhere to be found.



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Only the structure of the bridge is portrayed but the history and work the community has put in to the site is lost.





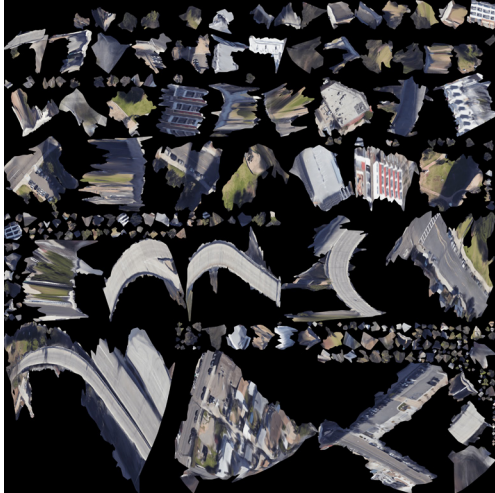
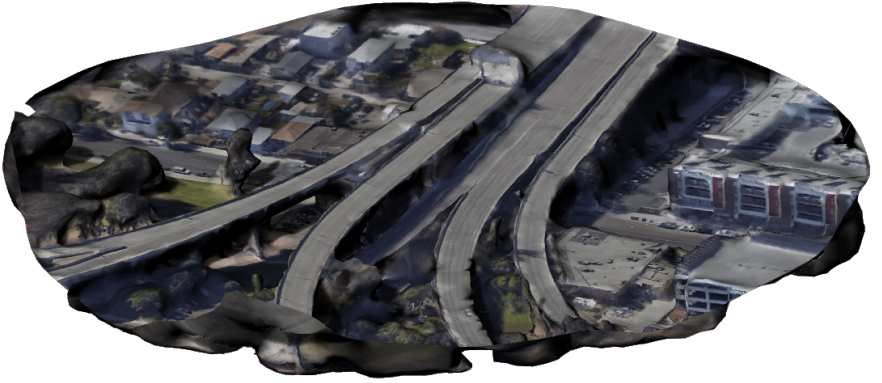
If the only thing that was important to the Coronado Bridge was the structure itself, then why is it that I only remember the landscape and the murals or art so much more vividly and hold it to a much higher degree?

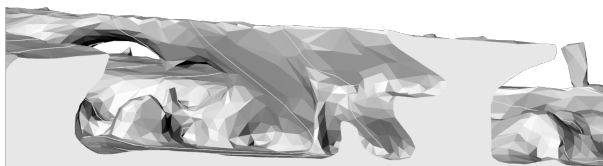
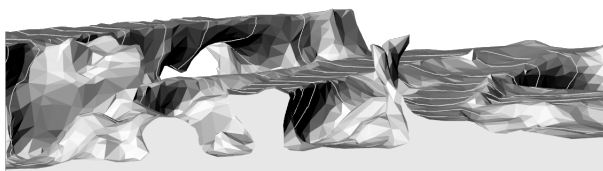
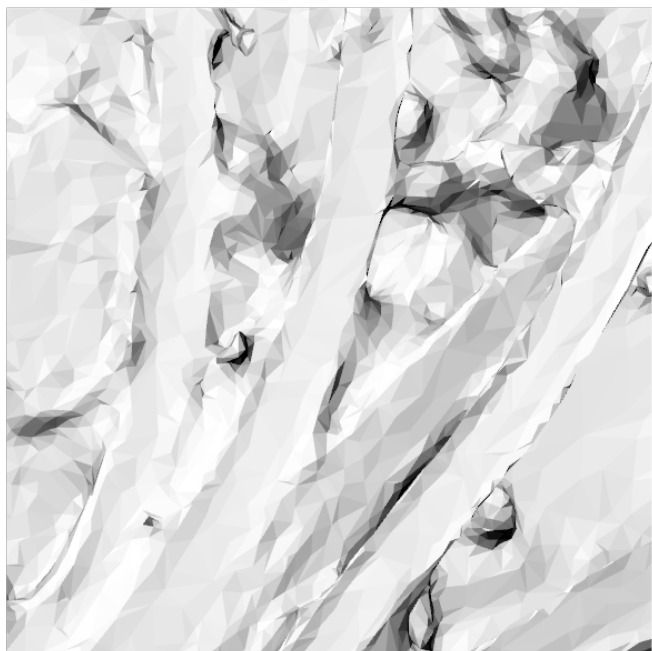
In the same notion, I wanted to see how this misrepresentation of information then manifested itself when it was translated back into the physical realm.

Materializing Falsifications

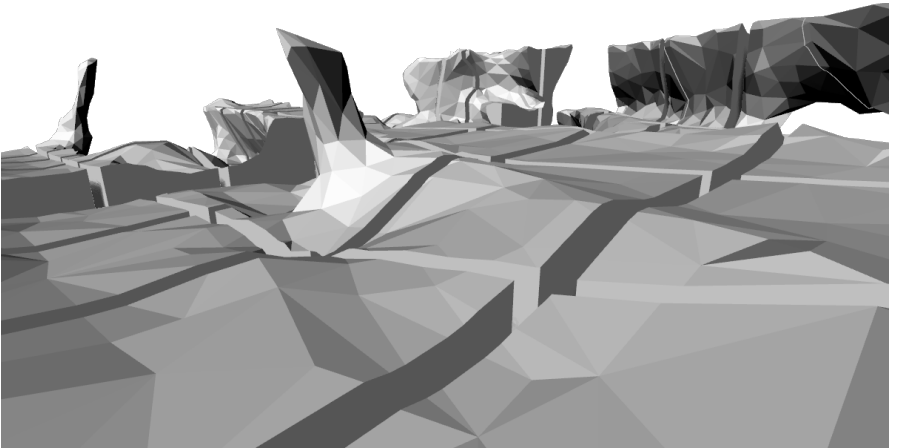


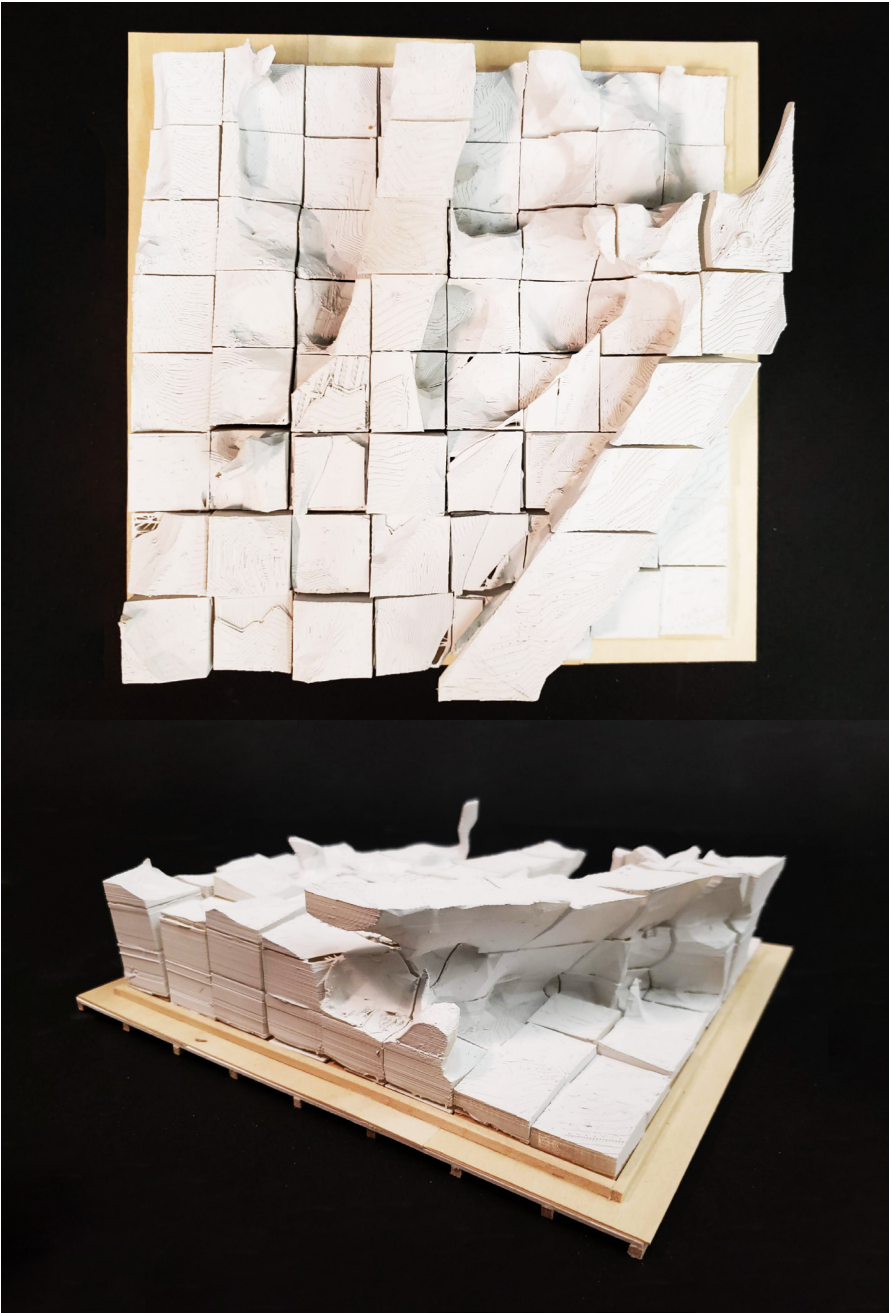
Using google maps, I used the information around the area of Chicano Park to create a digital solid mesh that I could then manipulate using different software.





What was left from the process of cutting up and measuring of the area were strange shapes and outlandish structures that only gave a hint of what is once.

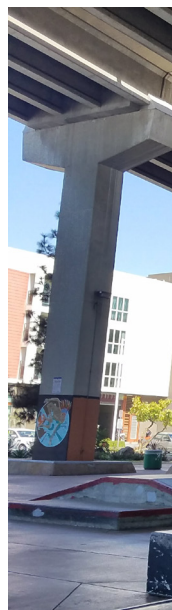




The mesh was then made physical using a 3D printer that embodied the virtual representation of the Coronado Bridge and how Chicano Park is manifested from its point of view. Using the limitations of the printer such as dimensions and type of materials available to create this once intangible shape real.



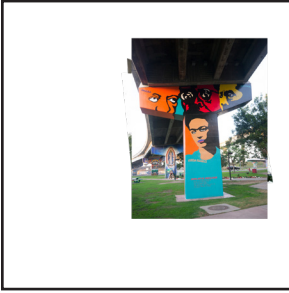
Digitizing Heritage





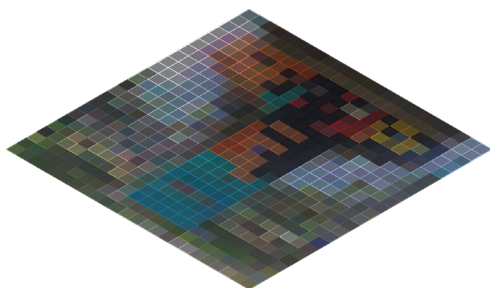
The actual area underneath the Coronado Bridge is vibrant and lively. It is a space where culture is celebrated by the community and history is represented in the art and structure of the space. There is even a performance venue known as the Kiosko that was created to commemorate the struggle it took to create the park.







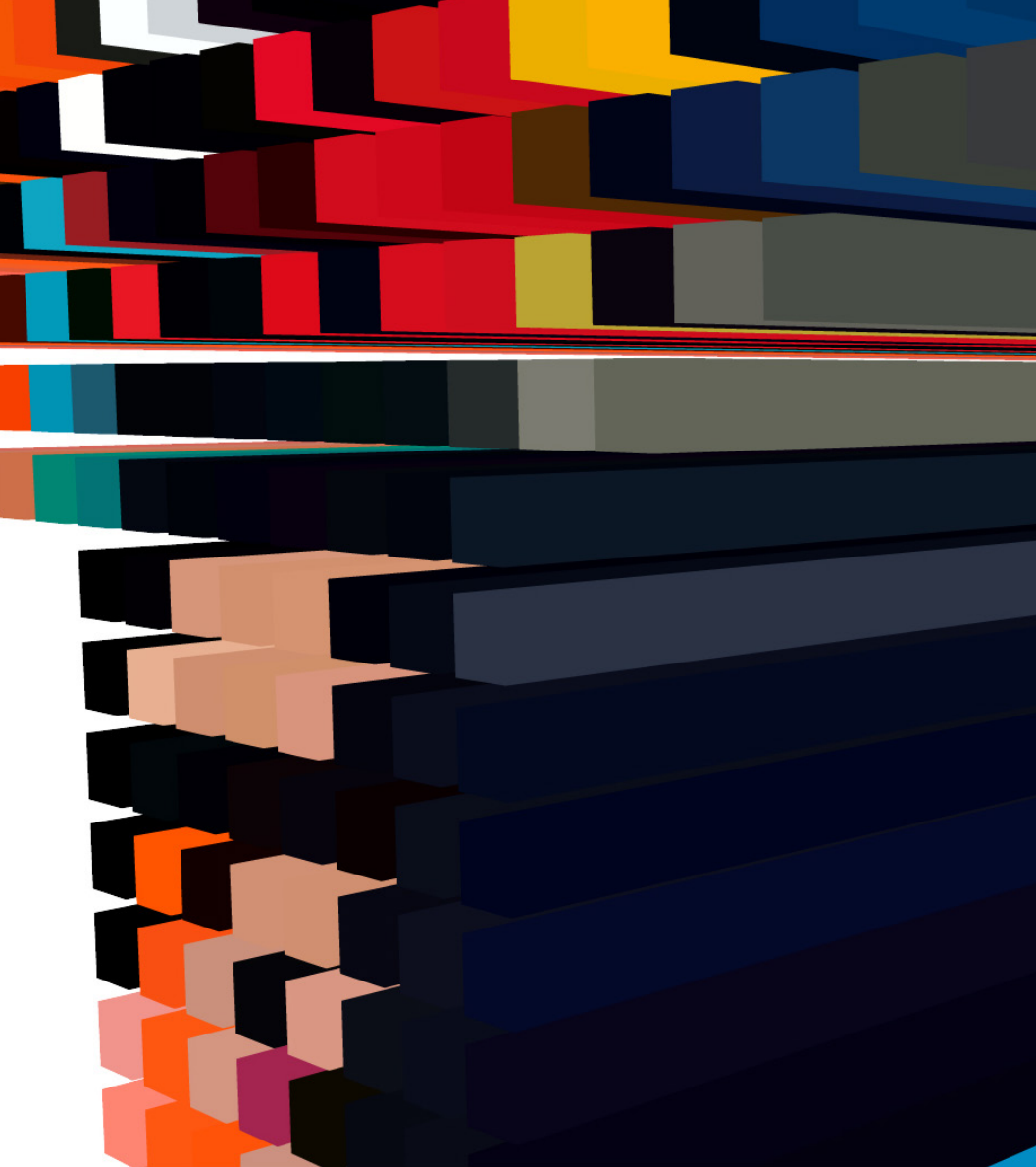
To incorporate a better perspective of the murals around the Kiosko, I created an image from the averages of 20-30 found photographs from different archives online that was then translated into digital surfaces from the RGB values and assigned a resolution according to the subject matter.

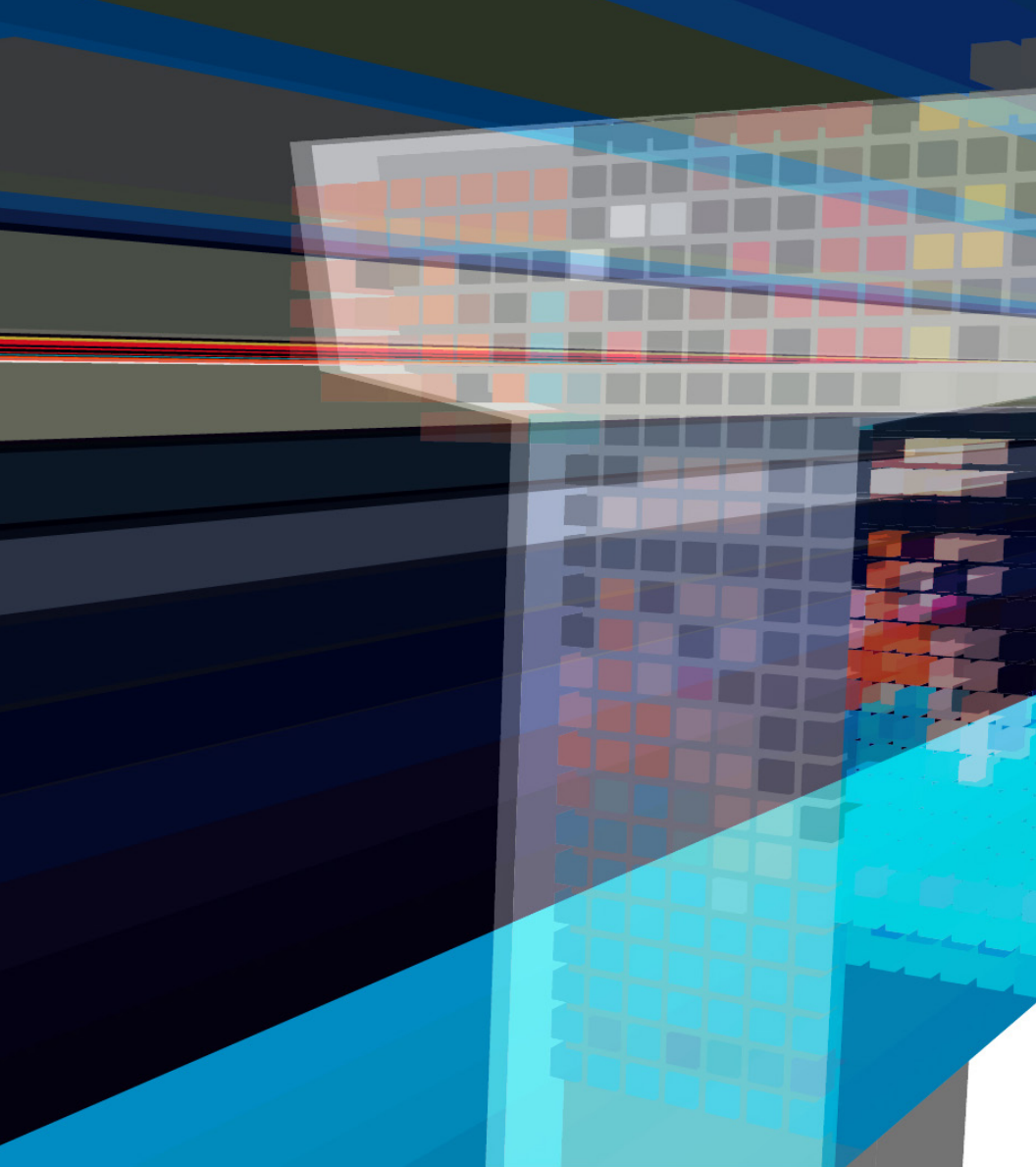


This was done to the five adjacent columns surrounding the center of the performance venue which would then be used to create a new spatial formation that would become inhabitable in the digital form.

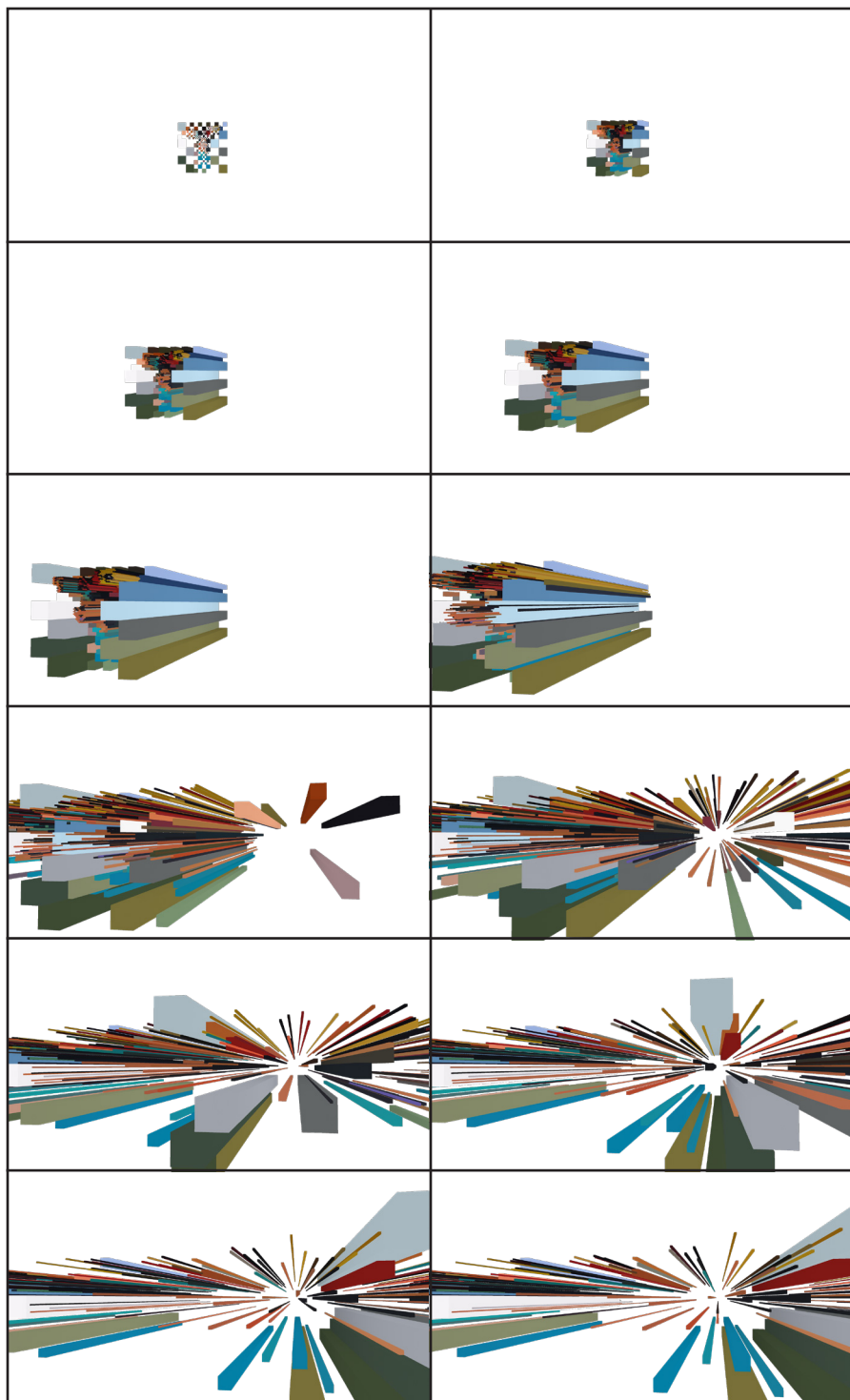


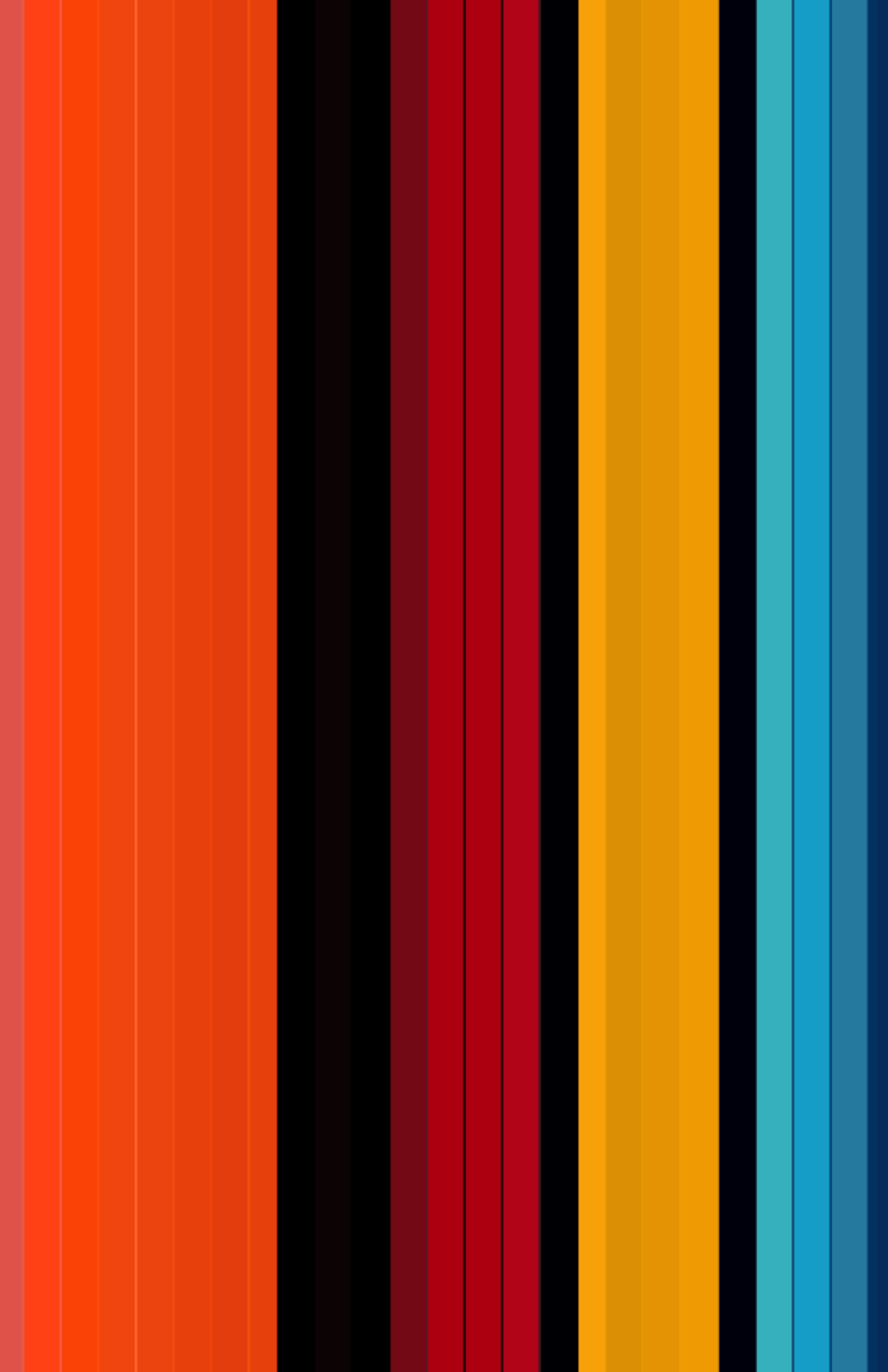
Manifesting Culture

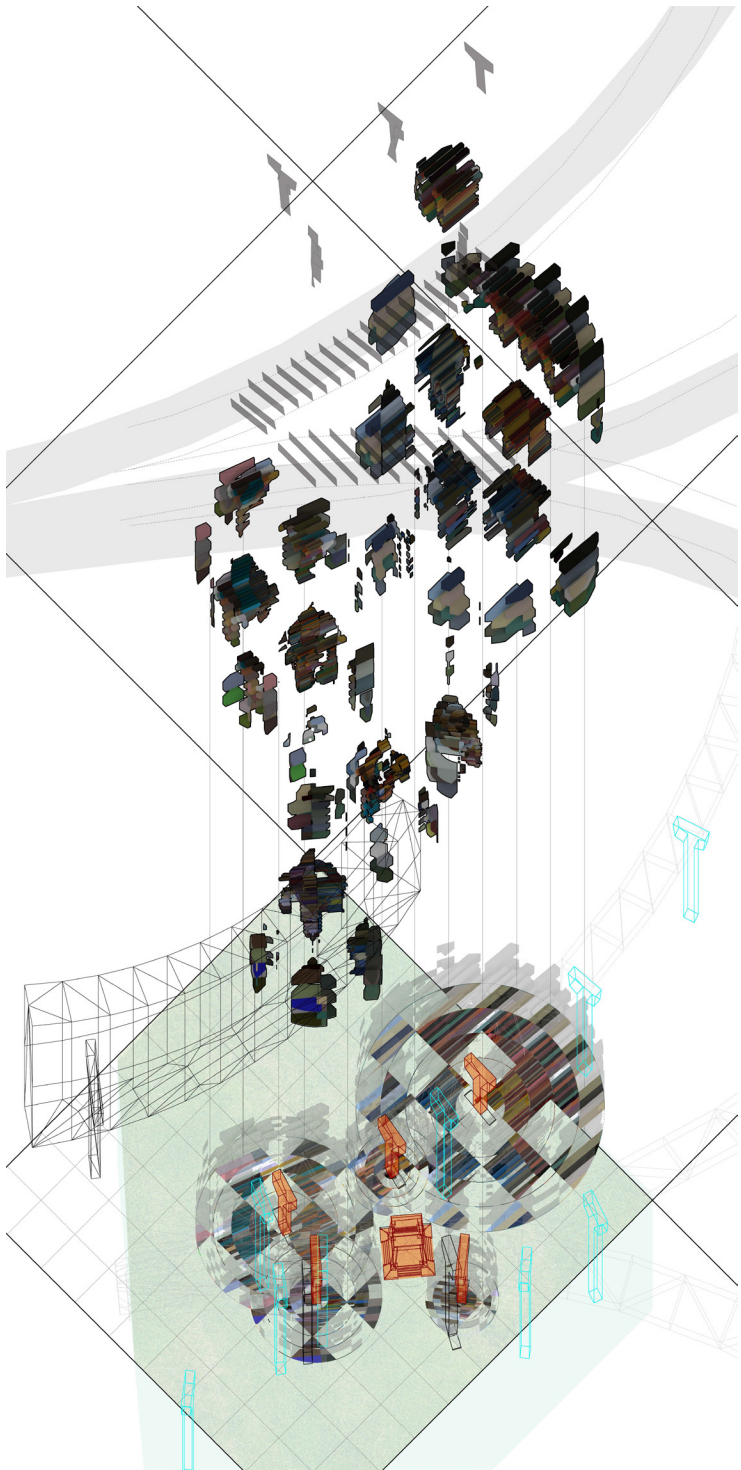




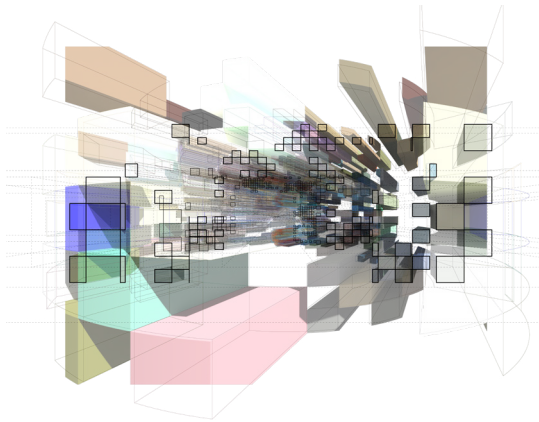
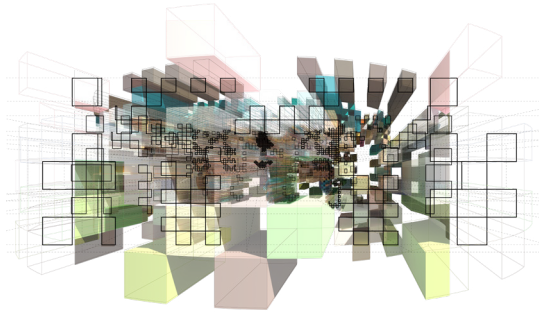
By giving the RGB values a operable shape, I was able to animate and imitate the liveliness of Chicano Park and create and extrude new forms in different points of view.



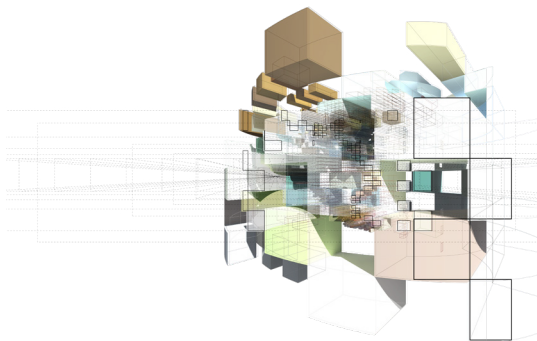
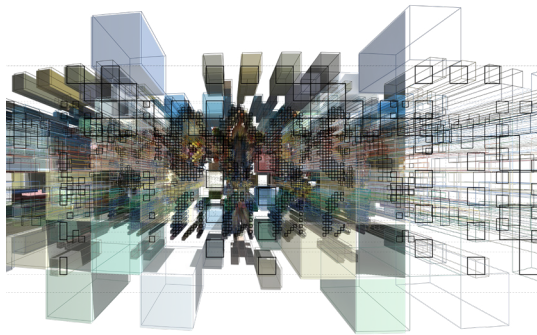
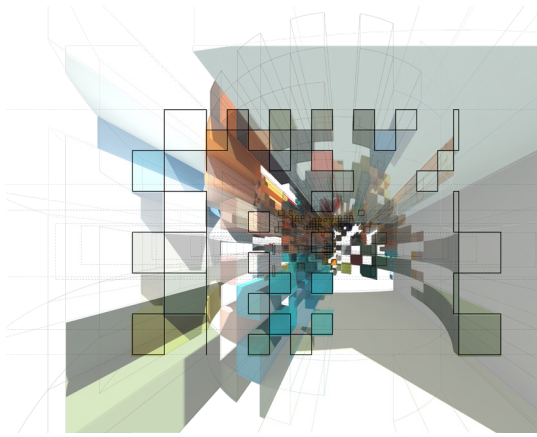


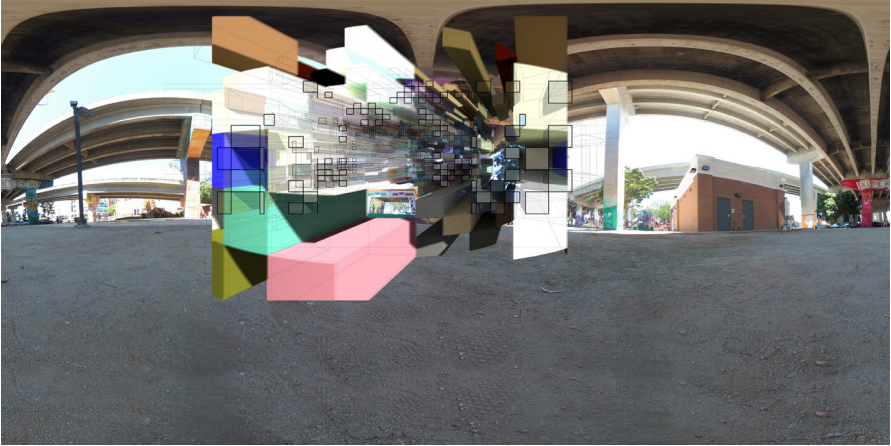


Spaces were then formed and shaped to create interiors based on the distances between the Kiosko and the latitude and longitude values that cross through Chicano Park.

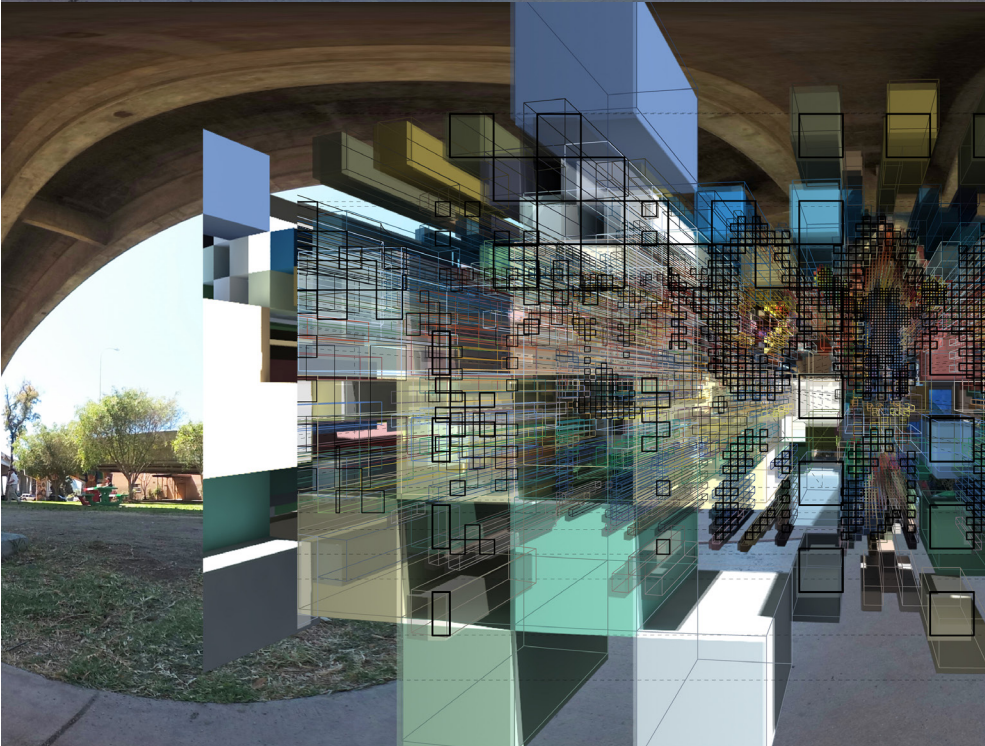


These new perspectives were then overlaid with the a 360 degree image representing each column that would then manipulate the construct further as it is stretched in place.











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