2018 Benjamin
MENSCHEL
Fellowship
EXHIBITION

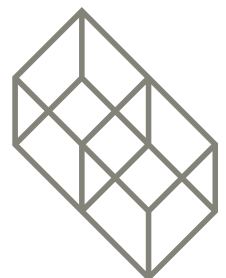# THE COOPER UNION FOR THE ADVANCEMENT OF SCIENCE AND ART

GABRIELA GODLEWSKI ENGINEERING

NICOLE LINDNER ART | SOPHIE SCHNEIDER ENGINEERING | JESUS MORALES ART

JACKSON McGRATH ART

SARAH PHILLIPS ART | YONATAN KATZELNIK ART

TANDIS SHOUSHTARY ART | ANNA BURHOLT ART

JANUARY 29 THROUGH FEBRUARY 14, 2019

The Benjamin Menschel Fellowship Program to support creative inquiry was endowed by a grant given to The Cooper Union by the Horace W. Goldsmith Foundation in 1994 to support work in the fields of art, architecture, design, and engineering. This generous grant was intended to provide funding to exceptional students who propose scholarly, independent projects that will in some way provide a culmination to their educational endeavors at The Cooper Union. It is the hope of the Goldsmith Foundation that students designated as Menschel Fellows will be encouraged by their awards to complete bodies of artwork, develop scientific protocols, or otherwise further their intellectual investigations in a manner that will provide inspiration and illumination to the community as a whole.

Professor Sohnya Sayres, *Project Director*

Above: Sarah Phillips | Yonatan Katzelnik

Front cover: Tandis Shoushtary | Anna Burholt
Back cover: Jackson McGrath

AFTER THE STORM:
HOW TWO DIFFERENT CITIES ARE BUILDING BACK AFTER HURRICANES

 With the growing threat of climate change, engineers are tasked with finding solutions to residential flooding. The increase in frequency and intensity of hurricanes is putting many coastal cities, which were not vulnerable to flooding when they were originally built, at sudden extreme risk. Watching my neighborhood in Staten Island flood with seawater during Hurricane Sandy made me realize how unprepared we were for such an occurrence. The experience set me on the path to finding structural solutions through civil engineering.

Engineers who work to prevent hurricane-related flooding have arrived at theoretical solutions, but they are often stopped from implementing them by seemingly unconnected factors. These may include legislation that prevents renovation on account of historic preservation; the economic limitations of affected families who cannot afford renovation; or conservationist groups blocking a flood wall in order to protect the habitat of a rare species.

These political, economic, and social factors differ significantly among coastal cities. To broaden my understanding of holistic engineering solutions, I explored how these factors change the engineering approaches as cities attempt to rebuild devastated communities while preparing for future damage.

To best understand the extent of the effects of these factors, I studied two very different cities—Houston, which was hit by Hurricane Harvey in 2017, and New York City, which was hit by Hurricane Sandy in 2012. These cities vary greatly in terms of culture, location, climate, politics, environment, economy, and experience with flooding. I expected such differences to result in very different engineering approaches.

Exploring how the specific circumstances of each city tied into engineering decisions required me to collect data from a wide range of sources. I traveled to various locations in both cities to
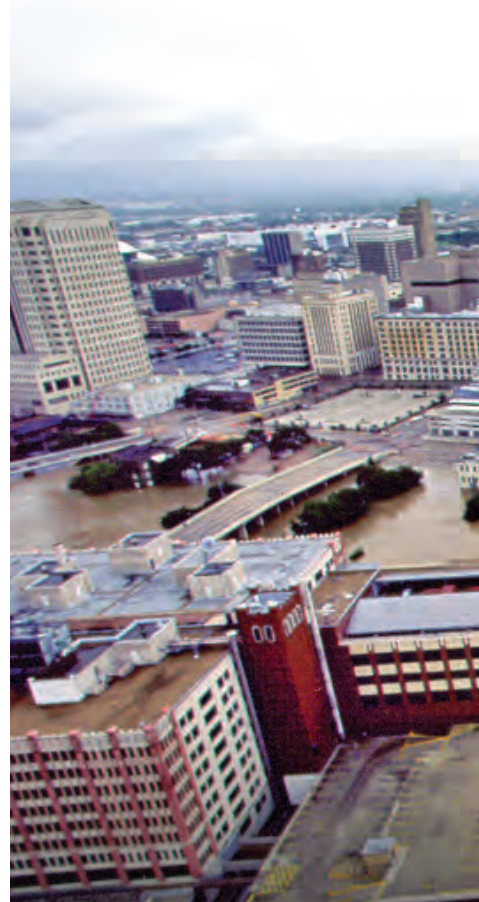
GABRIELA GODLEWSKI CE'19
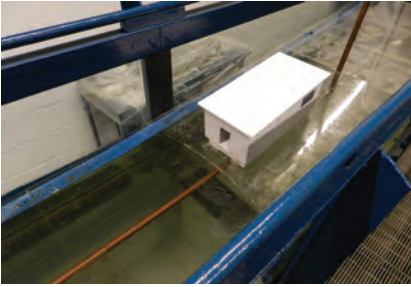
GABRIELA GODLEWSKI

survey the damage that the hurricanes wreaked. At the sites, I took photos and collected soil samples, which I later studied to compare the geotechnical makeup of soils in Houston with soils in New York. I also spoke with a variety of people—homeowners, students, researchers, engineers, architects, local politicians—and learned about their individual experiences in the respective hurricanes. At local libraries, I collected articles that elaborated on the scope of the impact the hurricanes had in each city.

As it turns out, the engineering solutions applied in both cities are pretty much the same. The best way to mitigate residential flooding is simply to raise the houses out of the way. Engineers are also reclaiming wetlands and rehabilitating them to absorb excess water from severe storms. However, the laws, finances, and designs behind each city's approach differ greatly. As the threat of flooding continues to grow and puts coastal cities at risk, engineers will have to consider all the relevant political, social, and economic factors when designing solutions to the growing problem.

FEMA
FLOODPLAINS
2007

■ 1% (100-Yr.) Floodplain
□ 0.2% (500-Yr.) Floodplain
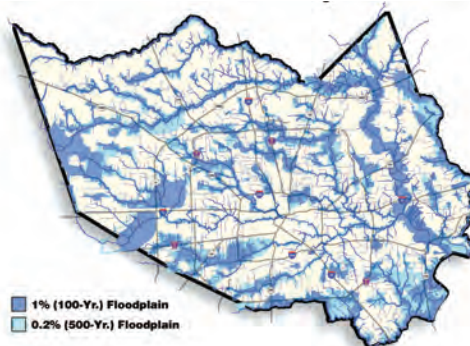
NOTES FOR THE HORIZON

Nestled at the end of Tunnel Ogarrio, within the Sierra de Catorce range in the arid Mexican Plateau, are the remnants of Real de Catorce, a nearly deserted boomtown that was once one of the highest-producing silver mines of the New World.

Over time, the town has become a tense ground, broken by the forces of the Catholic Church and the exploitative power of Hollywood. This place, what the indigenous Wixarika people hold to be the "the origin of the universe," has become subject to the will of Hollywood, the Catholic Church, and the newly revived claims on the land by Canadian mining company, First Majestic Corporation. Its representation is squeezed through the narrow lens of drone photography, theodolites, and multi-million-dollar movie budgets. Here, the pre-Columbian, the colonial, and the bizarre capitalist contemporary awkwardly collide, eroding the town through the targeted efforts of predatory touristic practices.

Aerial shots, the imposition of territorial lines, the restructuring of the site for filming, and the extraction of minerals flatten and reduce the site to a backdrop and a site of profit. Residents of Real de Catorce are forced to repackage their histories and stories in ways that accommodate these external narratives. The Wixarika people's protest has successfully halted further quarry development. In this spirit, we turn the tools of the various "looking" machines back on themselves. Through the use of backdrops, data sets, and tools for land appraisal, we have developed images that contest the process of

NICOLE LINDNER A'20 | SOPHIE SCHNEIDER ME'20 | JESUS MORALES A'20

flattening. With narrative from our research and our interviews, *Notes for the Horizon* begins the process of regaining a lost dimensionality, providing the possibility of an alternative to the singular view of Real de Catorce.

Colonial control in Real de Catorce is constant and sustained, embedded within the biography of the site. The plot of this place doubles, and triples, and becomes exhausted, looping between the same agents of control (quicker each time), only to start again under another name. This repetition is an intrinsic part of the production of representation of Real de Catorce.

> *To make his horror complete, Caesar, pressed to the foot of a statue by the impatient daggers of his friends, discovers among the blades and faces the face of Marcus Junius Brutus, his protege, perhaps his son, and ceasing to defend himself he exclaims: "You too, my son!" Shakespeare and Quevedo revive the pathetic cry.*
>
> *Destiny takes pleasure in repetition, variants, symmetries: nineteen centuries later, in the south of the Province of Buenos Aires, a gaucho is attacked by other gauchos. As he falls he recognizes an adopted son of his and says to him with gentle reproof and slow surprise (these words must be heard, not read), "Pero che!" He is being killed, and he does not know he is dying so that a scene may be repeated.*
>
> —"The Plot", Jorge Luis Borges (trans. Andrew Hurley)

NICOLE LINDNER | SOPHIE SCHNEIDER | JESUS MORALES

BRIC-A-BRAC

Distributed around this room are several little pillars of books, each stacked atop a small brick stage. One stack is over there, on the bleachers. Another is over by the photographs on the wall. In the books are the pieces of a story about bricks: about a particular brick on my windowsill, and my time spent in "Bricktown" up the river.

Only about one hour away from where we stand now, that town, Haverstraw, sits like a spool at the end of a thread leading all the way back to the brick on my windowsill.

Haverstraw lies at the foot of the tallest peak of the Palisades escarpment, High Tor, and on the west bank of Haverstraw Bay, the widest point of the Hudson River at three-and-a-half miles across. At the height of production, it manufactured around 300 million bricks annually, which were used to construct about a third of New York City in the years before the Depression. Over less than a decade, the village exhumed the land out from under itself and shipped it downriver piece by piece, brick by brick, to make up Manhattan. The relics of the brickyards stand on nearly every corner and lie in every alley. We live on them and in them; we walk past them every day.

Are we not still in Haverstraw then, here in Manhattan? From whence do those narrative threads arise, which entangle cities and people across centuries? How may they be teased apart, or woven together as narrative, in order to constitute a history?
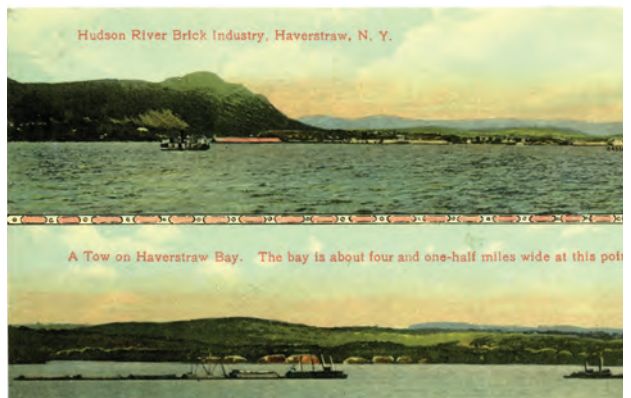
JACKSON MCGRATH A'19

"Brick without Straw" at Haverstraw
by Charles Elley Hall

I went up to Haverstraw intending to write a play, which is not quite what I have done. The story I wrote is in pieces, like little blocks, which might be built up into any number of retellings of the same events. There are three different versions of the book mixed into the stacks, organized according to different principles: one is sequenced chronologically, backward in time from the present day to Henry Hudson; another progresses spatially, from Haverstraw, down the river, to New York City; and a third moves essayistically, dictated by the idiosyncrasies which governed my engagement with the documents and scraps of history.

Cut the passages up and glue them together, rip pages out, write over them, reorder them, throw them in the trash can—one's interpretation will always seep between the cracks like mortar and fix the pieces into a narrative.

Hudson River Brick Industry, Haverstraw, N. Y.

A Tow on Haverstraw Bay.   The bay is about four and one-half miles wide at this poi

JACKSON MCGRATH

INTERNET OF PEERS

Sarah: To start this off, Yonatan, can you explain what mesh technology means here?

Yonatan: You know that someone like Verizon or Optimum gives you internet, which means there are a bunch of corporate or government tiers mediating your access to information. Well, um, mesh completely takes out that control by replacing it with something that the average hobbyist can understand. Mesh may not be the final answer but is one way of imagining an alternative in a field dominated by capital.

S: Radical.

Y: Sarah, what was going on in Catalonia that made mesh so relevant?

S: Uhh, last October, the Catalan government held a referendum asking their citizens if they wanted independence from Spain. I remember that happening right when you pitched the mesh idea to me. At first, you were totally disinterested in the political stuff. But after reading about all this, I told you, "Yonatan, we have to take into account what is going on politically, as well as this mesh thing you're talking about."
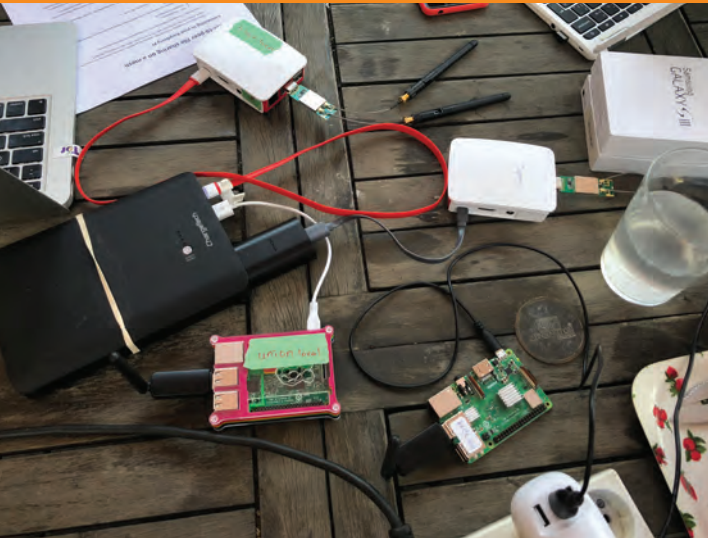
Y: Yeah. And then I said, "No."

S: Yeah.

Y: (Laughs.)

S: And then I was like, "Yeah, look into it and get back to me."

Y: And then we thought, "Okay, that sounds like a good idea." We saw similarities between the drive for independence to the kind of rhetoric we see in mesh-related circles, where people are trying to create an alternative to oppressive forces.

S: Unfortunately, much of the idealism we were looking for just wasn't there, at least not groundedly.

Y: I was hoping that more activists would be involved with Guifi, but what we ended up seeing was that Guifi was more business-oriented. The foundation was just the commons license, and everybody who agreed to use the network under those terms could do what they wished and make a profit.

S: I think that's where we realized that the people of Guifi weren't the users or the consumers, but rather these little businesses who were developing Guifi. They voted; they owned it. In that way, it's very anti-large-corporation and small and community-centric…

Y: Which was what we were looking for, I guess?

S: And we designed the exhibition to be a response to that sense of community-building. We got in contact with two local collections to loan the books you see here. Yonatan built some tables, chairs, and a set of bleachers to make the space comfortable to hang out in. We've invited people to hold workshops and discussions, and we'll even be co-hosting an event with Cooper Brew in February. We really just want people to come in and use the space.

SHE GOES WITH HER: AN ANIMATED FILM ON THE INTERSECTION OF IRANIAN MIGRATION AND QUEER IDENTITY

In the wake of President Donald Trump's executive order that banned citizens of seven countries—Iran, Iraq, Libya, Somalia, Sudan, Syria, and Yemen—from entering the US, already complex and lengthy asylum procedures have become nearly impossible to implement, causing many refugees to set their sights on Canada. Among those affected by the ban are Iranian LGBT asylum seekers, eager to flee a home country where their sexuality is not only considered illegal but is punishable by death.

She Goes With Her is a short experimental animated film exploring the intersection between migration and queer identity, through the interwoven voices of queer Iranian women living in Toronto, most of whom are under refugee status.

We traveled to Toronto, home to one of the largest queer Iranian communities, to collaborate with several Iranian women we contacted through queer organizations and personal networks who were eager to meet and exchange stories. Rather than a traditional interview, we were interested in asking them to lead a conversation based on their responses to images: small print-outs of abstract paintings, historical references, colors, shapes,

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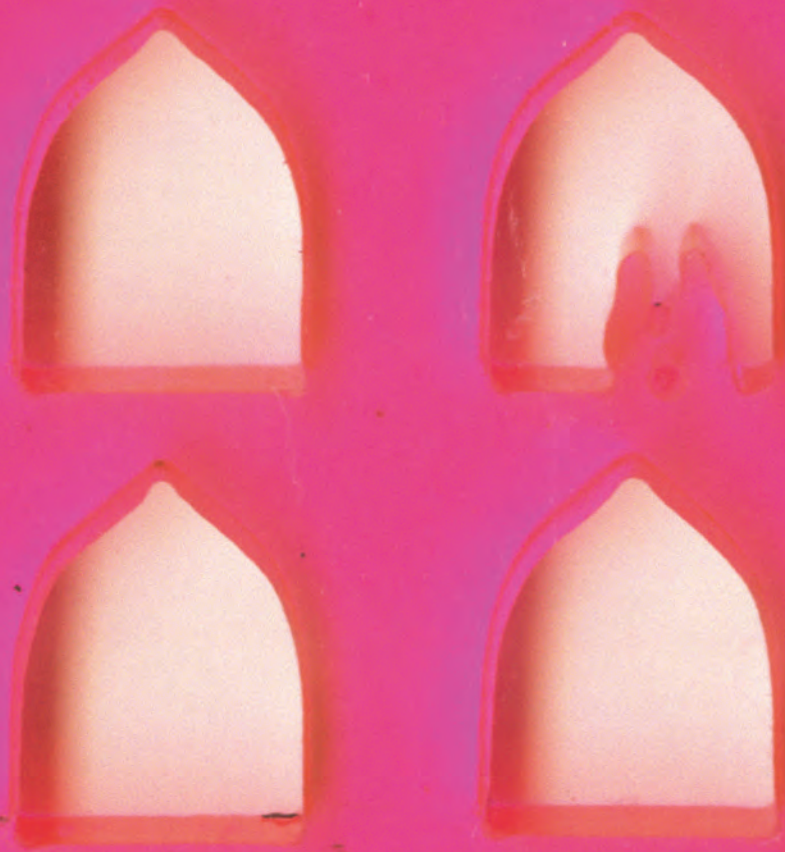
For more information and updates on our project, visit shegoeswithher.com

TANDIS SHOUSHTARY | ANNA BURHOLT

and symbols. We ended up recording over twelve hours of conversation, which, combined with the visual motifs of the images, guided the storyboarding then the animation process for our short film.

Roughly 15 minutes long, *She Goes With Her* centers queer Iranian memory, experience, and imagination against ever-shifting narratives surrounding representation, cultural assimilation, Western hegemony, and sexual politics. The film is comprised of four chapters—each vignette an abstract exploration of migration, culture, gender, sex, and love, highlighting how contemporary immigration attitudes and laws impact collective queer identity.

The dialogue is accompanied by light-based animation, which was achieved through a unique frame-by-frame laser-cutting technique. Beginning with a digitally rendered animation, each individual frame of the video was then extracted and laser-cut onto tinted acrylic Plexiglas. The anonymous queer voices narrate and redefine their human experiences, while allowing the viewers to find themselves through the transparency-based animation.