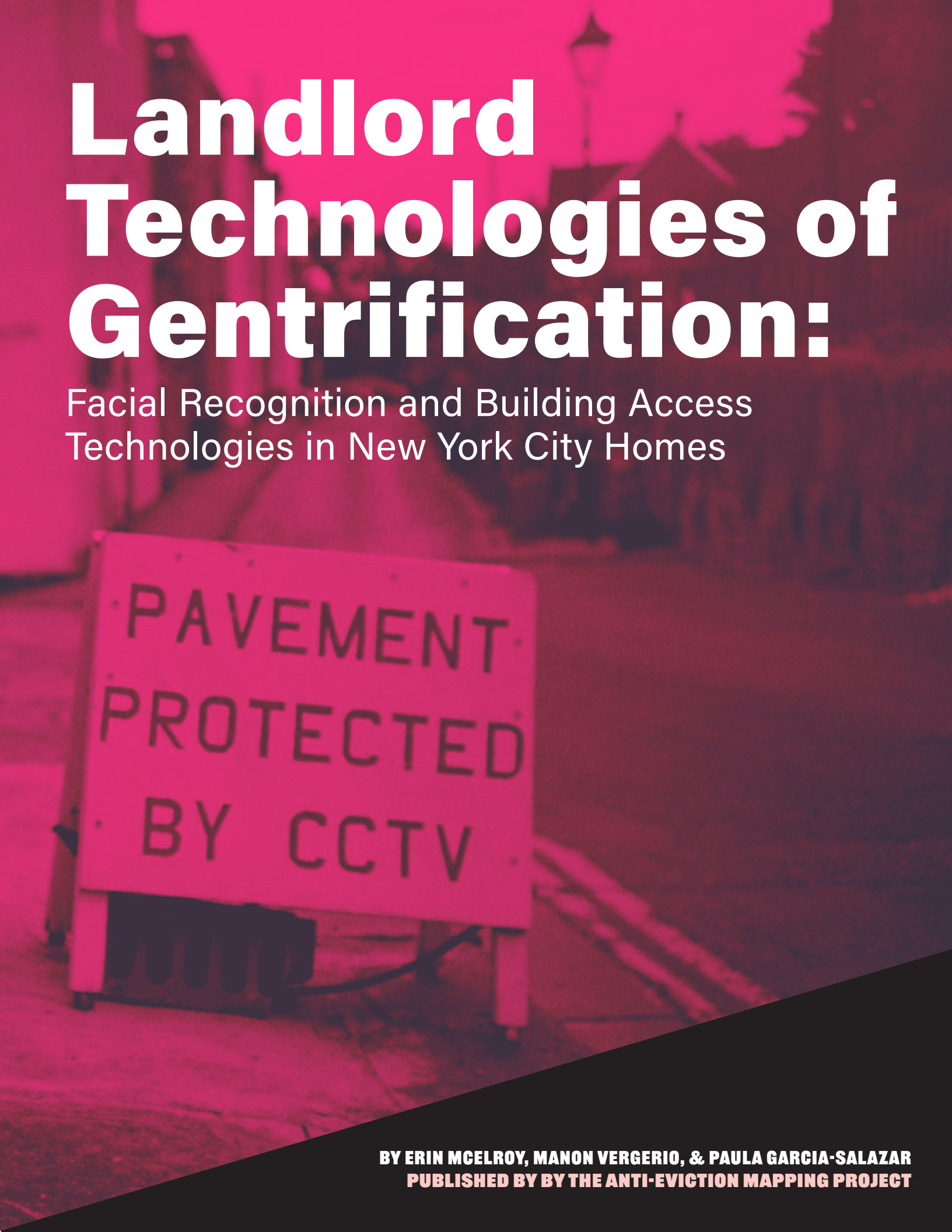
Landlord Technologies of Gentrification:

Facial Recognition and Building Access Technologies in New York City Homes



BY ERIN MCELROY, MANON VERGERIO, & PAULA GARCIA-SALAZAR
PUBLISHED BY BY THE ANTI-EVICTION MAPPING PROJECT

Cover image by Gemma Evans / Unsplash / unsplash.com/photos/r-M9lf-MxPw
Report designed by E. Knafo / mosastudio.work
Maps and graphics by AEMP

ACKNOWLEDGMENTS

Landlord Technologies of Gentrification: Facial Recognition and Building Access Technologies in New York City Homes was written by Erin McElroy, Paula Garcia-Salazar, and Manon Vergerio with contributions from the OceanHill-Brownsville Alliance and the Anti-Eviction Mapping Project.

Report images are by Manon Vergerio, the OceanHill-Brownsville Alliance, and the Anti-Eviction Mapping Project.

The report was designed by Elizabeth Knafo.

The OceanHill-Brownsville Alliance is a community organization founded by Tranae' Moran and Fabian Rogers to foster awareness of, and organize around, otherwise invisible harms deployed in housing, such as biometric collecting systems. The Anti-Eviction Mapping Project is a digital cartography and media collective visualizing displacement struggles and creating tools for resistance.

We consulted with many brilliant people along the way in conceptualizing and drafting this report, including Marika Dias, Tranae' Moran, Fabian Rogers, Rashida Richardson, and Meredith Whittaker. Thank you too to Bronx Academy for Software Engineering (BASE) high school students Edward, Natalie, and Justin for their contributions to data scraping. We are also very grateful to Meredith Whittaker, Luke Strathmann, Katie Hill, Margaret McCarroll, and Byron Xu for their generous help editing this text.

In many ways, this report is an extension of the Landlord Tech Watch project, a collaboration between the Anti-Eviction Mapping Project, the AI Now Institute at NYU, People Power Media, and the OceanHill-Brownsville Alliance. Many wonderful people have been additionally involved in this collaboration and ongoing conversations, including, in addition to those mentioned above, Joseph Smooke, Dyan Ruiz, Jeantelle Laberinto, Wonyoung So, Matt Martignoni, Alexandra Lacey, Nicole Weber, Shazeda Ahmed, Deborah Raji, and Genevieve Fried. Thanks too to Desiree Fields for supporting all of this work. For more, see: https://antievictionmappingproject.github.io/landlordtech/

This report is published by the Anti-Eviction Mapping Project based upon funding from the Social Science Research Council's Just Tech Covid-19 Rapid Response Grant, with additional support from the Calyx Institute, the AI Now Institute at New York University, the British Academy IC3/100156, the University of Texas at Austin Good Systems and Undergraduate Research Apprenticeship Program, The Anti-Monopoly Fund, and the Ford Foundation.

TABLE OF CONTENTS

06 *Summary*

08 *NYC: The Making of a Landlord Tech Epicenter*

Big Data
More Crises
Open Data
Landlord Tech Emerges
Landlord Tech and Covid-19

14 *Automating Gentrification*

Atlanta Plaza Towers
Taino Towers
Knickerbocker Village
GateGuard
Loft Tenants
Expansion Beyond NYC

29 *Carceral Housing*

NYCHA and RAD
Morris Avenue Apartments
Digital Prisons
Racist Recognition
Carceral Outcomes
Robots

44 *Policies*

History of Surveillance in Housing
Federal Regulation of Facial Recognition
Landlord Tech
State and Local Regulations of Landlord Tech
State Regulations
    Massachusetts
    California
City Regulations
    Portland, OR
    New York City

53 *Looking Forward*

Local Data, Privacy, and Facial Recognition Regulations
Surveillance and Data Regulation Impact Boards
Tenant Protection Policies
Tenant Protections and Covid-19

56 *Organizing*

OceanHill-Brownsville Alliance Guide
Resources for NYC Tenants

58 *How to Research Landlord Tech*

Data Scraping Guide
FOIL and Data Requests
Landlord Tech Watch

SUMMARY

This report examines the increasing deployment of landlord technologies in New York City (NYC) housing, and the problems this creates and intensifies. These technologies include facial recognition, closed-circuit television (CCTV) cameras, and other algorithmic, biometric, and app-based building access technologies specifically designed to be deployed in tenant housing and surrounding public and private space. We map the genealogies and geographies of these surveillance systems, looking at intersections of surveillance, carcerality, and gentrification. In addition, we look at why it is that New York has become an epicenter of what the real estate industry describes as the "property technology," or the "proptech" industry. This term encompasses the platforms, systems, algorithms, and data regimes connecting the real estate and technology industries in residential, commercial, and industrial buildings.

While the real estate industry describes this assemblage of technologies as residential property technology ("proptech"), here we rename them landlord technology, or landlord tech. This collaborative renaming has arisen from meetings with members of the Anti-Eviction Mapping Project, People Power Media, the AI Now Institute, and the OceanHill-Brownsville Alliance—groups that we are a part of and/or in community with. Together, we produced a nomenclature of landlord technologies from a tenant harms perspective, as well as a survey, map, and a resource guide, all of which live today on our website, Landlord Tech Watch.[1] On the site, we define and expose the systems, platforms, hardware, software, algorithms, and data collection that landlords and property managers use to automate landlordism. These include tenant screening services that provide reports about prospective tenants so that landlords can determine if the tenant is "good enough" to move in, as well as eviction and debt-recovery apps, property management apps and platforms, neighborhood surveillance apps, biometric building entry systems, and more.

This report focuses on the geographies, harms, and histories of surveillance-based landlord tech in New York City housing. As we show, despite some progressive tenant and anti-surveillance legislation in place, Black and Brown residents are nevertheless disproportionately subjected to surveillance-induced harms in the space of their homes and neighborhoods. New partnerships between landlord technology companies, landlords, and developers incite racial profiling, augmented policing, automated evictions and fines, gentrification, and real estate speculation, particularly in contexts of crisis.

We begin in Section 2 by exploring how and why New York City emerged as a hub of landlord technology. We unearth Big Data experiments of the latter half of the 20th century, while also excavating how new technologies have been deployed by the city and by landlords in the wake of various crises, including the war on crime, the war on terror, the 2008 subprime mortgage crisis, and Hurricane Sandy. In each of these, we show, big tech mobilized through the logics of crisis capitalism to unleash largely untested

By naming specific companies, systems, and geographies, we hope this information will be helpful for tenants interested in researching and organizing against harmful landlord tech in their homes and communities.

technological solutionism to incite harm along familiar race, class, and gender lines, and reproduce racial capitalist geographies of property, place, and home. This, we continue to highlight, has been no less true during the Covid-19 pandemic.

In Section 3, we contextualize how landlord tech automates processes of gentrification and racial dispossession. By first mapping rezoning histories and geographies in the city, we look at cartographic technologies of racial capitalism. As we note, new facial recognition landlord tech systems are often deployed along rezoning borders. They can be interpreted as strategic tools to augment property value by "catching" tenants for petty lease violations and raising rents. We look at examples in several large low-income and affordable housing complexes, such as Atlantic Plaza Towers, Taino Towers, Knickerbocker Village, and Morris Avenue Apartments. We also explore how new facial recognition systems are employed in smaller New York City buildings and lofts and how "digital doorman" companies are incubating in NYC and then expanding globally.

Section 4 turns to the carceral effects of landlord tech surveillance. We begin by outlining the history of CCTV camera surveillance, particularly as it has been deployed in housing administered by the New York City Housing Authority (NYCHA). We draw upon tenant testimonies from public hearings and press conferences to elaborate on the carceral effects of forced home surveillance, looking to stories of how landlord tech (e.g., facial recognition, algorithmic, and robotic systems) transforms the home into a prison-like space.

In Section 5, we offer a policy summary of anti-surveillance legislation, looking at federal, state, and local laws that partially regulate facial recognition. We also look at several potential policies that could help regulate facial recognition in the realm of housing, or prevent petty lease violations from being used as grounds for eviction.

We conclude in Sections 6 and 7 by offering organizing tools and strategies for resisting, refusing, and thwarting the implementation of landlord tech in one's home. Much of this draws upon the ongoing work of the OceanHill-Brownsville Alliance, a group that came together in Brooklyn following the success of the tenants at Atlantic Plaza Towers in preventing their landlord from deploying a biometric heat mapping facial recognition entry system. We also include instructions for how to request information from local government bodies to learn more about landlord tech in public housing, and how to scrape data from private landlord tech websites and property listing sites to better understand landlord tech geographies.

Throughout this report, we also highlight various landlord tech companies that deploy facial recognition and building access systems in New York City housing. By naming specific companies, systems, and geographies, we hope this information will be helpful for tenants interested in researching and organizing against harmful landlord tech in their homes and communities.

NYC: THE MAKING OF A LANDLORD TECH EPICENTER

For well over a decade now, New York City has been considered the center of the global landlord tech industry—a place where the industry receives funding and investment, but also where novel technologies are being tested and rapidly deployed amongst the city's buildings and neighborhoods—particularly those home to Black, Indigenous, and People of Color (BIPOC) residents. There is a deeper history to this, both in the realm of racialized experiments of housing and policing. From the 1960s' and 1970s' urban administration utilization of cybernetics, urban control rooms, geographic information systems (GIS), and urban planning software technologies,[2] to the 1980s launch of Mike Bloomberg's "Bloomberg Terminals" and their new methods of dashboard governance,[3] from the New York City Police Department (NYPD) increased adoption of data management systems such as Compstat in the 1990s to the development of private sector based fusion centers and the expansion of the city's Domain Awareness systems—there is a wealth of examples of urban algorithmic control.[4]

Datafication and algorithmic control have also found their way into the city's realm of housing. For instance, the tenant screening industry blossomed in NYC in the aftermath of 9/11 under the racist auspices of blacklisting potentially "dangerous" tenants from securing future housing.[5] The 2008 subprime mortgage crisis then became another pivotal moment. Across the country, Wall Street investment firms such as Blackstone acquired hundreds of thousands of homes that had been racistly foreclosed upon,[6] ushering in the era of the corporate landlord and a new asset class ripe for investment.[7] Corporate landlords needed new mechanisms to manage their massive portfolios and virtual property management systems.[8]

Meanwhile, the stock market crash also dealt a major blow to one of New York City's core economic pillars — finance. In response, then-Mayor Bloomberg led the city in a recovery plan that in part hinged upon reinventing New York City as a global tech leader.[9] The plan was implemented through a combination of tech incubators, networking events, training programs, the establishment of the Cornell Tech campus, and, importantly, a new approach to open data in New York. In 2012, the Open Data Law was signed, mandating that all public data be made available through a single web portal by 2018.[10] This, according to the real estate publication *Commercial Observer*, "turned the city into the epicenter of the burgeoning real estate tech start-up market."[11] With a local ecosystem that abounds with large real estate portfolios, financial capital, and readily available property data, the city has developed the perfect conditions to incubate a new generation of landlord tech companies. As James Patchett, President of the NYC Economic Development Corporation, has said, "New York City is the undisputed real estate capital of the world; throughout our five boroughs, we have billions of square feet in residential, commercial and industrial properties. Our unparalleled building stock and thriving tech sector position us to be an epicenter of industry innovation."[12]

Within a broad sector of NYC-based landlord tech transforming residential, commercial, and industrial buildings globally, a significant subset of companies sell products aimed at controlling building access in multifamily tenant housing. For instance, Latch, a keyless, smart access system, and Teman, a company with a suite of products aimed at tracking tenants and catching illegal sublets to expedite evictions, were both founded in New York City in 2014 and have since deployed their technology in 1,000 buildings across the city. Meanwhile, NYC-based ButterflyMx has installed its smart video intercoms in over 5,000 properties across the globe. Carson, an NYC-founded remote doorman company geared towards unstaffed buildings has since deployed its technology in 300 buildings and gained a presence on both coasts.[13] Founded in NYC in 2016, MVI Systems is a smart video access company piloting facial recognition and AI products in the tri-state area since 2018. They have also acquired 16,000 live users and partnered with major corporate landlords in New York to deploy their products, including E&M Management, the Parkoff Organization, and the Pinnacle Group,[14] three companies named as "top evictors" by JustFix.nyc, the Anti-Eviction Mapping Project, and the Right to Counsel.[15]

Landlord Tech and Covid-19

As has been the case with prior crises, the Covid-19 pandemic has exacerbated pre-existing forms of housing injustice globally. In the US, loss of income, lack of adequate housing protections, and more have made it next to impossible for millions of tenants to pay rent and remain securely housed. According to Policy Link's National Equity Atlas, as of October 2021, US tenants amass almost $16 billion in rental debt.[16] Following pre-Covid trends, BIPOC renters have borne the brunt of this newfound housing precarity and indebtedness. New York City was the epicenter of virus deaths during the first half of 2020, with neighborhoods such as Corona, Queens dubbed the "epicenter of the epicenter."[17] Over 40,000 residential tenants have, at the time of this writing, been taken to court for eviction proceedings, largely from BIPOC neighborhoods.[18] Meanwhile, there has been an estimated $1 billion of tenant debt accumulated for unpaid rent.[19] During this period, the city has witnessed an uptake in surveillance systems intended to prevent package theft, cut down on human contact in buildings, and ensure that only those registered with building management can enter (e.g., facial recognition and "digital doormen" systems).[20] For example, in 2020 the New York City-based ButterflyMX began scoping new opportunities to install smart locks as a security-based amenity.[21] During the pandemic, they conducted their own research and found that such amenities proved more successful in marketing to tenants compared to traditional convenience-based amenities such as parking lots. Yet these findings focus on higher-paying tenants' preferences, who are historically not targeted by racist surveillance systems and housing technologies. In April 2021, we found 498 apartments advertising "Virtual doorman" services on Craigslist in New York City. Of these, we found 77 percent (385) located in Brooklyn. While this data is only a small fraction of the addresses in which building access technology has been deployed, it indicates that landlords are

TRACKING THE RISE OF THE VIRTUAL DOORMEN, FACIAL RECOGNITION, AND KEYLESS COMPANIES OVER TIME

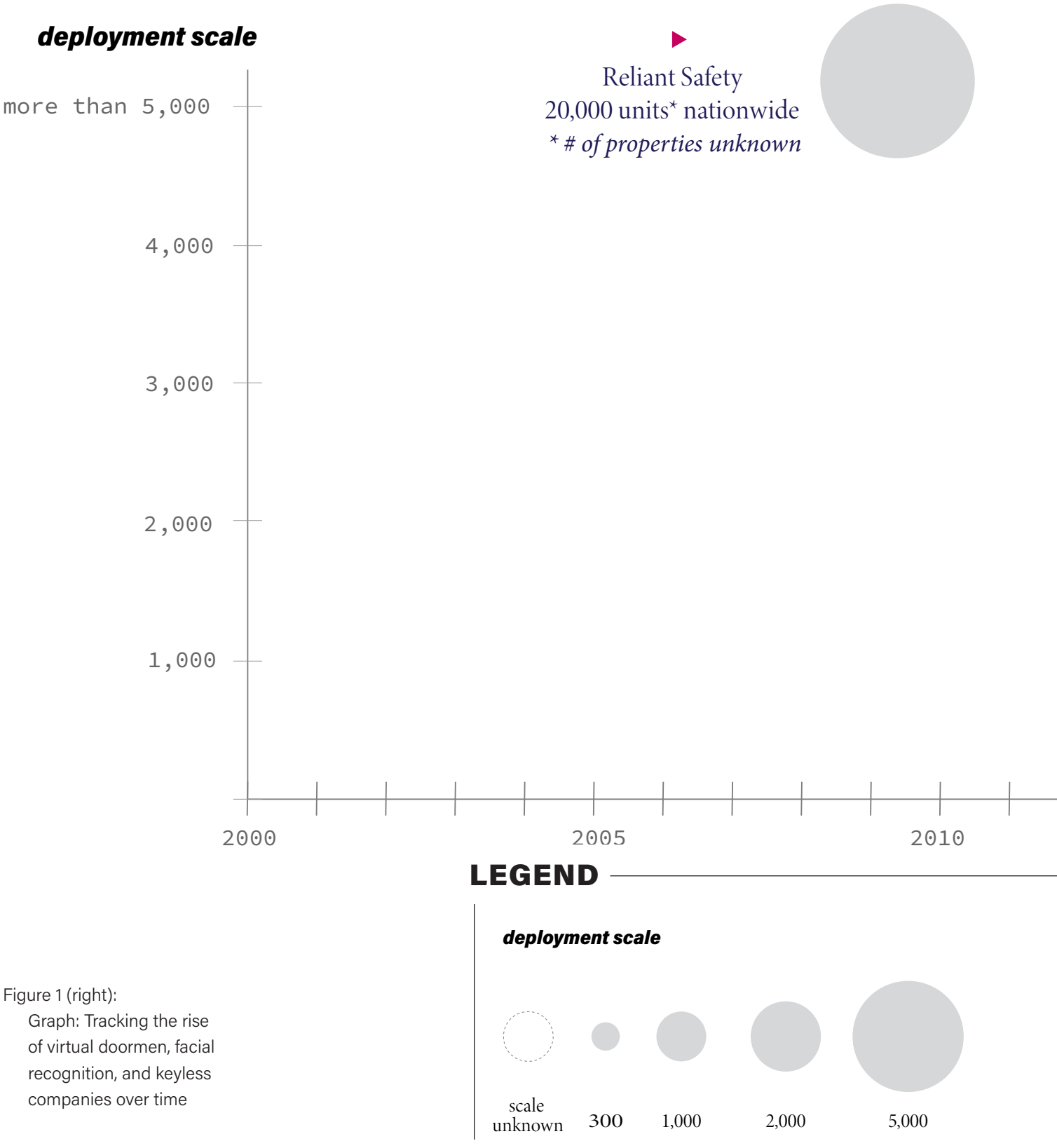
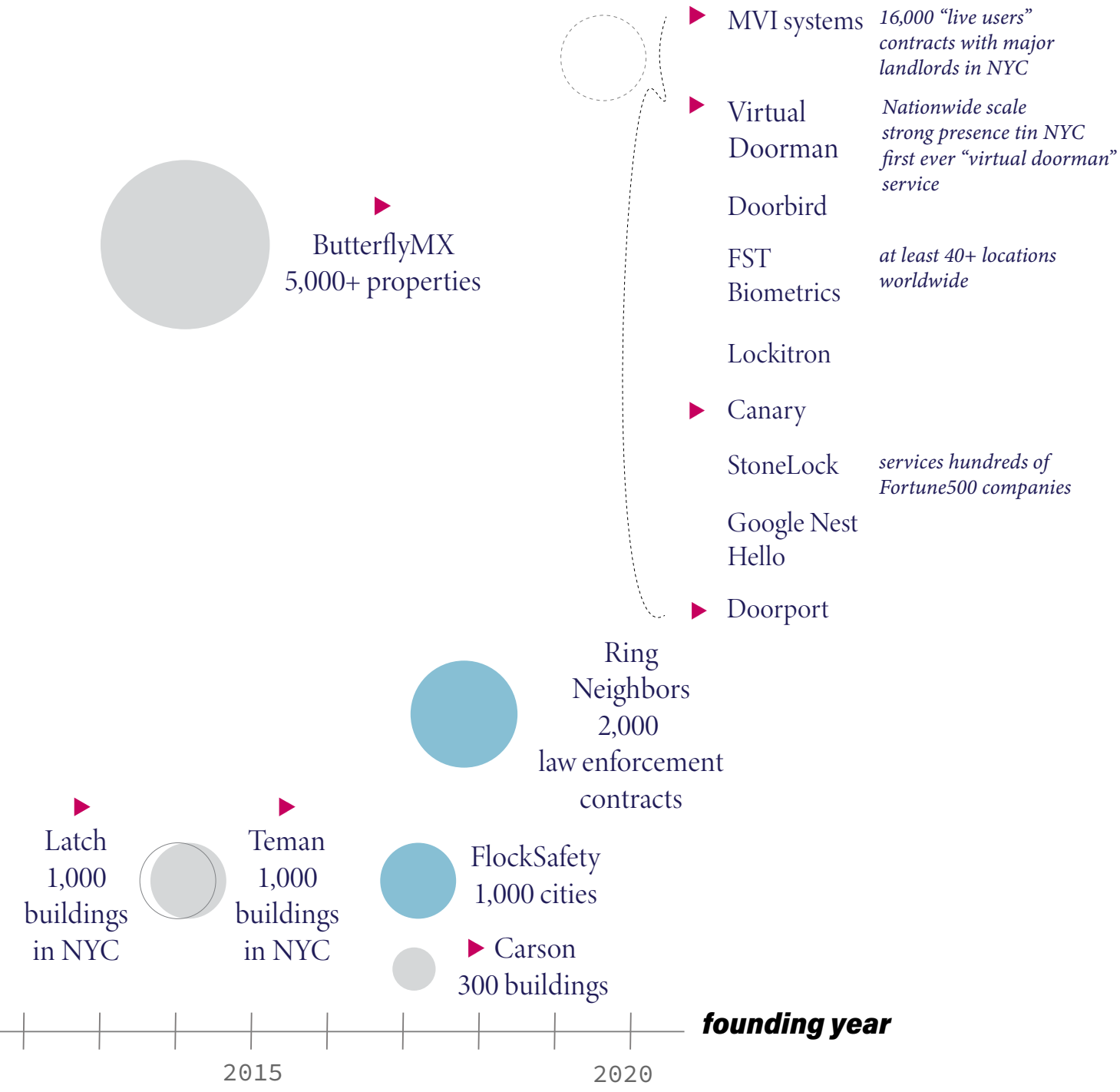


Figure 1 (right):
Graph: Tracking the rise of virtual doormen, facial recognition, and keyless companies over time



deployment type

number of jurisdictions or agency contracts

number of properties/buildings

location

headquartered in NYC

marketing high-tech entrance security as a desirable, sought-after amenity to attract new tenants amidst Covid-19. While there is still much to be studied regarding how the real estate and landlord tech industries will continue to transform in the aftermath of Covid, it seems clear that these industries plan to retain the surveillance systems deployed both before and after Covid. Despite these challenges, New York City has important protections currently in place, thanks to powerful tenant organizing campaigns. To name a few, the 2017 Right to Counsel provides free legal representation for tenants facing eviction, weakening landlords' ability to weaponize housing courts. The statewide 2019 Housing Stability and Tenant Protection Act closed many loopholes that had previously allowed landlords to deregulate rent-stabilized apartments, reducing incentives to evict rent-regulated tenants. New York also passed legislation preventing landlords from blacklisting tenants for prior eviction records, diminishing the power of tenant screening companies.[22] Finally, federal, state, and local eviction moratoriums during the pandemic have frozen or at least slowed evictions, temporarily curbing landlord power. These new regulatory frameworks have upended many violent and extractive practices, leaving landlords frustrated and looking for workarounds. In reaction, we anticipate that the real estate industry will increase reliance upon landlord tech to extract rental profits, with BIPOC tenants most vulnerable to the harms of these extractive and punitive technologies. We are particularly concerned with facial recognition surveillance systems deployed in low-income and affordable multifamily residential buildings in the city and how this deployment will continue to promote cycles of racial dispossession and gentrification.

Company Profile:

TEMAN/ GATE-GUARD

PRODUCTS: Gateguard.xyz, LookLock.xyz, SubletSpy

FUNCTION: "Digital doorman" suite that uses AI in order to monitor building access and detect illegal subletting and lease violations so that landlords can evict tenants and raise the rent.

LOCATION: Headquartered in New York City

FOUNDING YEAR: 2014

FOUNDER: Ari Teman

HISTORY: Ari Teman launched GateGuard after SubletSpy.com, which was inspired by his own experience of having an Airbnb subletter use his apartment for an orgy that allegedly cost him $67K in damages.[23]

SCALE: Over 1,000 buildings as of 2019 in New York, and installations across North America, Europe, South America, and Australia.[24]

COMPANY DESCRIPTION: "Teman makes Artificial Intelligence-driven hardware & software that protects thousands of buildings & homes for over 3000 top landlords, management companies, investors, brokers, and vendors across the planet. We have the #1 performing artificial intelligence & image recognition in the world in a number of categories. We crunch over 600,000,000 rows of data on your city every day. We are PhDs, MAs, and senior engineers in the USA (NYC, MIA), Israel, Ukraine, and Russia."[25]

PRODUCT INTEGRATIONS: Tenants can remotely open doors, track deliveries and packages; Property managers can track entries and who gets in and out of the building, and video footage to evict tenants if they find an illegal sublet. Every visitor is logged and photographed. Option to add a facial recognition option.

RENT DEREGULATION AND EVICTIONS: Direct connection between Teman surveillance installation and rent deregulation in how they market themselves to landlords: "A smart intercom company called Teman GateGuard has been pitching its surveillance technology to landlords in New York as a way to sidestep rent-control regulations in the city."[26]

LABOR: Labor outsourced to Eastern Europe and Israel.

AUTOMATING GENTRIFICATION

New systems installed by landlords and real estate companies to control residential buildings' entrances, especially facial recognition systems in tenant housing directly contribute to "automating gentrification."[27] These surveillance systems are used to harass and intimidate rent-regulated tenants, expedite evictions, and attract a "new" type of tenant who sees facial recognition as an amenity, not a racialized threat. While companies like Carson, Latch, and ButterflyMX list their products as perks for high-paying tenants (with Carson even posting images of its new deployments on Instagram to attract new potential high-end residents), FST21, Reliant Systems, and GateGuard deploy their systems without such fanfare, and often without tenant consent. In such poor and working-class housing contexts, tenants rightly interpret the deployment of such systems as intended to "catch" them for minor lease violations, and to squeeze them out, making way for higher-paying tenants and gentrification. As we have found, many of the buildings where landlord tech is being installed for such purposes are situated upon gentrification's frontlines. Often apartment complexes are situated in BIPOC neighborhoods and about new zoning or speculative market plans.

The idea of upgrading and rezoning New York City space to facilitate gentrification is nothing new. Racialized displacement can be traced back to New York City's founding on stolen, still unceded Lenape land. In the city's early days, the Dutch West Indies company financed private property development, while the city's financial elite amassed an initial capital stock through the Wall Street slave market.[28] Contemporary zoning and land-use practices have maintained this logic, forging what Samuel Stein describes as "the real estate state."[29]

It was in this context that Mayor Bill De Blasio (NYC Mayor, 2013-2021) campaigned on the promise of closing this gap between "the Tale of Two Cities," pointing to the stark inequalities between New York City's billionaires and the 80,000+ New Yorkers experiencing homelessness. As part of his administration's 2015 landmark "Housing New York: A Five-Borough, Ten-Year Plan," fifteen low-income BIPOC communities were designated for upzoning—rezoning practices meant to encourage higher density through an influx of giant residential towers.[30] This was justified because upzoning would allow the city to leverage the private sector to build high-density mixed-income and "affordable" housing.[31] Yet the plan was widely criticized for abetting real estate speculation in working-class communities and failing to meet the needs of low-income families whose incomes fall far below Area Median Income (AMI), the criteria used to determine affordability brackets which produces housing that is "affordable" in name only.[32]

Despite campaigning as a champion of equity in New York, De Blasio's rezonings reveal that his housing plan was not a departure but rather a continuation of his predecessor Mike Bloomberg's corporate-friendly policies. Bloomberg, who famously advertised New York as a "luxury

product,"[33] leveraged rezonings to expedite gentrification and displacement and attract a wealthier tax base, in particular by rezoning manufacturing districts along the waterfront.

Given that the real estate industry has become the single largest campaign contributor of elected officials in New York City, and given that property and real-estate-related taxes constitute more than half of the city's tax revenues,[34] it is hardly surprising that NYC officials and planning policies cater to the whims of developers and investors who leverage power to increase terrains of speculation and profit. Meanwhile, tenants in gentrifying communities have to continually fight for the right to remain in their homes and neighborhoods.

As we have found, new landlord tech systems have served as a technology of speculation and gentrification upon geographies designate for or peripheral to upzonings plans. Indeed, many of the examples that we have found of new technologies being deployed in BIPOC apartment buildings without tenant consent take place in these frontlines of gentrification. Most that we have studied happen to be in East New York, where a 190 block area was rezoned for higher-density development under the 2016 East NY Community Plan.[35] This area is primarily a low-density working class community, where 87 percent of homeowners identified as Black or Latinx.[36] A displacement study conducted in the aftermath of the East NY rezoning found that investors and predatory speculators rushed into the area and destabilized the community, offering cash buyouts to homeowners, flipping homes, and driving up prices.[37] As one real estate broker described, East New York "is the last frontier."[38]

In what follows, we examine four complexes where landlords attempted (sometimes more successfully than others) to deploy facial recognition systems. In studying Atlantic Plaza Towers, Taino Towers, and Knickerbocker Village, we note their situatedness in such frontline spatiality. We also look at the gentrification logics built into new landlord tech such as GateGuard, deployed across NYC, and systems deployed in loft housing. Additionally, we note how many of these systems, based in NYC, are now tested beyond, for instance, in San Francisco.

Company Profile:

GENETEC /FST21

PRODUCTS: ClearID, Security Center, OmniCast, Synergis, AutoVu (ALPR), FaceFirst (facial recognition).

FUNCTION: Provider of IP video surveillance, access control, and license plate recognition solutions in single platforms.

LOCATION: Headquartered in Montreal, Canada

FOUNDING YEAR: 1997

FOUNDER: Pierre Racz

HISTORY: It started as a physical security system company in 1997 and took off with its first line of IP-based video surveillance systems shortly thereafter. As the company has grown, it has bought out smaller companies in the market.

SCALE: Scale: Across multiple governments, college campuses, airports worldwide. Twenty-eight cities contract with Genetec and explicitly use their technology to manage security managed by those cities' public housing authorities.

COMPANY DESCRIPTION: "Leading technology provider of business intelligence, unified physical security, public safety, and operations. Genetec develops open-platform software, hardware and cloud-based services for the physical security and public safety industry. Its flagship product, Security Center, unifies IP-based video surveillance, access control and automatic license plate recognition (ALPR) into one platform. A global innovator since 1997, Genetec is headquartered in Montreal, Canada, and serves enterprise and government organizations via an integrated network of resellers, integrators and consultants in over 80 countries. Genetec was founded on the principle of innovation and remains at the forefront of emerging technologies that unify physical security systems."

INDUSTRY EXPANSION: Genetec maintains a "partner ecosystem" with smaller companies in order to utilize their technologies. One such company, FST21 (later rebranded to FST Biometrics), supplied the facial recognition system at Knickerbocker Village and Taino Towers. FST Biometrics and Genetec announced their "strategic partnership" in 2017. The following year, reports about the company shutting down made their way around security industry websites, but there is no indication that the Genetec security systems that utilized FST Biometrics technology have gone out of service.

Figure 2 (above):
Map: Atlantic Plaza Towers. Data sources for map layers: NYC Department of City Planning, NYC GIS Zoning Features — Zoning Map Amendments; Department of Information Technology & Telecommunications (DoITT), Building Footprint and & NYC Street Centerline.

Atlantic Plaza Towers

In 2018, two years after the East New York rezoning legislation passed, Atlantic Plaza Towers in East New York was slated to have a facial recognition entry system installed. The 718-unit two tower complex in Brownsville, Brooklyn was rent stabilized in 2017. A year later, tenants received a notice from the Department of Homes and Community Renewal (DHCR) announcing the pending installation of a new security system marketed as StoneLock's True Frictionless™ Solution. StoneLock, which serves up to 40 percent of Fortune 100 companies, along with several government entities, had struck a deal with Robert Nelson, the building owner and a self-described "tech geek," who then told the tenants that their wireless key-fob entrance system would be replaced with biometric facial recognition technology.[39]

Even though tenants had been required to submit photos of themselves to obtain fobs — and despite the presence of other troubling surveillance systems throughout the complex, including multiple CCTV cameras — tenants were informed that this new system would ensure their safety by keeping keys out of the hands of "the wrong people." As advertised to Atlantic Plaza Tower tenants by way of a flier: "Your daily access experience will be frictionless, meaning you touch nothing and show only your face. From now on the doorway will just recognize you!"[40]

Tenants did not buy this propaganda. In response they launched what became a two-year organizing campaign to prevent StoneLock's deployment. After countless meetings, alliance building efforts, media campaigns, and engagement with local and even national policy makers and politicians, the Atlantic Plaza Towers Tenants Association was successful. To date, StoneLock is not deployed in their buildings. Part of their concern stemmed from their own research on algorithmic racial bias and its long-term effects, and what tenants understood as its future gentrifying effects. Most Atlantic Plaza Tower tenants are Black and working-class, and many have lived in the building for generations. As Atlantic Plaza Tower Tenants Association organizer and floor captain Tranae' Moran put it at a press conference that we at the Anti-Eviction Mapping Project and the AI Now Institute held in December 2020, "We know that the building management wants these big, beautiful apartments back so they can remarket it to 'the new tenant.'"[41] This new tenant would be someone not generally targeted by facial recognition algorithms and the racist carceral state—likely someone whiter and wealthier.

Fabian Rogers, a fellow Atlantic Plaza Tower tenant and anti-surveillance activist who worked closely with Tranae' to organize the two buildings of Atlantic Plaza Towers, similarly explained, at a public hearing on the Key Act in October 2019: "With gentrification phasing out the diversity in neighborhoods, these technologies will be used as surveillance tactics to essentially speed up that process, allowing landlords another metric to be an intrusion among the privacy of tenants like myself and those you heard before me."[42]

At the same hearing, Atlantic Plaza Tower tenant Anita Booker maintained a similar perspective: "People with money is starting to fix up our neighborhoods to bring property value up, so the poor people like me can't afford to live here anymore. I am part of EBC, East Brooklyn Churches, and we are finding out that there are so many people losing their homes because of the changes taken place, now we have to fight to protect our privacy, where we live." She continued, "Tenants have so many issues that need to be addressed, but now we're dealing with this . . . So poor people like me can't live here anymore. I'm pissed at what's going on. So many people in the neighborhood are being pushed out . . . Please consider this a tragedy waiting to happen."[43]

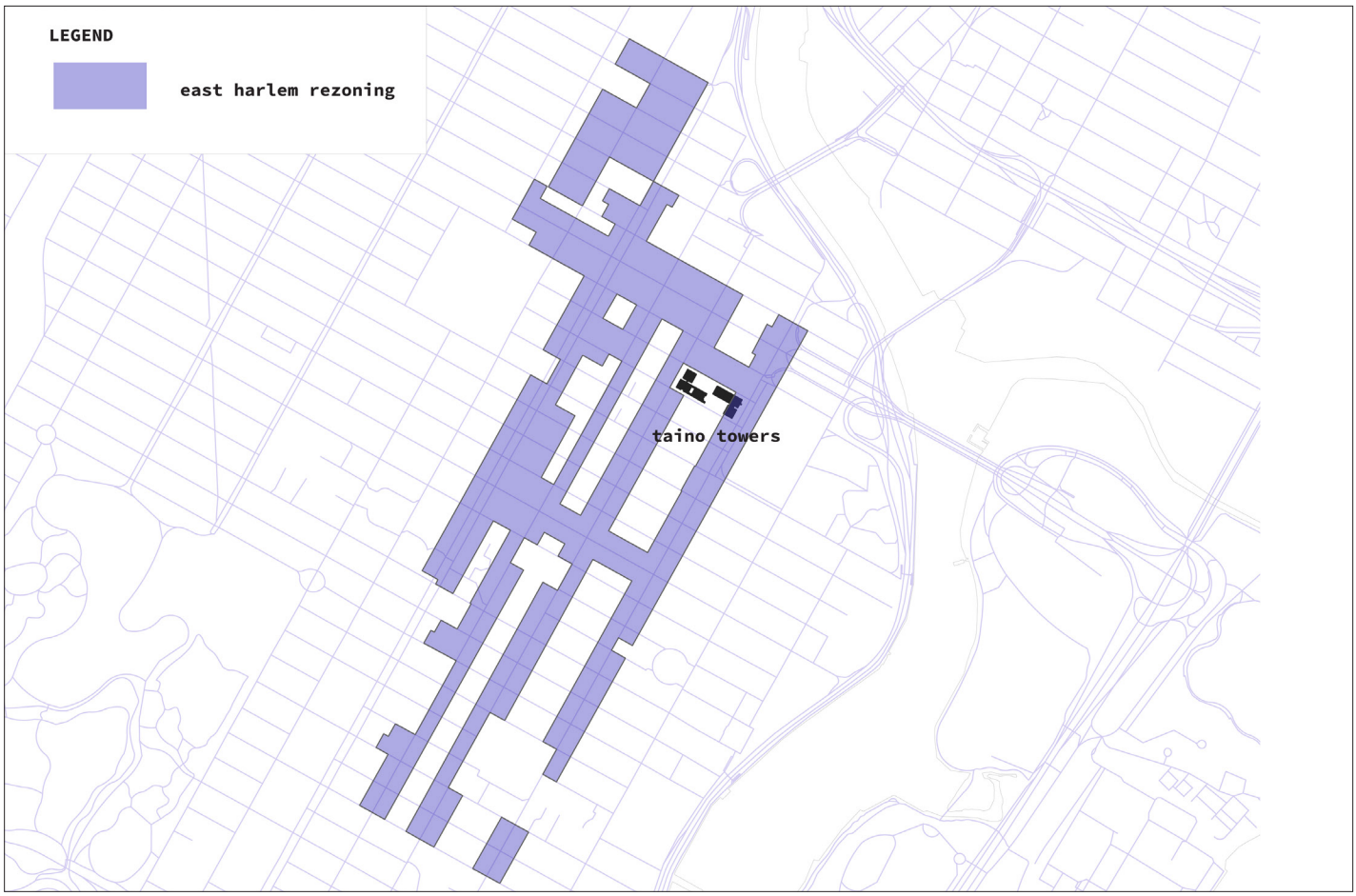


Figure 3.
Map: Taino Towers. Data sources for map layers: NYC Department of City Planning, NYC GIS Zoning Features, Zoning Map Amendments; Department of Information Technology & Telecommunications (DoITT), Building Footprint and NYC Street Centerline

Taino Towers

Similarly, Taino Towers, a federal public housing complex built in the 1970s and comprising four 35-floor towers, sits at the northeastern end of Manhattan, in East Harlem, also known as "Spanish Harlem" due to its thriving Latinx communities. Residents and grassroots groups like Movement for Justice en el Barrio started mobilizing against gentrification as early as 2004.[44] Between 2006 and 2018, the neighborhood saw a 20 percent increase in white residents moving in, while 7 percent of its Latinx residents moved out and the median rent increased by 18 percent.[45] After years of organizing, residents ultimately failed to defeat the city's East Harlem rezoning plan, which was approved in 2017 and rezoned 96 blocks of the neighborhood.[46]

It was in this context of gentrification and residential turnover that Taino Towers installed FST21's SafeRise biometric facial recognition cameras in 2013. In the words of FST21's founder, Israeli General Aharon Farkash, "Cities are crowded, often dangerous places, with the gap between rich and poor growing. . . We need a way to live safely but also comfortably next door to one another."[47] Yet while SafeRise may well be intended to keep the public around the Taino Towers safe, the safety of the building's residents was apparently not considered.

Shortly after SafeRise was installed in Taino Towers, Farkash opened up a North American office at 7 World Trade Center to increase deployment and adoption of his new technology. As he has proclaimed of FST21, "This is only the beginning . . . This is the way people will enter buildings in the 21st century."[48] Referencing the facial recognition system, which essentially transforms anyone it "sees" into a human-sized key, Farkash continued, "Just like a fingerprint, we all look and act in a unique way."

Figure 4 (above):
Map: Knickerbocker Village. Data sources for map layers: Department of Information Technology & Telecommunications (DoITT), Building Footprint and & NYC Street Centerline

Knickerbocker Village

In 2013 the 1600-unit 12-building Knickerbocker Village affordable housing apartment complex in Manhattan's Lower East Side also installed facial and motion recognition technology made by FST21. This area is home to a largely Asian-American immigrant community nestled in between the Manhattan and Brooklyn Bridges — an area known as "Two Bridges." Up to 4,000 residents, many of whom are Asian American, enter the doors of Knickerbocker Village daily. The complex is also home to the Hamilton Madison House Knickerbocker Village Senior Service Naturally Occurring Retirement Community, which offers services for the building's senior population.

Company Profile:

VORNADO REALTY TRUST /GMC

PRODUCTS: Vornado Realty L.P.

FUNCTION: Engages in the ownership and operation of office, retail, and showroom properties in the United States. It also has a subsidiary security camera system, GMSC, that controls its facial recognition products. GMSC's facial recognition system is described as using "entirely frictionless...tenant enrollment photos and facial characteristics to grant secure access" to Vornado's buildings."

LOCATION: Headquartered in Maryland but mostly operating out of New York.

FOUNDING YEAR: 1959/1998

FOUNDER: Steven Roth

HISTORY: Vornado began as a discount retail chain called Two Guys. Vornado, Inc. was founded in the 1950s and transitioned to a real estate holdings company after Steven Roth acquired it in 1980. Vornado Realty L.P. was then founded in 1998.

SCALE: Vornado owns a huge amount of commercial real estate in New York, including the buildings that house Facebook and Amazon's New York Offices. Some sources call them New York's largest commercial landlord. It is also active in Washington DC.

- Facial Recognition by GMC is installed in at least 12 of its buildings.

COMMERCIAL LANDLORD FACIAL RECOGNITION: Vornado's holdings are almost entirely office or retail, save for some high-end residential buildings in Manhattan. However, the sheer scale of their real estate holdings is informative about the spread of facial recognition access tech in New York at large — as of late 2020, Vornado planned to install facial recognition systems in all of their real estate holdings. Vornado has access to 2,500 cameras and provides the NYPD with direct access to "several hundred camera feeds" in its control. The integration of a purely private real estate holdings company with the largest police force in the world raises significant questions about future applications of facial recognition systems deployed in private residential buildings that also provide the police with data.

For years, residents and organizers with CAAAV Organizing Asian American Communities and the Chinatown Tenants Union have been organizing against a luxury waterfront development. In 2012, shortly before Hurricane Sandy devastated the area, an affordable grocery store just a block down the street from Knickerbocker Village was closed and the site was sold to a developer for $175 million.[49] The plot of land is now the site of Extell's One Manhattan Square—an 800-foot-tall glass residential building that towers over the Manhattan Bridge featuring luxury condominiums and high-end amenities. In 2016, three additional luxury towers were proposed for Two Bridges, and in 2018 the City Planning Commission approved the development process, bypassing public review processes. A New York Supreme Court judge ultimately nullified the decision due to organizing and legal action taken by local resident groups.[50] Still, the juxtaposition of Extell's shiny glass monolith looming over the 1930s-built Knickerbocker Village is a painful reminder of the tidal wave of real estate forces preying upon the area to capitalize on waterfront land values.

"Cities are crowded, often dangerous places, with the gap between rich and poor growing. We need a way to live safely but also comfortably next door to one another."

—General Farkash, former head of Israeli Military Intelligence and founder for FST21

After Hurricane Sandy, the Knickerbocker Village building manager reached out to Brian McLaughlin of The SecureCom Group, Ltd. for help in securing the building. McLaughlin then introduced them to FST21's SafeRise access control solution. Management launched a FST21 pilot program in one of the Knickerbocker 140-unit buildings, and after claiming to have received no complaints, he authorized implementation of entry systems across the complex's 11 other access points.[51] This included the installation of AXIS 3367-V network cameras, a facial recognition 5-megapixel resolution camera that captures the images of anyone entering a building. Management also installed intercom systems connecting residents with the security desk integrated with SafeRise software. Visitors not already enrolled in the system are not granted access.

"We're in an affordable housing complex. Why do we need this expensive system? [. . .] I've read many news articles about the facial recognition systems and they mention how it's biased against people of color, against women."

—Christina Zang, tenant and co-chair of Knickerbocker Village Tenant Association

Not only was the rollout of FST21 orchestrated through post-Hurricane Sandy crisis capitalist logics, it also drew on post-9/11 War on Terror rhetoric. As SecureGroup's McLaughlin boasted, "FST21's technology is probably the most exciting that I've ever come into contact with. . . This is where access is going. This is the future. As far as key fobs and hand scans, I believe in five years from now those types of technologies are going to be viewed as old and antiquated. This is the technology of the future and where the industry and the world are going. . . This is critical to counter terrorism. . . There is government funding available to increase security at these facilities, and I believe the FST21 product will take the security of these facilities to the extremely high level they need to be at."[52] This discourse points to how much urban planning and speculative development produces environments within which military technology can be tested, all under the auspices of the so-called wars on crime and terror.[53]

"We know that the building management wants these big, beautiful apartments back so they can remarket it to 'the new tenant.'"

—Tranae Moran, Atlantic Plaza Tower tenant

These examples illustrate how technologies that serve to automate gentrification and carcerality are being deployed in areas where the city is already working hand-in-hand with developers to displace communities and reshape BIPOC neighborhoods into new landscapes of profit.

Figure 5 (right):
Facial Recognition Deployment Timeline

FACIAL RECOGNITION DEPLOYMENT IN AFFORDABLE HOUSING COMPLEXES

Public and low-income housing in gentrifying neighborhoods as testing grounds for facial recognition

Sources: Data for the map and timeline was compiled through a combination of public tenant testimonies, insights from legal advocates, and media articles.

KNICKERBOCKER VILLAGE
1600 UNIT AFFORDABLE COMPLEXTWO BRIDGES, NY

TAINO TOWERS
208 LOW-INCOME UNITS
HARLEM, NY

MORRIS AVENUE APARTMENTS
182 UNITS, SET ASIDES FOR HOMELESS
MELROSE, BX

ATLANTIC PLAZA TOWERS 718 RENT-STABILIZED UNITS,
OCEAN HILL, BK

1290 RODMAN PLACE
150 AFFORDABLE UNITS
WEST FARMS, BX

2012

HURRICANE SANDY DEVASTATES WATERFRONT COMMUNITIES IN NYC, INCLUDING KNICKERBOCKER VILLAGE. FEDERAL FUNDS ARE SECURED TO MAKE REPAIRS TO THE PROPERTY.

2013-2014

FST21 INSTALLS SAFERISE FACIAL RECOGNITION CAMERAS AT KNICKERBOCKER VILLAGE AND TAINO TOWERS. FST OPENS NORTH AMERICA OFFICE AT 7 WORLD TRACE CENTER.

2017

MORRIS AVENUE APARTMENTS OPENS WITH "STATE OF THE ART" FACIAL RECOGNITION, PROVIDED BY RELIANT SAFETY.

2018

ATLANTIC PLAZA TOWER TENANTS RECEIVE A NOTIFICATION FROM DHCR INDICATING THAT NEW SECURITY SYSTEM WILL BE INSTALLED IN THEIR BUILDING (STONELOCK).

2018 CONT...

LOTTERY OPENS FOR 1290 RODMAN PLACE (1903 WEST FARMS ROAD) – A NEW AFFORDABLE COMPLEX DECKED OUT WITH FACIAL RECOGNITION SYSTEMS.

"We as residents do not want to feel as if though we are prisoners, tagged and monitored as soon as we make a move . . . We have been continuously treated like criminals in our own homes."

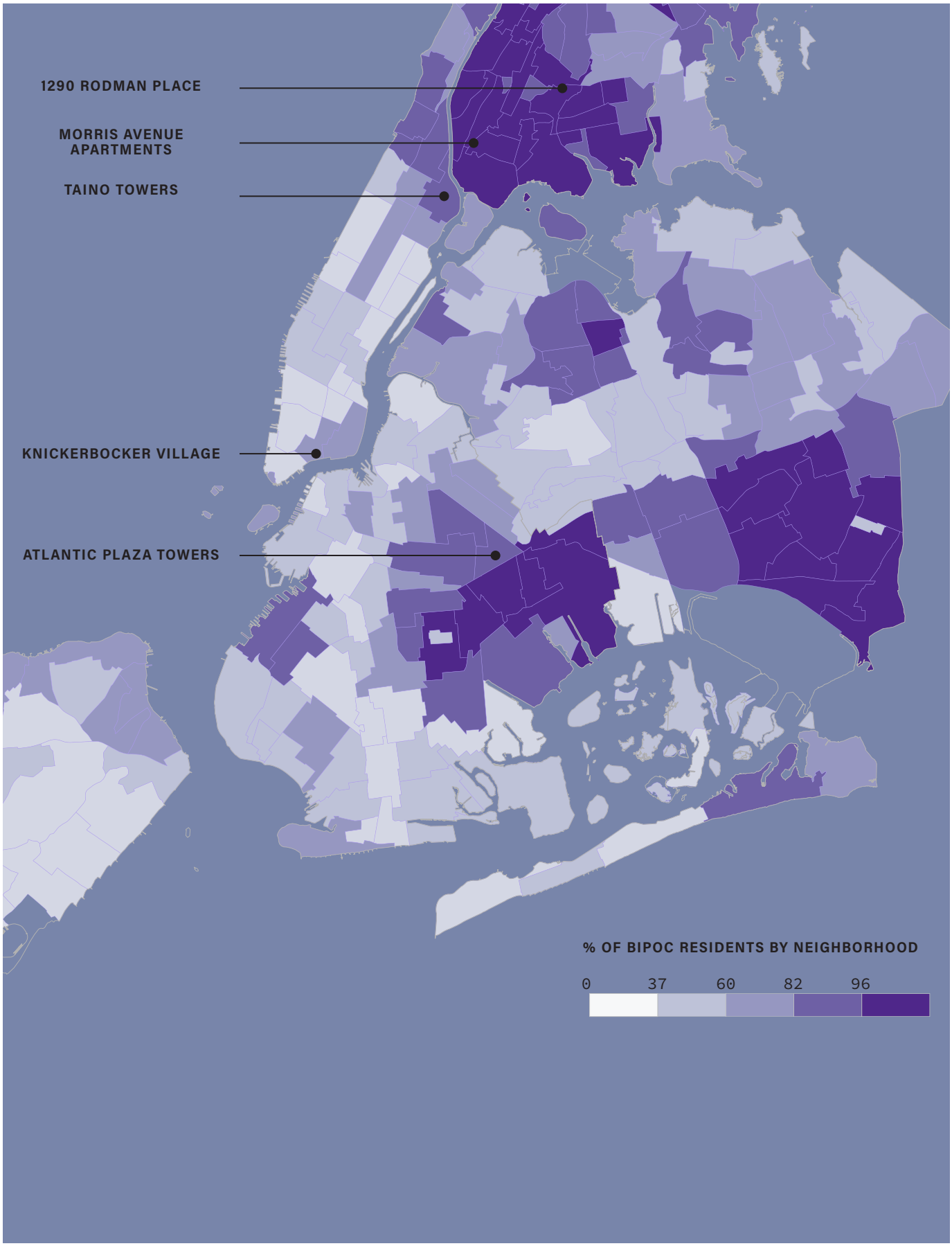
—Tasliym Francis, Atlantic Plaza Tower Tenant

"With gentrification phasing out the diversity in neighborhoods, these technologies will be used as surveillance tactics to essentially speed up that process"

—Fabian Rogers, Atlantic Plaza Tower Tenant

"An extensive DVR-security camera system with approximately 175 cameras, including a state of the art facial recognition system at the front entrance, will provide safety for tenants and the public."

—Omni New York LLC, 655 Morris Avenue


1290 RODMAN PLACE
MORRIS AVENUE APARTMENTS
TAINO TOWERS
KNICKERBOCKER VILLAGE
ATLANTIC PLAZA TOWERS
% OF BIPOC RESIDENTS BY NEIGHBORHOOD
0
37
60
82
96

Many of the examples that we have found of new technologies being deployed in BIPOC apartment buildings without tenant consent take place in these frontlines of gentrification.

Figure 6 (left):
Map of Housing Complexes

GateGuard

While landlord tech facial recognition systems such as FST21 and Reliant Safety have been deployed in large low-income BIPOC housing complexes, systems such as Ari-Teman's GateGuard have been scattered throughout many buildings in New York City, helping landlords raise rents and evict tenants. A former comedian and engineer, Teman first got into the landlord tech business after Airbnbing his apartment and discovering, upon his return, that it had been used for a sex party. Frustrated, he decided to create the "virtual doorman" system, GateGuard, which utilizes facial recognition surveillance that he claims "can make you feel safe," and which he at first suggested enables tenants to keep illegal subletters and unwelcome people from entering their buildings.[54] He has claimed that GateGuard has been installed in roughly 1,000 residential buildings throughout New York City, although Teman (like other landlord tech developers) has refused to publicize these locations. It integrates with his proprietary dashboard, PropertyPanel.xyz, which allows subscribers to gather an array of information about buildings, and to "target" properties based upon value, debt, rent stabilization, ownership, air rights, size, and other criteria.[55] Purchasers can also obtain alerts of violations and complaints, communicate with building staff, screen vendors, and integrate PropertyPanel.xyz with yet another Teman product, SubletSpy, which monitors Airbnb tenants for potential infractions. Upon purchase of GateGuard, landlords and property managers consent to Teman accessing "any property of yours, digital or real world, in any method, for any purpose," including for the purposes of plugging data into PropertyPanel.xyz. No other clarifying information is given about how this data may be used, or how it might facilitate the construction of biometric algorithms.

Teman has since gone on to advertise Guategard as a tool to deregulate apartments by catching illegal sublets and other lease violations, giving landlords a pretext with which to remove tenants in rent-stabilized units. In a sales pitch to landlords, entitled "GateGuard: 3 Steps to de-stabilize NYC units — even after the new law!," he goes on to suggest, "You CAN raise rents in NYC!"[56] According to the instructions in the email, a landlord can use Teman's GateGuard AI Doorman Intercom to photograph every visitor in the building to see if tenants are illegally subletting units. If tenants are caught breaking the rules, they can be evicted. Once tenants are evicted from rent stabilized units, the landlord can freely combine or convert the unit and thus circumvent rent control laws, remove the unit from rent stabilization, and charge a more profitable market rate. As GateGuard's sales team wrote in an email, "Use the GateGuard AI Doorman Intercom to catch illegal sublets, non-primaries, Airbnbs, so you can vacate a unit." This would allow landlords to "Combine a $950/mo studio and a $1400/mo one-bedroom into a $4200 DEREGULATED two-bedroom." Similarly, in a LinkedIn post in November 2018, Teman boasted that GateGuard had been used to evict people from over 600 rent-stabilized units in the last two years.[57]

Loft Tenants

Loft buildings are a contested form of housing in New York City, and in many ways epitomize the transformation and upscaling of urban spaces through deindustrialization and gentrification.[58] Manufacturing spaces are frequently converted into "live-work" spaces for artists, then into high-end "loft" apartments for the affluent looking for a bohemian lifestyle. This dynamic continues to hollow out formerly blue-collar manufacturing districts and turn them into cultural commodities for urban elites in search of "authentic" experiences in the form of art galleries, cafés, and boutiques. For neighborhoods in the advanced stages of gentrification like Williamsburg, where city policy and real estate interests have aggressively reshaped the terrain to maximize capital accumulation,[59] loft tenants are also finding themselves squeezed out — with building-access technology playing a pivotal role in automating their displacement.

At an October 2019 public hearing on the Key Act, several loft tenants testified that they had been forced to use key fob systems that track their entrances and exits, and raised concerns about surveillance systems aimed at detecting lease violations— particularly trying to "catch" tenants for not living in units year-round.

For example, Josh Steinbauer, a displaced loft tenant, was pushed out from his loft building in South Williamsburg. Although he was able to fight back with his neighbors and regain entry four years later, in the meantime his landlord had destroyed his possessions and made several major changes to the building, including replacing door keys with a fob system. As Josh explained during a City Hall hearing, "What's more dreadful is the incessant tracking and surveillance that these fob keys offer. The residents know from previous and ongoing lawsuits that our landlord is hostile and litigious. Personally, I know through the course of the legal battle for our loft law protection, that the landlord's lawyer tried to use my out-of-town work as a means to exclude me from coverage [of the loft law]."[60] Continuing, "To me [surveillance and tracking] is an ongoing and daily harassment. There is something fundamentally unethical about residents being subjected to tracking and surveillance simply for winning our—exercising our tenants' rights."

Similarly, artist Vanessa Berganzoli, a member of the 240 Broadway Tenants' Association in Brooklyn, recently resided in one of the last live-work lofts in Williamsburg. When the building was sold in 2019, the new landlord signaled that Vanessa and her co-tenants would soon be displaced, then installed a key-fob system made by the company Livingston Mgmt. As Vanessa described, "The letter from management stated that their reasons for the change from key to fob was an effort to 'improve security in the building, and protect the building and its residents.'" Meanwhile, the owner is currently engaged in proceedings to evict many and eventually perhaps all of the residents at 240 Broadway, casting significant doubt on the veracity of owner's claims about desiring improvements to security. What logic is there in endeavoring to "secure" a building on behalf of residents you're currently

evicting? In Vanessa's words, "A fob itself may seem harmless, but put the fob together with the surveillance cameras that have now been installed in the building, photographs of residents and their guests, and with the right technology software, it all turn into a facial recognition system used to track the details of tenants' private life. Why should landlords have access to this level of data on tenants, especially under the guise of collecting such information to improve security when in reality this same technology may also be used as a tool to monitor and potentially harass tenants?" Vanessa was never offered the option to consent to this new gentrification technology. In her words, "I was offered no choice. I was offered no information about the fob nor about the tech companies that run the system with access to my private information and whether they in turn will be providing that information to third, fourth, or fifth parties."

As tenant stories all highlight, landlords and property managers implement new facial recognition and digital surveillance systems under the pretext of augmenting tenant safety. Yet in all of these cases, the tenants themselves never complained about feeling unsafe—that is, until the new technology was rolled out. None of their associations had ever requested new surveillance systems; the calculus to implement the technology was in all cases coordinated between the landlord, property manager, and a landlord tech company—without adequate tenant input or any semblance of consent. Yet marketing by companies such as GateGuard elucidates that gentrification and profit are driving the deployment of these new systems.

Tenant organizing has also informed new and helpful legislation, which has made it harder for landlords to facilitate evictions of rent stabilized tenants. The Housing Stability and Tenant Protection Act (HSTPA) passed in 2019. Prior, it was lucrative for landlords to evict rent-stabilized tenants due to vacancy bonuses and vacancy decontrol, but HSTPA closed these loopholes.

Expansion Beyond NYC

While HSTPA offers NYC tenants some new protections, landlord tech systems intended to catch tenants for petty lease violations are being deployed beyond the city's borders. For instance, Carson is selling its digital doormen across the country—advertising a digital building access app-based system that integrates with tenants' smart phones and smart home app-based building systems. One of its newest clients being San Francisco's top evictor, Veritas Investments. While Veritas secured the deal with Carson prior to Covid, it was during the pandemic that Veritas began integrating Carson services to tenant buildings without their consent. Tenants are now voicing concerns about the costs of installing and implementing these technologies being passed on to renters (a common Veritas strategy), resulting in increased rental costs alongside increased surveillance.

Of further concern is that tenants are not given information about where the data being collected about them goes, who might have access to it, or how it could be used. Carson has suggested that it has taken security concerns into account in their system design, as tenant data is routed to the building

Company Profile:

CARSON

PRODUCTS: Carson

FUNCTION: Digital doormen and app-based property management platforms.

LOCATION: Headquartered in New York City

FOUNDING YEAR: 2017

FOUNDER: Guy Blachman. His previous startup, ActiveBuilding/MyBuilding, was acquired by RealPage in 2013.

HISTORY: Carson was started by a group of property management software and hardware industry executives in 2017. To streamline its services, Carson has partnered with Comelit, an intercom provider, and SMARTAir, an electronic key provider for multifamily properties.

SCALE: 300 buildings. Based on Instagram posts and tagged locations, Carson has been deployed in multiple cities, including NYC, SF, and London.

PRODUCT DESCRIPTION: "With the One-App Resident Experience and 24/7 remote doorman, Carson brings the full service lifestyle to unstaffed buildings, at an affordable price."

- Other services provided through the Carson app include service requests, payments, camera security for all entrances, and communications between residents and management through one integrated app, just as larger buildings have – tailored to the needs of a smaller community.

COVID-19 MARKETING: Instagram marketing has focused on the uptick in package and grocery deliveries as a new trend during COVID-19, advertising Carson as a great way to prevent package theft.

management and not to Carson. Yet this doesn't help tenants who already have tenuous relationships with Veritas and its property management system, GreenTree, both of which are well known to harass tenants.[61]

Prior to Covid, Veritas had already begun to use surveillance camera systems to surveil and target tenants. Many of these cameras were made by the company A-E-C Alarms, which is owned by Veritas CEO Yat-Pang Au's brother, Yat-Cheong Au.[62] Today these cameras are installed throughout Veritas' buildings and are connected to monitors in the manager's unit.

While some tenants do want surveillance cameras to decrease package theft, many do not and are worried about what data is being collected. Tenants are particularly troubled that these cameras have already been used to target tenants for lease violations. In one case, Veritas hired a private investigator and used camera footage to monitor the common areas to detect if a certain tenant still lived in the building. The company had alleged that the tenant had moved but remained on the lease, and thought that by using surveillance footage it could successfully win a case against the tenant. While Veritas ultimately lost, the tenant in question has since moved out because of the harassment that they faced during the case. When tenants filed a police report to obtain footage access, data was denied.

Of further concern to tenants is that often when they move out of Veritas buildings, units are upgraded so that the company can then rent them at higher rates. These upgrades usually include new integrations of smart technologies and appliances such as Amazon's Alexa, which is currently being marketed as a landlord tech solution for multifamily properties. The "Alexa for Residential" product, which debuted mid-pandemic in September 2020, is advertised as a desirable amenity that renters want and are willing to pay for.[63] Yet this, like other technological solutions, can potentially result in higher pass-through costs for tenants.

CARCERAL HOUSING

The use of surveillance technology to remove BIPOC residents from their homes and neighborhoods is far from novel, particularly in low-income and public housing. As Rashad Shabazz observes, long before Black men enter the prison system, they already inhabit prison-like environments and embody the prison industrial complex in their day-to-day lives: "What happens when people are raised in environments built to contain them? How does this affect their sense of mobility and inform their conditions of possibility?"[64] Not only do surveillance systems in public housing decrease life affirming conditions of possibility for public and low-income housing residents–for instance spaces, communities, and futures freed from containment and banishment–but they also automate processes of criminalization, displacement, and gentrification.

Domestic surveillance systems produce what Lacino Hamilton, writing from prison, has called the "gentrification to prison pipeline."[65] As he describes, "For many of my friends and neighbors and me, imprisonment did not result from inevitable 'crime,' but rather imprisonment was linked to the agendas of social planners, politicians and real estate developers, and resulted due to the extraordinary powers given to the police and courts." Put otherwise, his own incarceration was planned by those orchestrating urban redevelopment processes. By projecting small signs of "disorder" on racialized people, and making the case that these small signs prefigure future criminal behavior and thus must be immediately criminalized, so-called "broken windows policing" continues a centuries-old pattern that links policing with racial capitalism and dispossession. Broken windows policing strategies were first theorized in the early 1980s and then implemented in NYC under Police Commissioner William Bratton, used to aggressively enforce petty "quality of life crimes" such as playing music too loudly and having a broken taillight under the auspices of warding off large-scale "disorder."

Public and low-income housing have historically been New York City's testing grounds for broken windows policing. This only increased with Bloomberg's impact zoning plan, implemented under the auspices of creating micro-areas such as street corners, public schools, and public housing complexes to which more police officers could be deployed. In 2002, 1,500 new officers were stationed in two dozen such "pockets of the city" to police minor offenses, resulting in 72,000 arrests and 559,000 summonses for "quality of life" offenses such as panhandling and living in illegal encampments, allocated to low-level offenders such as window-washers, panhandlers, unlicensed vendors, public alcohol and marijuana consumers, public urinators, and (mostly) homeless persons living in encampments deemed illegal.[66] Broken windows policing thus targets those already battling contexts of gentrification and housing injustice, criminalizing poverty and targeting BIPOC residents.

Broken windows policing continues to inform contemporary geographies of gentrification today.[67] As Christina Hanhardt writes, "gentrification has proven to be ongoing and global, and policing approaches based on broken windows theory — also known as "order maintenance" policing — have been central to the cycles of devalorization and revalorization that have reshaped New York City and cities around the world."[68] Examples of this abound in which a moral panic often focused on crime will justify more virulent policing, which then overwhelmingly targets Black residents and facilitates gentrification projects. Breonna Taylor's brutal home invasion and murder by the Louisville police, for instance, has been linked to plans intended to clear the neighborhood and redevelop space.[69]

Today, home surveillance systems such as Amazon Ring help enforce this process, with the mega company maintaining roughly 2,000 contracts with police nationally. Neighborhood watch platforms such as Nextdoor and license plate reading platforms such as Flock Safety have also been linked to heightened anti-Black and "complaint oriented" policing.[70] All of this comprises what the StopLAPD Spying Coalition has called "Automating

Banishment" in a recent report linking data-driven policing, real estate development, racial terror, and dispossession.[71] Building upon this, new landlord technologies deployed by landlords in multi-family low-income and public housing automate banishment and carcerality.

In the following sections, we trace the emergence of heightened securitization of New York public housing and how cameras have incited carceral geographies in public housing. We then examine how adding new technologies of surveillance into the mix poses new risks.

NYCHA and RAD Housing

In 1998, amidst new anti-crime initiatives, the New York City Housing Authority began to receive funds from the United States Department of Housing & Urban Development ("HUD") to pay for security cameras in public housing.[72] This funding stream lasted until 2003. At first NYCHA used "stand-alone" cameras, which lacked motion sensors and did not channel into remote viewing systems. This meant that after reported incidents, NYCHA staff would manually retrieve on-site video data and copy it onto DVDs for viewing. Because of these limitations, NYCHA put a hold on installing more stand-alone cameras until the summer of 2010. Then, in 2010, a task force introduced the idea of replacing the stand-alone cameras with CCTV cameras, as well as installing key fobs and intercom systems independent from telephone company infrastructure. NYCHA began working with City Council Members who had previously helped fund cameras, requesting that past funds be repurposed for new surveillance technology. By February 2011, NYCHA had gathered $30 million in funds allocated by the City Council for enhanced camera and security systems. Following a wave of reported violence in public housing, in July 2014, the Mayor's Office announced a new $210 million plan to reduce crime in NYCHA developments. Known as the Mayor's Action Plan ("MAP") for Neighborhood Safety, the program focuses on fifteen developments that allegedly account for 20 percent of violent crime in NYCHA's 334 developments. Of the allocated funds, $50 million was slated for security enhancement technologies. By November 2014, 11,035 security cameras had been installed by private contractors.[73]

In addition to NYCHA's push for more cameras, the Rental Assistance Demonstration (RAD) program has also incentivized increased installation. RAD is a federal program enacted in 2012 that permits public housing agencies to replace their federal financial acquisition system from Section 9 (how NYCHA-owned properties have historically been funded) to Section 8 (a program that funds private landlords). This essentially means that private financing and property management can coincide with public funding. Through this, New York has combined RAD with federal housing aid, which NYCHA renamed Permanent Affordability Commitment Together (PACT). NYCHA then expanded PACT to create additional public-private partnerships and bring unfunded units to its Section 8 voucher system known as the "LLC II developments." Through RAD, New York plans to convert a third of its public housing stock, or 62,000 apartments, to private management.[74]

RAD was first piloted in the aftermath of Hurricane Sandy at Ocean Bay, a NYCHA complex in the Rockaways.[75] The Rockaways peninsula, which lies in a flood plain, was hit particularly hard by the hurricane. This was exacerbated by decades of government neglect and spatial isolation that left the area especially vulnerable. The history of NYCHA in the Rockaways goes back to the 1950s, when Robert Moses—head of the Mayor's Committee on Slum Clearance, amongst the many titles he held—turned his attention to the Rockaways peninsula as the ideal site for large-scale public housing, a place that he conceptualized as out of sight, and soon to be out of mind.[76] Many tenants displaced by slum clearance efforts in Manhattan were forced to relocate to public housing towers in the Rockaways,[77] also known as New York's forgotten "sixth borough" and often considered a "dumping ground."[78]

Without adequate public resources, the Rockaways were devastated by Sandy in 2012, with residents abandoned and left to self-organize in the face of the city's lackluster disaster relief response.[79] The city then used the havoc wrecked by Sandy as an excuse to pilot the RAD program,[80] jumpstarting the privatization of public housing by welcoming private capital as a strategy to generate "much needed funds for maintenance and repairs" such as mold remediation related to severe water damage. [81] With 45 of NYCHA's properties situated in low-lying evacuation zones,[82] the Rockaways is an illustrative example of the devastation and crisis capitalism logics that swept public housing developments across the city in the aftermath of Sandy. Today the RAD program has transformed housing across the city, for instance in the Rockaways, Red Hook, Coney Island, and the Lower East Side.

One of NYCHA's priority focus investments of its 2020 Capital Plan has been the creation of new entrances and CCTV systems, particularly as buildings undergo RAD conversion. That said, beginning May 1st, 2020, the city mandated a 6-month moratorium on city funded capital projects due to Covid-19. Development was relaunched in November, with projects pushed into the spring of 2021. In January, 2021, $14,954,000 was proposed for new CCTV cameras in RAD developments.[83]

In examining planning documents and reviews, we have counted 15,419 apartments undergoing RAD conversion through this 2020-2021 period, all of which entail security system improvements. In Brooklyn alone, nine large apartment complexes undergoing RAD conversion, known as the Brooklyn Megabundle, are receiving 2,193 cameras for their 2,625 units. All buildings will receive "new high-tech intercom" and security camera systems in the common areas, as well as additional CCTV cameras and surveillance "command centers"—surveillance centers that are described with military language. Buildings are receiving an average of .58 to 1.03 cameras per apartment. Two command centers to monitor footage are also being deployed, one at Independence Towers and one at Williams Plaza. Other buildings in this megabundle include Armstrong I and II, Weeksville Gardens, Berry Street-South 9th Street, Marcy Avenue-Green Avenue Sites A and B, and 572 Warren Street. The new improvements in these buildings are being led by Brooklyn Housing Preservation Experience LLC, a joint venture

Company Profile:

STONE-LOCK

PRODUCTS: Stonelock True Frictionless Solutions

FUNCTION: Facial recognition entry systems secure biometric access control solutions.

LOCATION: Overland Park, KS

FOUNDING YEAR: 2011

FOUNDER: Colleen Dunlap

HISTORY: StoneLock spent nearly three years developing the algorithm and software/hardware for their products. They officially launched their products in 2013, growing over the next two years to bring them into the physical security market, partnering with HID, and PAC systems including Lenel, Honeywell, and Tyco. In September 2017, StoneLock launched a new platform called StoneLock Gateway, which allows for the seamless management, sharing, and deployment of biometric data across different PAC systems.

SCALE: Services hundreds of large Fortune500 companies. Attempted to install their facial recognition system at Atlantic Plaza Towers.

PRODUCT DESCRIPTION: "StoneLock delivers a frictionless, trusted, and revolutionary approach to secure facial authentication."

COVID-19 MARKETING: Based on an April 1, 2021 Twitter post, they appear to be marketing the need for "touchless" entrance in the wake of Covid: "Requests for touchless facial biometric readers are on the rise as companies prepare for their employees' return to work. The StoneLock GO reader now integrates with your current or future @KantechAccess Control systems."

between The Arker Companies, Omni New York LLC, Dabar Development Partners, and Bedford Stuyvesant Restoration Corporation.[84]

Allegedly, these new RAD CCTV cameras and command centers are being installed to reduce crime. According to Joseph Camereta, vice president of Wavecrest Management Team Ltd. (which co-developed a previous RAD redevelopment project at Bayside Homes in the Far Rockaways in 2018), a combination of new surveillance cameras, electronic locks, outdoor lighting, and a private security consultant have made a huge difference in crime.[85] Bayside, home to 400,000 residents, reported no crimes in the first six months of 2018, compared to 23 felonies the first six months of the prior year. While some tenants do support CCTV camera installation as means of making their buildings safer, many others see increased surveillance as a means of installing carcerality in their homes and communities.

Companies such as Wavecrest have been in the business of "improving" apartment complexes for years. They began in 1979 at Wavecrest Gardens in the Far Rockaways, where they took over the management to abet problems with vacancies, rent arrears, bad debts, and vandalism. In 2006 New York City's Department of Housing Preservation and Development (HPD) requested that they manage Noble Drew, a 385-unit development located in the OceanHill Brownsville section of Brooklyn not far from Atlantic Plaza Towers. In their words, "When we began, the development had approximately 100 'legal' tenants without leases, over 100 vacant apartments and more than 100 'squatters.' Only a few tenants were paying rent. The complex had a high rate of crime and major drug activity. . . With the assistance of three armed security guards (retired NYC police officers) and HPD's enforcement unit . . . In less than one year, approximately 200 tenants had current leases, we boarded up and secured over 150 vacant units and had reduced the squatters units to less than 30."[86] This testimony not only highlights their intimate collusion with law enforcement, but also their model of displacing those unable to pay rent, the "squatters," and rendering them criminal. It is unsurprising that Wavecrest would continue to "upgrade" their business model, today installing facial recognition cameras made by companies such as Reliant Safety (a project of Omni New York LLC), known for their illegal sublet detection biometric cameras.[87]
Morris Avenue Apartments

The mega-landlord Omni New York LLC has a portfolio of over 9,000 operative security cameras in roughly 13,000 residential units, which record 24/7-hour footage through a Security Operations Center. This center provides instant access to live and recorded video footage. Their cameras are made by Reliant Safety, which has specialized in surveillance systems for affordable and low-income housing since 2009 and claims to manage over 20,000 residential units nationally. This includes Morris Avenue Apartments at 655 Morris Avenue in the Bronx, a developed affordable housing complex that began taking new tenants via a lottery system in 2016. While the Morris Avenue Apartments listed its new "state-of-the-art" facial recognition system as a perk to attract applicants, it was less forthcoming about how its system could work to abet eviction.

Illegal sublet detection systems such as this reinforce anti-Black and plantation histories of landlordism in the US, in which landlords maintained policing power to "catch" slaves and tenants breaking what had become white supremacist property law.

Reliant Safety's facial recognition system is advertised as helping to "eliminate illegal subletting with a two-pronged approach. We directly collect intelligence from tenants or site staff. We then verify the identity and entrance credentials of tenants using camera and access control systems, including biometrics. Biometric detection is a form of frictionless access control that combines facial recognition and body movement analysis. It provides 99.7% accurate, in-motion identification using multiple biometric characteristics as residents walk through an entry point."[88] Illegal sublet detection systems such as this reinforce anti-Black and plantation histories of landlordism in the US, in which landlords maintained policing power to "catch" slaves and tenants breaking what had become white supremacist property law.[89] Today, Reliant Safety's Security Operation Centers are "manned by professionals capable of handling security incidents from detecting incidents, tracking individuals as they move around a complex, remotely coordinating operations with police and emergency services, and providing usable evidence for prosecution when needed."[90]

Morris Avenue Apartment maintains 35 special set-aside units for families coming out of homeless shelters.[91] Punitive surveillance systems installed in the building thus reinforce cycles of carcerality, criminalizing those already bearing the brunt of housing insecurity. Far from enhancing tenant safety, facial recognition deployment in this context perpetuates a carceral environment and harmful narratives that cast homeless New Yorkers as deviant and problematic.

Digital Prisons

While Atlantic Plaza Towers is not public housing, it was built for middle-income families as part of the state-run Mitchell-Lama program in the 1950s. It remains relatively affordable today, having recently gained rent stabilization status in 2017. Its past entanglement with the state meant that it, like NYCHA housing, had already had CCTV surveillance cameras installed long before the landlord attempted to install StoneLock facial recognition in 2018. Further, tenants had already been forced to submit photos of themselves in order to obtain their existent key fobs. As such, tenants at Atlantic Plaza Towers had plenty of experience with domestic surveillance before their fight against facial recognition began.

As Tranae' Moran has explained, just to get into her own apartment she has to pass seven different cameras that record her every move. She worries about what this means for her young son growing up in such a surveilled environment. "There are cameras everywhere and it feels like a juvenile detention center," she said. She views this environment as a system of "digital slavery," a carceral world in which the enduring legacies of anti-Black surveillance, racialized property regimes, and racial capitalism come together to turn her home into a prison.

This gets at what Michelle Alexander describes as the expansion of the prison into the space of the home, whereby "'mass incarceration' should be understood to encompass all versions of racial and social control wherever

they can be found, including prisons, jails, schools, forced 'treatment' centers, immigrant detention centers, as well as homes and neighborhoods converted to digital prisons."[92] Put otherwise, homes and schools become rendered as prison space through new digital technologies of containment.

Amidst ongoing threats of gentrification and corollary placelessness, not to mention existing anti-Black surveillance in Tranae's building, Nelson Management attempted to install StoneLock facial recognition building access system. Safety and security were not major tenant concerns, yet the new system was being imposed under the auspices of excluding "the wrong people" from the building. As she elaborated, "they did not want to get rid of all of the current surveillance. They wanted to add facial recognition on top of it. So not only do I have to now tap my key fob in all these places, but I now have to scan my face as well. And it has to approve, give me the approval, that I am who I say I am to get into my home."

More than half of the tenants in Atlantic Plaza Towers tenants felt similarly and organized against Nelson Management Group to keep StoneLock implementation at bay. Yet they were met by further digital surveillance measures intended to curb their organizing. For instance, after receiving notice of the landlord's request to install facial recognition cameras, several tenants distributed flyers to fellow residents in one of the building's lobbies. Several days later, the tenants who had been organizing received full color surveillance camera print-outs of them standing in the lobby. Their apartment numbers and timestamps were written on the photos, which were slipped under their apartment doors. They also received accompanying letters asserting their behavior was not allowed and they could be fined for loitering. The tenants were fully within their rights to organize, and this invasive image capture was simply an intimidation technique. Yet this was not the first time that the existing CCTV cameras were used to target tenants. Nelson Management had already used camera footage to financially penalize minor infractions such as "not separating recycling."

Racist Recognition

Not only has CCTV camera surveillance been disproportionately deployed in NYCHA, RAD, and low-income and affordable housing complexes, but landlord tech companies have joined with city planners to test out new facial recognition entry systems in low-income and affordable housing. We have traced this process to 2012 in Knickerbocker Village in the Lower East Side with the deployment of FST21, then in 2013-2014 to Taino Towers in Harlem where more FST21 facial recognition was deployed. In 2017, the corporate landlord Omni New York LLC implemented "state of the art" facial recognition at Morris Avenue Apartments in the Bronx. Then in 2018, Nelson Management was slated to install StoneLock Frictionless Solutions at Atlantic Plaza Towers in Brownsville.

It is not accidental that new facial recognition landlord tech systems have been rolled out in large low-income and affordable apartment complexes with majority BIPOC residents. The idea of using Black people as "test

subjects" is of course nothing new, with infamous medical experiments such as J. Marion Sims' surgical procedures on enslaved Black women, to the United States' 40-year Tuskegee Syphilis Experiment on Black men in Alabama. As Ruha Benjamin argues, these histories continue to play out in the development and implementation of contemporary technologies today.[93]

When it comes to anti-Black facial recognition systems, there are numerous historical precedents that link these with modes of racialized surveillance developed in the crucible of plantation slavery. For instance, colonial-era Lantern Laws, which Simone Browne describes as a "supervisory technology," were used to stop and criminalize any Black, Mixed Race, and/or Indigenous person caught walking after dark without a lantern, literally criminalizing the act of "not being visible" to white authority.[94] This, she remarks, bears significant resemblances to stop-and-frisk policing practices today. R. Joshua Scannell has extended Browne's argument to connect historic Lantern Laws with the NYPD's contemporary practices of militarized policing, which use high-intensity artificial lights trained on Black and brown neighborhoods at night, subjecting racialized subjects to violent illumination.[95] And indeed, these lighting units are often deployed alongside new facial recognition and RAD CCTV cameras updates, making privacy and obscurity nearly impossible.[96]

In 2019, in this already criminalized and surveilled context, the NYC Economic Development Corporation released a proposal request to test new landlord tech products in NYCHA buildings. Per Vicky Been, NYC Deputy Mayor for Housing and Economic Development: "We've been saying to the proptech industry, 'Look you've got a resource here. Let's talk about how we can make our buildings available to test out some ideas.'"[97] Not only is this misleading, in that the tech is not being tested on physical buildings but rather the people living in them, but the tenant test subjects are not included in designing this process. Neither are they asked for their consent, nor compensated for their participation as test subjects in these experiments. They are also not told how the privacy and security of their highly sensitive biometrics data will be handled.

It's notable that this experimental design would never pass Institutional Review Board (IRB) protocols required in academic scientific studies, even as it is highly normalized in contexts of urban redevelopment. As Christina Zhang from Knickerbocker Village asked regarding the biometric data collected through FST21: "How is this data being used? . . . Like how is it being stored? Is management selling the information . . . to private investigators? Are they working with NYPD? Are they working with ICE?" These are the kinds of basic questions any researcher would be forced to answer for an Institutional Review Board. Although Christina has asked these questions to her building management and to the city, she has yet to get an adequate response.

With surveillance systems such as Amazon's Ring well known for handing data over to law enforcement,[98] Christina's questions about where the data

Company Profile:

LATCH

PRODUCTS: Latch

FUNCTION: Keyless entry, guest management, and package deliveries.

LOCATION: Headquartered in New York City

FOUNDING YEAR: 2014

FOUNDERS: Brian Jones, Luke Schoenfelder, Thomas Meyerhoffer

SCALE: They have a presence nationwide, including at least 1,000 buildings in New York. In 2019, Latch expanded their in-home deliveries to Atlanta, Chicago, Los Angeles, Houston, Dallas, Washington D.C., Philadelphia, Boston, Miami and Seattle through a partnership with UPS. Their website says "today, 1 in 10 new apartments in the US are being built with Latch." They work with some big names in the real estate industry, like Tishman Speyer, Related, and Avalon Communities.

PRODUCT DESCRIPTION: "Latch is a full building access system that allows you to leave your keys behind and unlock doors with a smartphone, or Doorcode. Additionally, you can easily share access with your friends, family, and services, like cleaning, by sending them Doorcodes via the Latch App. The Latch Lens also takes pictures of your guests to provide a history of who entered your space and when."

- "Unlock with the App, your Apple Watch, a Keycard, or a door code."
- Smart lock, helps with UPS package deliveries, enabling dog walkers and cleaners to come in.

goes deserve rapid answers. In the words of Tasliym Francis of Atlantic Plaza Towers, who spoke to the fear that residents have about the possibility of their data being used to abet cycles of anti-Black criminalization, "We as residents do not want to feel as though we are prisoners, tagged and monitored as soon as we make a move… We have experienced disrespect, and have been continuously treated like criminals in our own homes … Our biggest danger is that this technology will get into the hands of third-party entities, who will get unsolicited access to our biometric information, and ultimately we will be placed in damaging systems such as perpetual police lineups."

Despite known harms associated with facial recognition, the number of granted patents associated with it has only continued to grow, with 631 in 2015 and 1,497 in 2019.[99] Due to the known racism encoded in facial recognition algorithms, tenants—particularly women of color—have expressed warranted fear and distrust about these new landlord tech deployments.

There is a rich body of critical race and technology studies research dedicated to the biased impacts and histories of facial recognition. As Joy Buolamwini and Timnit Gebru have illuminated in their informative Gender Shades report,[100] machine learning algorithms often discriminate based on race and gender. Looking at two facial recognition benchmarks, they found datasets that facial recognition systems are measured against to be overwhelmingly composed of lighter-skinned faces. Meaning that facial recognition systems performance was judged primarily on its ability to detect lighter faces, particularly male-looking faces. This, they found, resulted in a large error margin for algorithmic recognition of darker-skinned women (34.7 percent), and only an 0.8 percent error rate for lighter skinned men. Similarly, the US National Institute of Standards and Technology (NIST) tested 200 of the most common facial recognition systems in the industry on "one to one" matching (which involves matching an given image of a face to a specific person in a database — matching face to ID), as well as "one to many searching" (which involves determining if a given image of a face appears in a database full of facial images, using facial recognition to "find" whether someone is represented in a database, something common in police use).[101] NIST determined that not only were one-to-one matching systems disproportionately responsible for false positive matches for Asian and Black faces over white faces (at times by a factor of up to 100), but also that US-developed algorithms gave Native Americans the highest false positive rate. One-to-one matching meanwhile had the worst false positive rates for Black women, which puts Black women in the highest risk category for being falsely accused of a crime.

Not only are these systems faulty on a technical level, but the over-policing of Black people also increases risks of false positive rendering. In Ruha Benjamin's words, "At the heart of discriminatory design is this idea that we can create technological fixes for social crises . . . Rather than dealing with the underlying conditions, we create short-term responses that get the

issue out of sight, out of mind."[102] In other words, it's not just a matter of fixing discriminatory algorithms through more inclusive machine learning systems; it's about abolishing the very conditions that produce algorithmic racism, and racialized inequality across the board.

As a Black woman resident of Atlantic Plaza Towers, Tranae' aptly described her concerns about potential algorithmic racism during a Landlord Tech Watch press conference: "I could be put into a virtual lineup while I'm sitting at my desk at work and while my kid is at school. And I'm at work, but I'm in a virtual lineup. The algorithm says today — she did it today, that is her biometric data. It matches — she is the criminal. I go home and then the police are waiting for me to take me away because I have been convicted of this crime by algorithm. But it wasn't me because I was at work! But the algorithm said that I did it. So now we have to fight that. And now I have to fight an algorithm and prove to the algorithm that it is wrong. And society's thinking, 'algorithms are science.' We just trust science and the algorithms so much, but we can't do that with people that look like me. We can't because there's a bias in the algorithms already that it's telling this thing that I am a criminal, because that has, that is what it has been taught this whole time. It takes on the bias of our society, which we have a lot of work to do. So, we can't fully trust these algorithms, there's no way."

Christina Zhang, organizer at Knickerbocker Village and co-chair of the Knickerbocker Village Tenant Association, has also testified to the racism of the FST21 facial recognition systems that was installed in her Lower Eastside building complex in 2014: "So, many tenants have complained at KBTA (Knickerbocker Village Tenant Association) meetings that the technology frequently does not work. Like you're doing this dance (to be recognized). You look at the camera to recognize, and people-and then like also, you know, people just like follow other people in if they—if the cameras don't work, and then other tenants have complained that the cameras at the courtyards are especially problematic because, you know, the sunlight hitting the lenses doesn't cause—doesn't make them work properly, and the guards usually end up like buzzing people in. They don't verify whether they're tenants or not. People go in and out. Other tenants have mentioned that these cameras don't work late at night so the—there is no security guard in there and they're just stuck waiting or they have to like, you know, walk around that block to get in through the front gates."[103] She and other tenants in the building are also worried about the racial biases built into the technology: "I've read many news articles about facial recognition systems and they mention how it's biased against people of color, against women. Knickerbocker Village is about 70 percent Asian. Actually, one of my cousins was able to get into my building and she is not a tenant. So, it matched her with . . . someone who lives there."[104] This exemplifies the false positives endemic to racist algorithmic matching systems, which conflated Christina with her cousin. For her, this false positive matching technology is "Orwellian."

In other words, despite its futuristic claims, in more ways than one the technology just doesn't work. And it fails to work in ways that predictably harm and punish racialized and minoritized populations. Rather than create even the feeling of safety for residents, it makes residents feel less safe. As Christina put it, "Management insists that the cameras were installed for safety, but how is it making it safe when people can just follow other people in."[105]

Carceral Outcomes

False positive matching perpetrated by landlord tech systems replicate many of the problems of predictive policing, and can similarly result in the over-policing and criminalization of BIPOC residents. And often enough, landlord tech systems are integrated with law enforcement, creating data flows and surveillance networks that compound these harms. For instance, when landlords license Reliant Safety's facial recognition systems, they also get access to a Mobile Response Team consisting of former law enforcement officers and military personnel. The team liaises with property management and law enforcement, and provides intelligence from informants via the anonymous Tenant Tips Hotline, along with video footage.[106] Reliant Safety's landlord tech system utilizes advanced biometrics, artificial intelligence, and data analytics marketed as reducing the need for physical security while minimizing maintenance and repair costs. The company even includes praise quotes from NYPD officers on their website, such as:

> *"The 73rd Precinct would like to offer our gratitude for the ongoing support we are receiving with access, information and identification of individuals who are involved in illegal activity."* — Eduard Dombrovischi, Lieutenant, 73rd Precinct, New York City Police Department

> *"On a multitude of occasions your staff's excellent service has assisted officers/detectives of the 46th Precinct with key video evidence that has later on helped attain convictions and indictments for violent criminals at the Bronx DA office."* — Joseph Ayala, Police Officer, 46th Precinct, New York City Police Department[107]

Reliant Safety also displays a number of "case study" videos on their website, showing tenants breaking their leases or the law. Viewers can watch the videos and then learn about how the surveillance was used to either prosecute tenants, charge them for lease violations, or evict them.[108] These are categorized as either: lease violations, criminal activity, insurance claims and liability claims, or narcotics. "Chains of events" are included alongside the video, providing a brief summary of the incidents viewers are able to watch in the videos. Some of which fail to blur the face of the surveilled tenants, all of whom live in the Bronx. Here are a few representative examples:

CHAIN OF EVENTS: Unauthorized guest not in possession of entrance key breaks glass on entrance door.

OUTCOME: Guest arrested for criminal mischief; a lease violation issued to tenant of record for the actions of their (illegal) guest.

CHAIN OF EVENTS: Tenant breaks hallway glass window.

OUTCOME: Tenant arrested for criminal mischief; lease violation issued to head of household for the actions of her child.

CHAIN OF EVENTS: Pursuant to intelligence received via the Reliant Tenant Tips Hotline, tenant observed selling narcotics to unidentified male.

OUTCOME: Apartment was raided by police. Tenant was charged and is currently in eviction process.

CHAIN OF EVENTS: NYPD Narcotics Division conducts warranted search for narcotics sale, following intelligence provided by the Reliant Tenant Tips Hotline.

OUTCOME: Illegal resident (son of head of household) arrested for sale and possession of narcotics.

CHAIN OF EVENTS: Tenant observed slipping and falling in hallway, claiming the cause to be faulty flooring. Tenant's claim of fall caused by faulty flooring is challenged by video evidence.

OUTCOME: Investigation revealed no issues with the flooring, indicated possible false claim.

In all of these videos, which amount to marketing material proclaiming the efficacy of Reliant Safety's landlord tech systems, the tenants, all of whom are BIPOC, are portrayed as subhuman and criminal. This exposes the political economy driving the production and sale of landlord tech. Whatever the pretext, whether it be convenience or safety, this is an industry that is built to sell profit and surveillance to landlords, not to serve tenants.

Robots

The NYPD took domestic facial recognition surveillance to a new level in April of 2021, when they "unleashed" a robotic "dog" named Spot, but called Digidog and made by the military robotics company Boston Dynamics, in a Manhattan NYCHA complex on East 28th Street. They claimed that the animatronic surveillance device was necessary to resolve a domestic dispute/hostage situation. According to Boston Dynamics, this device was an "agile mobile robot that navigates terrain with unprecedented mobility, allowing you to automate routine inspection tasks and data capture safely, accurately, and frequently."[109] Marketing suggests that the robot has the ability to collect "limitless data,"[110] though there is no clear explanation given by the company as to what this means. The NYPD had already forged a leasing contract for $94,000 with Boston Dynamics, being one of 500 contracts for Spots across the country. This takes place amidst ongoing calls across the country and budget cuts to essential services.

There had been no public outreach to tenants and no consent process before deploying the robot in NYCHA housing.[111] Many expressed fear upon DigiDog, which was adorned in black and blue police colors. As

Company Profile:

BUTTER-FLYMX

PRODUCTS: ButterflyMX

FUNCTION: Several smart video intercom products.

LOCATION: Headquartered in New York City

FOUNDING YEAR: 2014

SCALE: 5,000+ properties worldwide, including multifamily, commercial, student housing, and gated communities. They serve big names in the real estate industry like Jamestown Properties and The Chelsea Apartments in NYC; Avalon Communities in SF.

PRODUCT DESCRIPTION: "ButterflyMX transforms any smartphone into a mobile video intercom system. Once the intercom has been installed in the building and the app has been downloaded, visitor calls from the intercom will come through the app as a video call wherever you are, so you can view the visitor before granting access to the building." "ButterflyMX's system also provides for virtual keys, messaging options, and digital timestamps. These systems cost between $5,000 and about $7,000 to install, depending on specifications, building size, and other variables."

COVID-19 MARKETING: They released a report based on new renter trends triggered by the pandemic - according to them, we have shifted from wanting convenience-based amenities to safety-based features, especially in multi-family housing.

- Excerpt: "A year for the books, 2020 has dramatically reshaped the real estate landscape — especially multifamily housing. COVID-19 introduced social distancing, new security concerns, and a push for contactless solutions. As a result, renters' priorities have shifted. Before the global events of 2020, highly-amenitized living focused primarily on convenience. Now, safety-focused features are the key to high rental rates and lower turnover."
- They also advertise virtual keys and self-guided tours as a solution to apartment tours during COVID-19.

one resident reflected after the shock wore off: "We're powerless. . . We're like the scapegoats in society. To further read that they are trying it out and testing it out on us — everything that happens bad in our community happens here first."[112] According to Albert Fox Cahn, founder of Surveillance Technology Oversight Project, "The NYPD is turning New Yorkers into surveillance guinea pigs. . . We keep hearing the same rhetoric from Mayor de Blasio that he believes in community-based policing, but I don't see any community that's calling for these creepy robots."[113] After much backlash from the community, the NYPD agreed to cancel its contract with Boston Dynamics, yet the ramifications of new forms of militarized policing and data collection in public housing remains.

POLICIES

History of Surveillance in Housing

Video surveillance originates as far back as 1956, where it was deployed by police departments across the United States for the first time.[114] The 1960's saw the rise of CCTV cameras deployed both in the public sector by police, and in the private sector by businesses and private landlords.[115] In 1997, 13 cities had their own public surveillance programs, by 2016, 49 percent of local police departments in the United States reported using CCTV.[116]

The proliferation of the use of CCTV and video surveillance in private residential buildings has been highly normalized despite the ongoing concerns of housing advocates. Security cameras have become so common that an estimated 58 percent of NYCHA public housing developments have cameras. Landlord-tenant law, and therefore surveillance policies, vary state to state. but most jurisdictions view tenant surveillance as part of the common law duty of a landlord to provide security for their tenants.. Under this duty, in some states, landlords can be held liable for failing to provide security when that failure resulted in injury to a tenant. As such, courts have long recognized that landlords have the right to install surveillance cameras, intercom systems, and other precursors to landlord tech on their properties to assure the safety and security of their tenants.[117]

In general, tenants have a reasonable expectation of privacy inside their dwellings, but landlords are free to surveil common areas on their properties, where the same rights don't exist.[118] In almost all states,security cameras are allowed so long as landlords notify tenants prior to installation and as long as cameras that are placed in common areas are visible so that tenants know they are being surveilled.[119] Outside of the landlord-tenant law context, some states have unlawful surveillance laws that criminalize invasive spying by anybody.[120] Surveillance by landlords also, in general, must comply with state and federal wiretapping laws, which generally prohibit audio recording of tenants.[121] Aside from these common-law protections,

tenant surveillance is largely unregulated, which contributes to the furious proliferation of landlord tech and the expansion of the landlord tech sector.

The following review consists of a summary of the policy landscape in the main areas that intersect with landlord tech: biometric surveillance regulation, data privacy, and landlord-tenant law. After an overview, we discuss how existing policies and laws might be utilized in the fight against landlord tech, and give recommendations for the tenant's rights movement going forward.

The use of surveillance in public housing, in particular, has been encouraged by legislators and law enforcement officials with the aim of deterring crime. Functionally, this means that communities of color have largely borne the brunt of the use of residential surveillance, and have directly suffered the consequences.[122] Legislators have the most say in the use of technology in the housing context when it comes to publicly funded housing. As demonstrated by the New York City case studies above, municipalities that have an interest in testing new forms of surveillance often do so at the expense of residents of publicly funded housing. The public-private partnerships that fuel public housing in New York City leave these types of residences even further vulnerable to private technology investment with full blessing from the municipal government. But paradoxically, because governments have the most oversight over public housing, it also means that regulations of landlord technology exist almost exclusively in the public housing context.

Federal Regulation of Facial Recognition Landlord Tech

Technology has far outpaced regulation in the recent past, and as a result regulating the use of technology is notoriously fraught.The same is true of the technology used by landlords, the vast majority of whom are private, not government actors. Because of the inherently local nature of housing, the use of landlord techn will invariably be most affected by state and local ordinances that govern the use of such technology. When it comes to housing, the federal government's ability to regulate the use of technology on physical properties only extends to buildings under its purview as a "landlord" – buildings that receive federal affordable funding, such as Section 8. However, the type of tech that landlords use is facing increasing scrutiny, even if not solely in the housing context.

While federal legislation rarely addresses the use of tech in housing specifically, many legislative proposals address key components of landlord tech: facial recognition, automated decision making, algorithms, AI, and data privacy. Despite a flurry of bills introduced to deal with these issues, little has actually passed Congress. Additionally, federal agencies have increased the pace at which they're using their existing powers to regulate technology in this space, even in the absence of Congressional legislation.

Landlord tech, and biometric and AI-based technology in general, are largely unregulated at either the state or the federal level. Regulations around

technology in the housing sector, specifically, remain lacking even as the industry is constantly expanding.[123] After the incidents at Atlantic Plaza Towers gained national and international attention, lawmakers (informed by tenant organizers) introduced legislation in 2019, and again in 2021, but it has not advanced to become law. The No Biometric Barriers to Housing Act of 2019 was introduced by Senator Cory Booker and U.S. Representative Rashida Tlaib (and in 2021 by Reps Ayanna Pressley, Yvette Clarke, and Rashida Tlaib) as the first federal law that would regulate facial recognition in any context.[124] The legislation would have banned the use of multiple forms of biometric-based surveillance, including facial recognition but also any other form of biometric data collection and use including fingerprint/palmprint and retina/iris scanning.[125] Crucially, the bill also contains a mandatory reporting section, which would require public disclosure of the use of facial recognition or biometric recognition technology. The law would only apply to housing funded by the Department of Housing and Urban Development (HUD). Although the bill includes an outright ban, it contains no specific relief or cause of action, which would make enforcement difficult. There are also no specified forms of relief (such as the authorization of money damages). The reporting function is similarly weak: while the bill asks for retroactive information about already-installed forms of facial recognition, it does not include any requirements for reporting on the removal of those systems.

There have been a number of bills introduced for the regulation of facial recognition technology.The Facial Recognition and Biometric Technology Moratorium Acts which seeks to place a moratorium on the practice in general, has been introduced into congress two years in a row. Several other bills seeking to regulate the use of technology in the commercial context have been introduced, including the Ethical Use of Facial Recognition Act of 2020, the Facial Recognition Warrant Act of 2019, the FACE Protection Act of 2019, and the Commercial Facial Recognition Privacy Act of 2019. None of the bills specifically target the use of such technology in housing, and none have been passed into law. The Facial Recognition and Biometric Technology Moratorium Act, does not specifically prohibit the use of facial recognition in housing but does prohibit the use of the technology by any federal government entity, and conditions federal funding for state entities on the enactment of their own moratoria.[126]

Bills regulating other automated decision-making (ADS) systems have been introduced in Congress for years. H.R. 2644, The Reasonable Policies on Automated License Plate Readers Act was introduced in 2013, and similarly never made it out of committee.[127] The pace of regulatory proposals picked up in 2021, and even more so after the Facebook Whistleblower hearings of the Fall of 2021 brought increased scrutiny to the use of algorithms by online platforms. More than 30 bills seeking to regulate the use of algorithms were put forth in 2021, although none came to pass.

Some of these bills included:

In May 2021, Senator Markey and Congresswoman Matsui introduced the Algorithmic Justice and Online Platform Transparency Act, which sought to create a commission to study the impact of discriminatory algorithms on the national economy, and sought to establish safety and effectiveness standards for the use of algorithmic processes.

In early 2022, Senators Booker, Wyden, and Clarke introduced the Algorithmic Accountability Act of 2022. The Act seeks to direct the Federal Trade Commission to promulgate regulations for ADS and "augmented critical decision processes" that have material effects on a consumer, which would have clear applications in the landlord tech context.[128] The same Act had been proposed in 2019 but did not advance.

Prior to the Facebook whistleblower hearings, the only bills regulating the use of AI systems were those that addressed the markets for self-driving vehicles and automated decision systems in the aviation industry. Congress's latest move in the AI regulatory space was to pass the defense budget with provisions establishing investigatory bodies for the regulation of AI in early 2021, including a White House AI Office and several other regulatory bodies across the federal government.[129] A slew of bills for regulating AI and Machine Learning (ML) in the social media context were introduced late last year, including the Filter Bubble Transparency Act, the Justice Against Malicious Algorithms Act, The Social Media DATA Act, and more. While several of these proposals don't have a direct application to landlord tech, the fact that Congress is paying attention to the use of algorithms and AI, is a promising step, as AI is one of the building blocks of problematic surveillance tech.[130]

2022 was expected to be a year of growth on the data privacy front. Several bills were proposed in 2021, including the Social Media Privacy Protection and Consumer Rights Act and the Information TRansparency and Personal Data Control Act, but neither has been advanced. Senators Bernie Sanders and Jeff Merkley also introduced S.4400, the National Biometric information Privacy Act in late 2020, which would create the first regulations on the general use, collection, storage, and retention of biometric data. To date, the U.S. still lacks a nation-wide data privacy law.

Pushback from industry, the difficulty of creating brand-new regulatory frameworks, and an ever shifting focus have stalled the progress of new federal laws regulating tech. However, tenant rights advocates have found purchase in existing laws and by turning to agencies for agency-level regulation.TheFair Housing Act, which does touch private landlords by forbidding discrimination, and the Fair Credit Reporting Act (FCRA) and other consumer protection statutes have been used to challenge the use of landlord tech.[131] In a major win against tenant screening companies, the Connecticut Fair Housing Center's lawsuit against major tenant screening company CoreLogic for their biased algorithm survived a motion to dismiss in late 2020.[132] The Federal Trade Commission has brought enforcement actions against screening companies under these statutes in the past, including an action against RealPage that resulted in a $3 million settlement for failing to meet accuracy requirements.[133]

The Consumer Financial Protection Bureau (CFPB) has warned consumer reporting companies, including tenant screeners, that they may be violating the FCRA with careless background screening practices.[134] Authorized by the National Defense Authorization Act of 2021, the National Institute of Science of Technology (NIST) is at the forefront of regulating facial recognition by evaluating the accuracy of multiple FRS through the Face Recognition Vendor Tests.[135]

State and Local Tech Regulations of Landlord Tech

In lieu of national legislation, more and more states are passing comprehensive surveillance, tech, and data regulations.. A number of localities have passed outright facial recognition bans and more cities have passed ordinances that set up oversight bodies for surveillance technologies. Initially, the majority of these ordinances focus on the use of these technologies by the state or local government, especially the police, and forbid their use or purchase in the policing context. Several of the ordinances are written broadly enough to include the use of these technologies in public housing as well. In cities and states that have their own affordable housing programs with oversight bodies that fall under the purview of these regulatory ordinances, the use of the technologies can be regulated without housing-specific legislation. Increasingly, state and local rules have begun banning or regulating the use of these technologies in the private and commercial context, as well.

State Regulations

Landlord tech that tracks and surveils tenants can fall under the purview of regulations on data privacy and usage. Three states – California,Virginia, and Colorado – have comprehensive data protection laws on the books, which are modeled after data privacy laws such as the GDPR.[136] Additionally, Illinois, Texas, and Washington have biometric data privacy protection laws, which specifically regulate the use of the kind of technology that landlords increasingly prefer for their buildings (e.g., facial recognition, heat tracking, iris scanning).[137] Other states, such as New York and Arkansas have expanded their consumer protection statutes to cover some aspects of data privacy, but no states beyond California and Virginia have stand-alone data privacy laws, nor, as discussed, is there a nationwide, federal law that regulates data privacy. Colorado and Virginia's privacy laws do not go into effect until 2023.

California,Virginia, and Colorado's data privacy laws, and the Illinois, Washington, and Texas biometric data privacy laws, are consumer protection laws and don't prohibit the use of any technology. Rather, they regulate the manner in which data is collected, stored, and used by companies, including landlord tech companies. They most often have higher notice requirements for the collection and sale of data than companies would be beholden to under national law. These laws could be powerful tools for regulators and activists who have concerns about the storage and usage of landlord tech-generated data, such as entry records or biometric markers.

New York enacted a data breach notification law called the Stop Hacks

and Improve Electronic Data Security (SHIELD) Act in March 2020. This act, like many other data breach acts, requires certain data protection standards for businesses operating in New York that own or license private information. The law requires that companies develop cybersecurity standards and imposes fines for data breaches, but enforcement of the Act is only available to the New York Attorney General. New York State also became the first state to ban the use of facial recognition in schools in late 2020, but the moratorium does not extend beyond the education context. Tenant surveillance in New York is largely regulated by common law, landlord-tenant law and by statutes that penalize unlawful surveillance. New York State also has a law specifically regulating the surveillance of backyards by private individuals.[138]

Several other subject specific state laws regulating the use of facial recognition have passed. California also has a law on the books that prohibits police from using facial recognition in body cameras, AB 1215.[139] The law is not a permanent ban, but a three-year moratorium that expires in 2023. Vermont and Virginia have banned the use of facial recognition by law enforcement and Massachusetts has passed restrictions on its use by law enforcement. [140] Maryland has banned employers from using facial recognition applications during interviews.[141]

Algorithmic regulation that bears on automated decision making in tenant screening largely relies on statewide fair housing and consumer protection laws, as it does in the federal context. For example, the California Department of Fair Employment and Housing, the administrative agency that oversees the state's fair housing laws, issued regulations that went into effect in February 2020, and also expanded protections to include tenants' criminal history. In addition to FEHA, the Unruh Civil Rights Act is an additional source of protection for tenants in California. In New York, the Human Rights Law provides protections against discrimination. Tenants facing discriminatory tech practices may have success challenging those practices under these kinds of state-wide laws.

Some states have written data protection for tenants into their laws. Specific tenant screening data protections were enacted by the California legislature in 2016, which amended Section 1161.2 and 1167.1 of the Code of Civil Procedure. The amendment changed the California housing law's code that permitted the sale of eviction (known in California as detainer) proceedings after 60 days of a filing if the defendant did not prevail.[142] The act curtailed the ability of tenant screening bureaus to access court information. Other states, like Washington, have also placed limits on what tenant screening companies can access. Washington's law places explicit limits on the dissemination of housing court records, but only upon the request of the tenant. RCW 59.18.367 allows tenants to obtain an order limiting the dissemination of an eviction proceeding on their record if: (a) The plaintiff's case was without basis, (b) Tenancy was reinstated, or other good cause exists. If such an order exists in writing,

Company Profile:

MY VIDEO INTERCOM (MVI) SYSTEMS

PRODUCTS: KeyCom and MVI MyKey digital doormen systems

FUNCTION: Facial recognition and AI software to monitor building access

LOCATION: Headquartered in Brooklyn

FOUNDING YEAR: 2016

FOUNDER: Samuel Taub

SCALE: 16,000 live users (don't know if that is # of tenants or properties). As of 2018, they began piloting in the tri-state area and are now planning on a global scale. They serve some of the Worst Evictors in NYC, like Parkoff, Pinnacle, and E&M. They have been awarded "Best Smart Video Door System" in the US.

PRODUCT DESCRIPTION: "With state-of-the-art facial recognition and artificial intelligence software, the KeyCom® offers enhanced security and convenience for your building." KeyCom allows for touch-free keyless Bluetooth entry, digital keys. Allows building managers to track entries.

- "My Video Intercom (MVI) has partnered with Brivo, which provides cloud-based smart building software, to launch a unified property management solution with biometric facial recognition."
- "MVI allows residents to connect with the platform through a smartphone app has multiple functions that include: automatic keyless entry, delivery tracking, remote interaction with guests and visitors, send timed and controlled guest keys, and more."

COVID-19 MARKETING: Their Instagram during COVID has emphasized safety, package security, and touch-free access.

- June 2020 Instagram post: "Did you know that 63% of millennials would move out of an apartment due to a lack of security? We have upgraded our property management system to integrate with @brivo security solutions—allowing for an unparalleled level of autonomous security at all entry and exit points.
- July 2020 Instagram post: "From pizza to packages, our technology will allow you to manage all incoming deliveries safely and easily!"
- December 2020 Instagram post: "In a world where touch-free access is more crucial than ever, our patented KeyCom® is designed to keep you safe."

tenant screening providers are not permitted to use eviction records in tenant screening reports to generate tenant ratings or recommendations nor are they permitted to disclose them.[143] Such an order is called an Order of Limited Dissemination. Unlike other jurisdictions that automatically limit the dissemination of such records, tenants have to affirmatively ask for such records to be kept from tenant screening companies, which they often are unaware of having the option to do.

City Regulations

Individual cities are at the cutting edge of regulating facial recognition and other surveillance technologies. In addition to the localities below, several other cities across the country have banned the use of facial recognition either by the police or by the city government, including Madison, Wisconsin, Minneapolis, Pittsburgh, New Orleans and more.[144] Seattle's King County enacted the first county-wide government-use facial recognition ban in the country.[145] Some cities, like Pittsburgh, PA, Davis, CA, and Nashville, TN, have not passed outright bans but have passed ordinances regulating surveillance technology and facial recognition.

Cities in Massachusetts

Sommerville, Massachusetts was one of the first two municipalities to enact a facial recognition ban, and the first jurisdiction on the east coast to do so. Somerville's ban bars the use of any data collected with facial recognition "in municipal proceedings" — which would include eviction proceedings — and has a cause of action for residents to sue for violations of the law. Somerville is one of the leaders in this area in the country, also publishing an active camera map on its police department website.[146]

Several other Massachusetts towns and cities have followed Sommerville's lead in banning the technology: Brookline, Cambridge, Northampton, Springfield, and finally, Boston, which passed a ban in June of 2020.[147] Boston's ordinance bans the public use of facial recognition technology. A state-wide ban was nearly passed in December 2020, but was pared back at the last minute, turning to less-strict regulations instead of an outright ban.[148]

Cities in California

San Francisco became the first city to ban facial recognition software in 2019 as part of a larger slate of surveillance oversight bills.[149] The ordinance prohibits the purchase of facial recognition software by city agencies, including the public housing authority. Because the ban is a government ban, private business and public individuals (including private landlords) are not banned from purchasing, using, and deploying this technology.

The lack of a private ban for facial recognition is a cause for concern for advocates. Already, San Francisco police have circumvented the facial recognition ban by following tips generated by a different agency.[150] San Francisco's bill has explicit carve outs for law enforcement's inadvertent use of the technology, and allows law enforcement to deviate from the policy for investigative purposes. Should facial recognition cameras proliferate in

privately owned businesses, it's possible that police could use footage from those cameras for similar investigative purposes. Requesting the data from a facial recognition system would not violate the law.

Oakland's ban similarly prohibits the usage of facial recognition technology by city departments, including the police department. The Oakland ordinance also explicitly bans the use of information obtained by facial recognition software, a feature that goes further than the San Francisco ordinance.[151] Oakland's surveillance ordinance has a reporting requirement like that of the federal biometric housing ban. It also requires that any potential public use of surveillance be debated in a public discussion. In addition, Alameda and Berkeley have also placed limits on the use of facial recognition.[152] Like San Francisco, Alameda banned the use of the technology by its city departments, but has an exception for information received as a result of facial recognition used by an outside agency. Berkeley's ban came as an amendment to their general surveillance ordinance, and is also an outright ban on the public use of facial recognition surveillance.

Portland, OR

Portland's facial recognition ban is the strongest in the country and could serve as a model for the way to regulate landlord tech – it's one of only two bans that prohibit facial recognition use by private business as well as government agencies.[153] However, the ban on private businesses only extends to places of public accommodation, such as restaurants and stores. The use of facial recognition by landlords and private homeowners is not regulated by the Portland ordinance, as homes are not considered public accommodations.[154] However, the use of facial recognition by public entities, such as Portland's public housing agency, would fall under the prohibitions.

Baltimore, MD

In August 2021, the Baltimore City Council passed and enacted a bill banning the use of facial recognition by public and private entities within city limits.[155] The bill makes the use of FRS a misdemeanor with a fine of up to $1,000 or 12 months of imprisonment. However, the bill has a major carveout for biometric security systems that "protect against unauthorized access to a particular location", meaning that security systems that landlords use are not covered by the ban. The ordinance automatically expires at the end of 2022, unless an extension is approved by the Baltimore City Council.

New York City

In April 2021, the New York City Council passed a smattering of tenant protection bills including one of the few bills in the country that directly addresses the growing issue of landlord tech and how it interfaces with issues of access and housing justice. The Tenant Data Privacy Act requires that landlords who use smart access systems, such as GateGuard or StoneLock, provide their tenants with data retention and privacy policies, as well as limits the ability of data retention from these systems by requiring consent, restricting sharing of information with third parties, and giving specific data

For localities that already have bans on facial recognition, legislators should consider extending their bans to cover private individuals and business, specifically residential housing.

retention limits.[156] The TDPA also forbids the sale of biometric identification data and completely bans its use on minors without parental consent. The legislation will go into effect on January 1, 2023.

Additionally, in July 2021, New York City amended the local administrative code to include regulation of biometric identifier information.[157] The law regulates how businesses keep and use biometric identifiers, including a ban on selling such data, but does not apply to residential buildings. The law also requires that businesses notify consumers of the collection of biometric data. Both laws have a private right of action that provides statutory damages ranging from $200 to $5000 for individuals whose information was sold.

Prior to the 2021 legislation, the City Council considered the The KEYS (Keep Entry To Your Home Surveillance-Free) Act, which required physical keys. That bill would have gone further than the current legislation which only regulates data management.[158] The proposed bill came on the heels of a tenant winning the right to a physical key in settlement after filing suit in 2018.[159] The bill never passed.

LOOKING FORWARD

Local Data, Privacy, and Facial Recognition Regulations

For cities in states that don't have comprehensive data protection laws, local data protection ordinances such as New York City's can require even private landlords, and the companies they license landlord tech from, to be more careful with tenant data. As more and more landlords turn to using data collected from surveillance devices to evict tenants (e.g. video footage, as well as entry and exit records), these ordinances can ensure that landlords cannot use this data without at least some oversight.[160] However, larger concerns about the accuracy and suitability of landlord tech won't be mitigated by data privacy policies, and most housing and tech justice organizers agree that banning the technology that has repeatedly been demonstrated to be racist and heterosexist is the only suitable solution. For localities that already have bans on facial recognition, legislators should consider extending their bans to cover private individuals and business, specifically residential housing. Similarly, advocates should push for the inclusion of residential buildings in the data privacy ordinances that do exist, which often extend to commercial businesses only

Currently, a large-scale campaign is underway to push for a facial recognition ban in New York. The campaign (#BanTheScan) is pushing an existing NYS Senate Bill, S79 (Hoylman), which would ban law enforcement use of biometric surveillance technology and create a task force to regulate its use. Unlike contemporary bans of facial recognition, the bill is not an outright ban and is only focused on law enforcement use of facial recognition, not all public use. The bill was originally introduced in 2019, but has

grown in popularity after international organizations such as Amnesty International, have joined calls for an outright ban of facial recognition in New York.[161] However, the efforts to ban facial recognition, even if only for law enforcement use, have stalled. Despite the pushback on the use of facial recognition in the city, new Mayor Eric Adams has gone on the record expressing support for expanding the use of facial recognition by the police in New York City.[162]

Surveillance and Data Regulation Impact Boards

Various localities across the country have passed ordinances creating surveillance oversight boards or councils meant to assess the acquisition and use of surveillance technologies by city agencies. New York City, San Diego, Los Angeles, and other cities have passed laws creating such oversight boards, but they are often focused on the use of surveillance technology by local law-enforcement. While some cities have the authority to review the use of surveillance technologies in the context of the entire city government, they often don't need formal oversight boards to make such decisions. Public housing authorities, in particular, already have laws that require approval for the installation of new security systems in their buildings. Agencies like NYCHA have the ability to turn to impacted communities to inform them of decisions without waiting for a formal determination from a governing body.

Per Rashida Richardson's shadow report on automated decision-making (ADS) in New York City, "NYCHA should not sign contracts with third-party housing-data brokers without first obtaining all information regarding the party's data-procurement methods, its ADS systems, and its data-distribution methods. NYCHA should then hold a listening session with all impacted tenants and legal advocates to assess whether the contract should be pursued. When and if there is consensus to enter the contract, all of the above information should be made public in an accessible way on NYCHA's website."[163]

Tenant Protection Policies

As noted earlier in this report, the NY Housing Stability and Tenant Protection Act (HSTPA) of 2019 introduced a slate of rent regulation laws that transformed the eviction landscape by abolishing many of the incentives that landlords had for evicting rent-stabilized tenants. Some commentators attribute these laws, coupled with the Right to Counsel law passed in New York City in 2019, with falling eviction rates in the early part of 2020. Given that increasing evictions was a huge motivating factor for many landlords' surveillance, especially of rent regulated units, protections that increase the obstacle for landlords to initiate eviction proceedings might curtail the use of surveillance technology designed to catch tenants in petty lease violations or illegal sublets.

Activists and tenants should still be wary of technologies that landlords use that rely on ADS, especially those that focus on rent collection and tenant screening.[164]As Marika Dias, the Managing Director of the Safety

Net Project at the Urban Justice Center, has noted, "With the HSTPA, the whole landscape of evicting rent stabilized tenants to increase rent revenues. . . it's not the same calculus right, so it doesn't really work anymore."[165] Facial recognition, she notes, is still a race and gender issue, but "maybe some of the surveillance components are diminished because there's less incentive to get people out." Yet, the fact that it is a racially discriminatory technology also results in gender discrimination "remains an issue regardless of HSTPA."

In other jurisdictions, low-fault/no-fault or just-cause eviction protections can have the same effect that HSTPA has had in New York. One such law, San Francisco's Tenant Protections 2.0, eradicates low-fault evictions for petty lease violations (for example, for leaving out your trash or not sorting out recyclables). After the protections kicked in in 2017, over 600 fewer evictions were filed for so-called "nuisance" violations.[166] For landlords like Veritas that use petty lease violations as excuses to evict tenants from profitable units, just-cause eviction protections lower their incentives to implement invasive technology that allows landlords to spy on their tenants in order to catch them committing simple lease violations.

The term nuisance has wide usage — in some jurisdictions it can be used to describe the petty lease violations described above, yet in others it refers to alleged criminal activity or disorderly conduct on the premises of a rental property. Housing advocates have long known that the enforcement of nuisance is often disparate, falling harder on Black and Latinx tenants than their white counterparts.[167] Notably, nuisance allegations can range from illicit drug usage to simply calling 911, often leading to disproportionate rates of eviction of victims of domestic violence in communities of color.[168] Reforms to laws that require the eviction of nuisance tenants have cropped up in recent years, such as New York City's 2016 Nuisance Abatement Fairness Act. By and large, even in jurisdictions that have stronger tenant protections, such as California, nuisance abatement laws still leave this avenue for eviction open for landlords.

Another wave of tenant protection laws are also on the rise across the United States: anti-harassment ordinances. While most states already have tenant harassment laws on the books, increasing the breadth of activities that count as tenant harassment can give tenants protection against intrusive landlord surveillance. One such law pending in Los Angeles, for example, lists "interfering with a tenant's right to privacy" specifically as a form of tenant harassment.[169]

Tenant Protections and Covid-19

The policy landscape surrounding landlord tech will inevitably look different as a result of the Covid-19 pandemic. Housing policy has been transformed during Covid, most notably through national, state, and local eviction moratoria. The Anti-Eviction Mapping Project has been mapping and following over 600 city, county, state, and national eviction moratoria, many of which have since expired and some of which have been extended.[170] The CDC's eviction moratorium, which was issued in September 2020, along

with New York's eviction moratoriums, both have been extended numerous times, creating much confusion amongst tenants as to their rights and protections. These moratoria have been effective in preventing most evictions from being carried out, but not from being filed.[171] This is particularly true in Black and Latinx NYC neighborhoods which have received twice as many filings as white neighborhoods.[172] Almost all Covid tenant protections have centered around nonpayment, leaving renters vulnerable to other types of eviction proceedings.[173]

In New York, for example, organizers won hard-fought eviction protections that stopped nearly all evictions. However, due to some protections being rolled back and the narrow framing of others, landlords are still filing eviction cases in the courts — more than 220,000 across the state. Meanwhile, almost all remaining protections focus on nonpayment cases.[174] The Tenant Safe Harbor Act, passed in May, prohibits evictions but only to non-payment cases, and requires proving that tenants suffered financial hardship due to the pandemic. Further protections signed into law by Governor Cuomo extend protections, but it remains unclear if these protections apply to non-payment cases.[175] Even the CDC's eviction moratorium focuses on financial hardship cases and explicitly excludes lease violations from protection.[176]

As evictions for nonpayment have been eliminated as an option, many landlords are turning to filing evictions for petty lease violations and nuisance violations — in San Francisco, half of all eviction notices in 2020 cited nuisance violations, compared to one-quarter of all eviction notices in 2019.[177] While some landlords are taking advantage of nuisance abatement laws, others are simply refusing to renew leases in lieu of initiating non-payment proceedings.[178] Even financial assistance programs, like New York's recently-announced Emergency Rental Assistance Program (ERAP), will require tenants to provide documentation of non-payment notices.[179]

The pandemic has also prompted the proliferation of facial recognition and other biometric-based entry systems, especially those that track body temperatures.[180] Although regulation of facial recognition is becoming increasingly mainstream, housing activists remain alarmed by the twin crises of harmful landlord tech coupled with the upcoming eviction boom once moratoriums expire.

Right:

Info Packet: Action Plan for Tenants Who Want to Defend Themselves from Landlord Tech by the OceanHill-Brownsville Alliance

ORGANIZING

As a tenant in New York City, you have a right to organize! Below we offer a collection of case studies and resources for individuals and groups facing housing discrimination or an onslaught landlord tech.

On April 30th, 2019, Brooklyn Legal Services filed legal action with New York State's Home and Community Renewal on behalf of 130 residents of Atlantic

A.I.M.S.

1 AUDACITY TO ASK

You have a right to ask, WHO, WHAT, WHERE, WHEN, & WHY?" when your landlord is doing anything that brings you concern or worry. It is your right to question that of which you're not sure of. ALWAYS EXERCISE THAT RIGHT. ALWAYS HAVE THE AUDACITY TO ASK. QUESTION EVERYTHING.

2 INFORM YOURSELF & OTHERS

RESEARCH the technologies your landlord is investing in and SHARE it with your neighbors. It isn't likely that you will get full transparency about their motives & intentions, but you and your fellow tenants can INFORM & EQUIP yourselves with the information to push back step by step.

3 MOBILIZE YOURSELF & OTHERS

Organize your fellow tenants & yourself. Having recurring meetings with your neighbors helps build the COMMUNAL VOICE, PRESENCE, & CONFIDENCE necessary to push back against tech deployment in your community. Pro Tip: divide the responsibilities to avoid burnout.

#NOTMYBIOMETRICS

OCEANHILL-BROWNSVILLE ALLIANCE

We are LOCAL.
OceanHillBrownsvilleAlliance@gmail.com
Find helpful links & resources at:
www.OceanHillBrownsvilleAlliance.com

THE GOAL.

Equipt members of gentrifying neighborhoods with the knowledge of artificial intelligence technology, biometric collecting systems, hardware, apps, and automated decision making systems. Through workshops, collaborative art sessions and coaching we plan to instill the confidence and information on tech advancements and policy needed for community members to advocate for themselves and to have agency over the spaces they occupy and call home.

DATA PRIVACY AWARENESS

A bite sized brochure for the everyday tenant; someone who has to defend themselves from unwanted and deceitful surveillance and tracking technologies.

The Pocket Pack

We are LOCAL.
OceanHillBrownsvilleAlliance@gmail.com
www.OceanHillBrownsvilleAlliance.com
(347) 454-6629

OceanHill-Brownsville Alliance
EMPOWERING COMMUNITIES. PROTECTING FUTURES.

Art and agency are key elements in strengthening the voice of our community. Art will allow us to create space of trust through which we can achieve common goals through series of workshops lead by The OceanHill-Brownsville Alliance

#NOTMYBIOMETRICS

WE ARE RE-THINKING;
how we interact with tech. Acknowledging the fact that it's ok to decline permissions and weigh the outcomes of sharing our data.

AGENCY
One's agency is one's independent capability or ability to act on one's will. The belief that your own actions matter. This ability is affected by the belief structure which one has formed through one's experiences, and the perceptions held by the society and the individual, of the structures and circumstances of the environment one is in and the position they are born into.

PRIVACY
the state or condition of being free from being observed or disturbed by other people.

TURN THE HEAT UP!

4 MEET OTHER GROUPS

5 MAINTAIN PUBLIC PRESENCE & PRESSURE

6 STRATEGIZE

7 SEIZE THE MOMENT & SPEAK

8 SUPPORT (GIVE & ACCEPT)

You can find the expanded version of these steps at:

www.OceanHillBrownsvilleAlliance.com

PRIVACY IS A RIGHT TO EVERY INDIVIDUAL AND THERE DATA.

LET'S EQUIP OURSELVES TO PROTECT OUR DATA FUTURES

TALK TO YOUR ELECTED OFFICIALS

...KNOW YOUR DISTRICT

41st [Council District]

9th [Congressional District]

55 [Assembly District]

16 [Brooklyn Community Board]

WE NEED YOUR INPUT !

Help organizers and tenants push back against invasive landlord tech by sharing your experiences about the ways that your building and neighborhood is installing technology. Has your landlord introduced new tech for managing your building?

RESOURCE 01.
Log on to:
https://antievictionmappingproject.github.io/landlordtech/

Fill out this survey and let us know.

The team at OBA feels this is a great introduction landlord tech and a way for us to find and assist those being effected.

WHY?

Residents in gentrifying and marginalized areas must have a say and be involved in the deployment of any tech that will have the capacity to identify and/or track individuals. As the implications of this tech could lead to very dangerous outcomes for those having to interact with them while giving companies more leverage and data to improve their systems and software.

#NOTMYBIOMETRICS

Plaza Towers. Meanwhile, direct action organizing, media campaigns, and solidarity building led to the tenants' fight receiving significant attention. By November 2019, Nelson Management announced that they would rescind their application to install StoneLock Frictionless Solutions in their housing complex. This housing justice and anti-surveillance victory was the result of a two-year long tenant-led organizing campaign that utilized a combination of direct action, media outreach, and alliance building. Their victory serves as inspiration for all those looking to keep landlord tech out of their buildings, and for those invested in bringing together the work of housing and technological justice.

OceanHill-Brownsville Alliance Guide

After successfully fighting Nelson Management's deployment of facial recognition at Atlantic Plaza Towers, Tranae' Moran co-founded the OceanHill-Brownsville Alliance in order to create knowledge and share tactics for fighting back against landlord tech at Atlantic Towers and beyond. Below we include the group's Action Plan for Tenants Who Want to Defend Themselves from Landlord Tech, to further share this knowledge.

Resources for NYC Tenants

The organization Tenants & Neighbors offers a simple and informative "10 steps to forming a Tenant Association" to guide you through the process of getting organized with your neighbors.[181] There is power in numbers — talk to your neighbors and see if they'd like to get a tenant association off the ground in your building.

There are also many neighborhood-wide tenant unions, like Crown Heights Tenant Union,[182] Ridgewood Tenants Union,[183] Southwest Brooklyn Tenant Union,[184] and more, which bring together tenants from different buildings into stronger local unions. To find one in your neighborhood, you can visit the Housing Court Answers website,[185] which provides a list of tenant rights groups in the five boroughs, or call their hotline (212-962-4795) to get a referral. Many community-based groups and nonprofits organize tenants across the boroughs, and form coalitions to advocate for stronger tenant protections–there are many! For example, Right to Counsel is a citywide coalition fighting evictions, and Housing Justice for All is a statewide coalition organizing tenants both upstate and downstate for housing justice.[186]

If you are at risk of eviction, visit Eviction Free NYC.[187] If COVID-19 impacted your ability to pay rent, you can use this website to send a hardship declaration form to your landlord and local courts—putting your eviction case on hold until August 31st, 2021. You can also easily look up whether you qualify for Right to Counsel (free legal representation in Housing Court for eviction cases); and find organizing and legal resources in your area.

If you have any question about your rights as a tenant, you can call the Housing Court Answers hotline, at 212-962-4795, Monday–Friday, from 9 am–5 pm. They can also refer you to free legal help or a local tenant

59

Company Profile:

RELIANT SAFETY/ OMNI NEW YORK LLC

PRODUCTS: Reliant Safety/Omni New York LLCSpy

FUNCTION: Camera and security systems in low-income, affordable, and public housing.

LOCATION: Both Reliant Safety and Omni NYC LLC are headquartered in NYC. Reliant Safety is an Omni organization.

FOUNDING YEAR: 2009

FOUNDERS: Mo Vaughn, Robert Bennett and Eugene Schneur

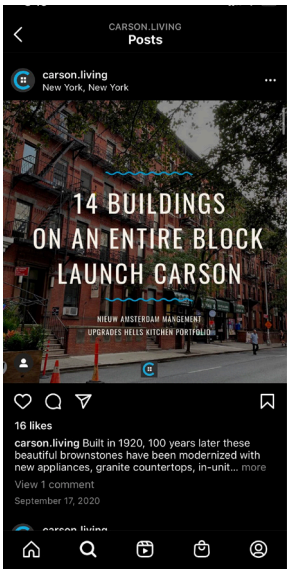
SCALE: **Omni**—The Omni portfolio has more than 9,000 security cameras in operation which support approximately 13,000 residential units. These cameras record footage 24 hours a day through Security Operations Centers (SOC). Reliant Safety—Manages and secures over 20,000 residential units nationwide.

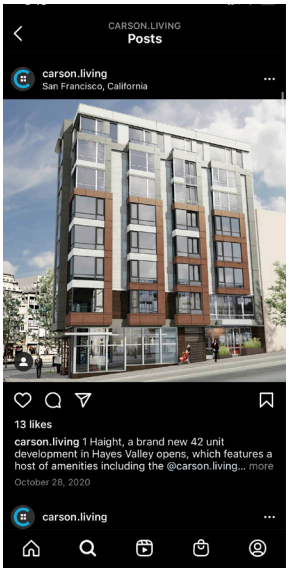
PRODUCT DESCRIPTION: "Reliant Safety SOC's are manned by professionals capable of handling security incidents from detecting incidents, tracking individuals as they move around a complex, remotely coordinating operations with police and emergency services, and providing usable evidence for prosecution when needed."

- Reliant Safety's Mobile Response Team consists of former law enforcement officers and military personnel. This allows them to also efficiently serve as the property management liaisons with law enforcement, by providing intelligence from informants and from the anonymous Tenant Tips Hotline, as well as video evidence of crimes.
- Reliant Safety helps eliminate illegal subletting with a two-pronged approach. We directly collect intelligence from tenants or site staff. We then verify the identity and entrance credentials of tenants using camera and access control systems, including biometrics. Biometric detection is a form of frictionless access control that combines facial recognition and body movement analysis. It provides 99.7% accurate, in-motion identification using multiple biometric characteristics as residents walk through an entry point."

organizing group in your community. In addition, MetCouncil on Housing and JustFixNYC both offer great written information and guides about tenant rights on their website.[188]

If you want to look up who owns your building, and other buildings your landlord may own, you can use JustFixNYC's Who Owns What search tool.[189] Similar tools exist in other cities in the US, such as the Anti-Eviction Mapping Project's Evictorbook in the Bay Area, OwnIt in LA, and FindMyLandlord in Chicago.[190]





HOW TO RESEARCH LANDLORD TECH

Data Scraping Guide

Landlords constantly surveil tenants — yet data about how and where landlords are deploying new technologies of surveillance is not readily available. Landlords do not have to disclose when they install new tracking systems in their buildings — and oftentimes, tenants are not even notified nor asked to opt-in.

As tenants, researchers, and organizers, we often need to be creative with our research tactics. One unlikely, but valuable, source of data that can help track where landlord tech is being deployed is Instagram. Certain companies that install new high-tech building-entry systems like to flaunt them on their social media feeds, and sometimes they go as far as tagging the neighborhood or City as the "location" for the post, and/or indicating the exact building address in the post description.

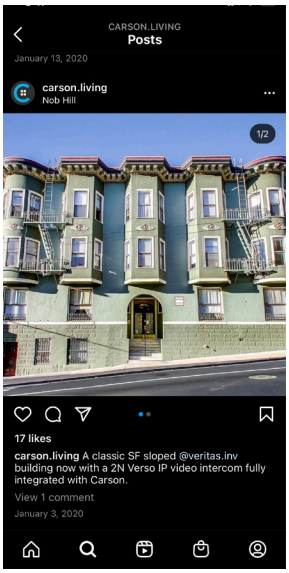
For this reason, we have begun scraping data from landlord tech companies' Instagram accounts. Below is a short guide based on what we have tried so far.

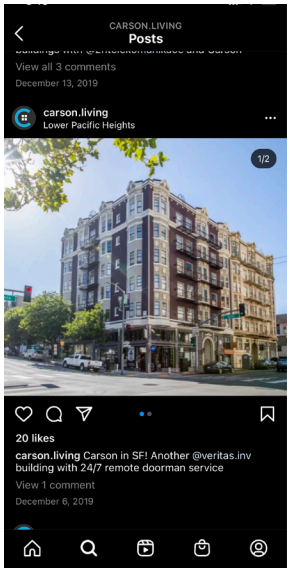
Step 1: Identify Social Media Presence

If you want to research a specific landlord tech company, the first step is to go to their website and see if they have any social media accounts. Sometimes, these can be found in the footer of the website, or you might want to look up "Instagram + 'Company Name'" on a search engine and see what comes up. If the company has an Instagram account, read a few posts and see if there is any information about specific locations (cities, neighborhoods, buildings) that could locate where their technology is being deployed.

Step 2: Scrape Data

Once you have identified one or more companies whose social media accounts could be fruitful as a data source, you are going to need to "scrape" the data — in other words, find a way to bulk download the information they have posted on their social media page. Alternatively, you could do it manually and write down the information contained in each post into a spreadsheet — but that takes a long time.





Left and above:
Carson boasts of new systems that they have set up in San Francisco on Instagram.

There are many ways to scrape data. One platform is Octoparse,[191] a web scraping tool that comes with a handful of free templates. Templates are great if you do not have software engineering experience — they allow you to scrape data without writing your own code.

One shortcoming of Octoparse however, is that the free version only lets you scrape up to 8,000 hours (roughly 300 days) of social media posts — so you won't be able to scrape the entire company's social media account. Alternatively, if you have some coding experience, you could look for a code repository that guides you through the steps involved in data scraping. For example, the following GitHub repository guides you through using a data scraper built with Python: https://github.com/arc298/instagram-scraper

Step 3: Export and Clean Data

Upload the data you scraped into Google Sheets, Airtable, Excel, LibreOffice, or other spreadsheet software of your choice. Read through your data and clean up the spreadsheet to only keep information that you are interested in.

This is a sample spreadsheet with data scraped from the Instagram account of virtual doorman company Carson (@carson.live). Each row represents a different Instagram post from Carson. Each column contains a different set of information scraped from the post (ex: description, location, photo, hashtags, etc).

Step 4: Additional Data Sources

Once you have a clean spreadsheet with scraped social media data, you may want to add more information based on how you'd like to use it. For example:

If you want to visualize your data by mapping it, you will need to "geocode" it. That means, for any post with a specific location (ex: New York City, NY or "45 Landlord Avenue, Brooklyn NY"), you will need a "latitude" and a "longitude" to place it on a map. You can geocode points individually by inputting addresses into LatLong.Net,[192] or using a batch geocoder like Batch Geocoder for Journalists.[193] In your spreadsheet, you would need to add a column for latitude, and a column for longitude. If you want to research the landlord of a specific building where tech has been deployed, you could add a column in your spreadsheet for "ownership" and look it up. In New York City, JustFix NYC's WhoOwnsWhat is a great tool to find out who owns a specific building. In San Francisco, the Anti-Eviction Mapping Project will be releasing a similar tool, EvictorBook, to help tenants research their landlords.

Step 5: Ground Truthing

Digital data and maps often include blindpots, misrepresentations, and inaccuracies. They also tend to obscure on-the-ground observations and present a top-down view, gazing down on our cities. If you are able to, it could be fruitful to "ground-truth" the data you have found through web scraping. Find a data point near you, in your neighborhood for example, and go check out the building. Do you see a new video intercom installed in the entrance way, or any other signs of landlord tech? If you feel comfortable,

take a picture to show what you find, and contribute it to our growing body of crowdsourced data on Landlord Tech Watch.[194]

FOIL and Data Requests

New York's public records law, the Freedom of Information Law, allows journalists, organizers and tenants alike to request data from public agencies in addition to the data that is already available through New York's Open Data portal. Many other states and the federal government have versions of public records laws — for example, the Sunshine Law in California. Some cities, like Oakland, publish all public records requests on a portal accessible to the public. Interested parties can send Freedom of Information Law (FOIL) requests to any city or state agency that regulates housing. For publicly funded buildings that are facing installation of facial recognition access systems, requesting information about the system from the Department of Housing and Community Renewal, the state agency that has to approve Modification in Services requests, could arm organizers with crucial information. As NYCHA prepares to expand security systems in many of its buildings, organizers could FOIL things such as contracts, memoranda of understanding, data, manuals, and more for the systems that NYCHA expects to install in their buildings. For a comprehensive guide on drafting FOILs, see the Center for Constitutional Rights' FOIA Guide for Activists.

For tenants seeking their own information, the process might bypass FOIL altogether. Some city and state agencies will give community members their own information without requiring it be formatted like a FOIL request.

For individuals interested in filing a FOIL, they can either submit a form through New York's Open FOIL NY Portal, or they can draft their own FOIL and submit it to the designated Records Access Officer of the agency or department of interest. If drafting your own FOIL, it is important to cite the relevant law that authorizes such a request — in New York, this is the Freedom of Information Law, Article Six of the Public Officers Law. In any FOIL request, it is extremely important to be very specific about what kind of records you want and even in what format the records are requested. Requesters should also be aware that FOIL law often allows agencies to charge the requester the cost of producing the information. Additionally, while FOIL law specifies how quickly an agency must acknowledge a request (5 business days), agencies have more leeway in actually producing records. Agencies must provide the requester with an estimate of how long it will take to produce the requested records, and provide a date by which records will be provided but sometimes those estimates can be for multiple months. The law requires that such an estimate be "reasonable." If the request exceeds a reasonable timeline, the requester may be able to appeal the decision to the officer specified in the agency's response. Denials may also be appealed. Unsuccessful FOIL attempts may be appealed via civil litigation under New York State Article 78 proceedings. See a detailed, step-by-step FOIL Guide here.

SAMPLE FOIL

SUBMITTED ELECTRONICALLY VIA EMAIL

[Date]

[Name of Recipient]

[Office]

Dear **[FOIL/Records Access Officer]**,

I am filing this request for records pursuant to the New York Freedom of Information Law, Article Six of the Public Officers Law.

I request the following records:

[Enumerated list]

Please provide the requested records in text-searchable PDF format unless otherwise requested.

Please provide the requested records by e-mail to **[Email of Requester].** If the requested records cannot be provided by e-mail, please advise us of the cost of copying all records onto a CD.

If any portion of this request is denied, please inform me of the reasons for the denial in writing and provide the name and address of the person or body to whom an appeal should be directed. If you determine that any portion of the requested materials are exempt from release, please specify the portion that you believe exempt and identify the exemptions that apply.

Please do not hesitate to contact me if you have any questions about this request. Thank you for your prompt attention.

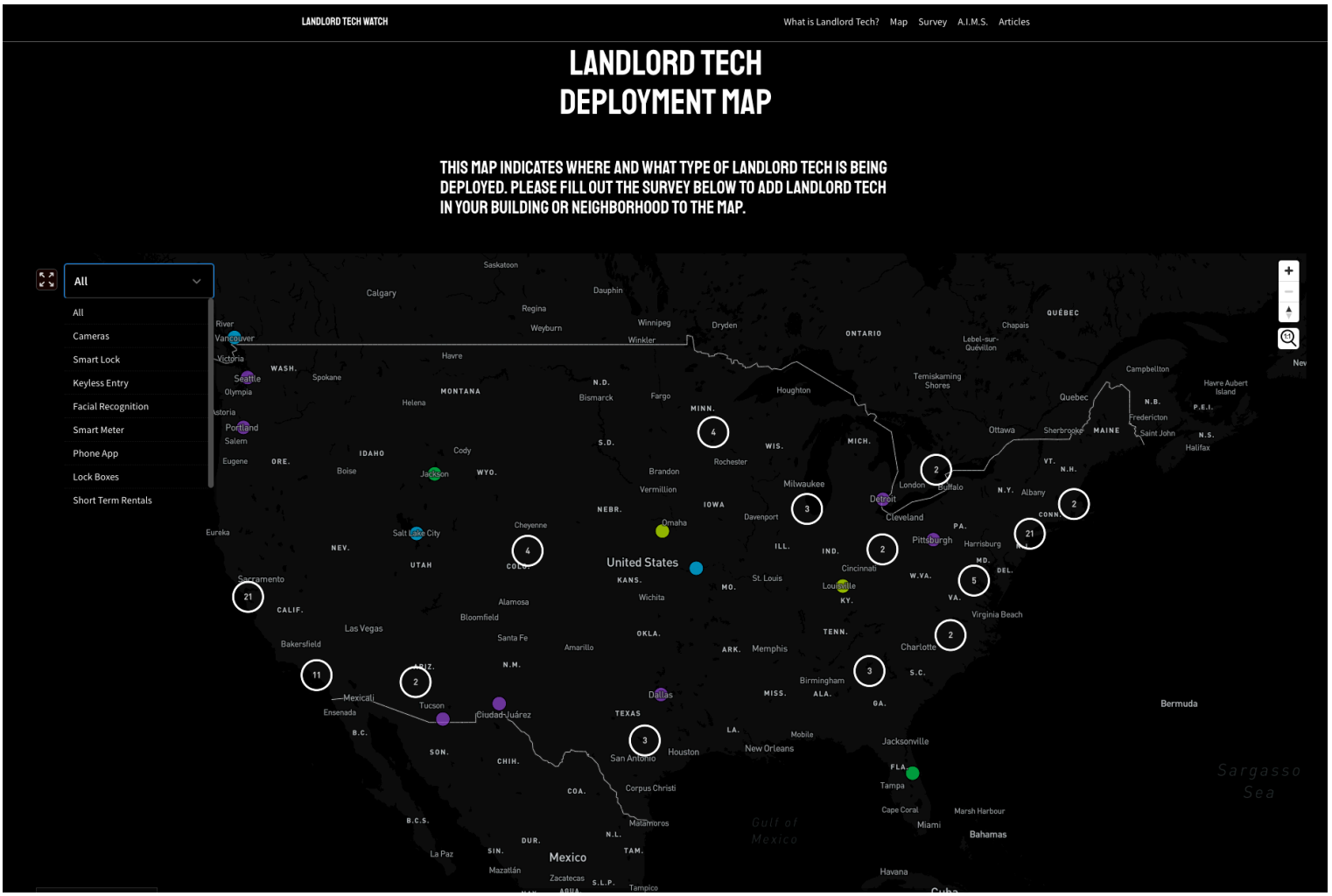
Sincerely

[Name of Requester]

Landlord Tech Watch

Resources on how to understand landlord tech from a tenant harms perspective, as well as a growing crowdsourced map of landlord tech deployment can be found on Landlord Tech Watch.[195] Visit the site to add your own story to the map and learn more about other tenant experiences. Landlord Tech Watch was created by the Anti-Eviction Mapping Project, People Power Media, the OceanHill-Brownsville Alliance, and the AI Now Institute as a resource for tenants and those working at the intersections of housing, racial, and technological justice. As a project, it calls for the abolition, rather than only the reform of landlord tech. This does not mean adopting a neo-luddite position towards all technology, and on contrary, Landlord Tech Watch participates in what Steve Mann calls "sousveillance," or "surveillance from below,"[196] engaging in practices like recording police behavior or using cameras to prove that landlords are unlawfully evicting tenants.[197] Practices such as this get at what Ruha Benjamin describes as "abolitionist tools" to be used against what she describes as "the new Jim Code," or the racist designs baked into today's technologies.[198] As an abolitionist tool, Landlord Tech Watch flips the gaze back upon the landlord technologies often used to spy on tenants, execute evictions, and abet racial dispossession, while offering resources on how to organize against facial recognition from being deployed in one's home.

Our report on landlord tech and domestic facial recognition in New York City serves as an extension of Landlord Tech Watch, aiming to produce knowledge useful in abolishing the harmful systems currently targeting and capitalizing upon tenant lives, data, and homes. By better understanding landlord tech, its geographies, and its associated harms, we can better fight back against it.



Above:

Landlord Tech Watch

About the Anti-Eviction Mapping Project

The Anti-Eviction Mapping Project (AEMP) is a data-visualization, critical cartography, and multimedia storytelling collective documenting dispossession and resistance upon gentrifying landscapes. Primarily working in the San Francisco Bay Area, Los Angeles, and New York City, we produce digital maps, software and tools, narrative multimedia work, murals, reports, and community events. Working with a number of community partners and in solidarity with housing movements globally, we study and visualize entanglements of housing policy, race, class, and political economy, while providing tools for resistance. Our narrative oral history and video work centers the displacement of people and complex social worlds, but also modes of resistance. Maintaining antiracist and feminist analyses as well as decolonial methodology, the project creates tools and disseminates data contributing to collective resistance and movement building. Some past reports that we have made can be found at https://antievictionmap.com/reports-new, which includes analysis completed in San Francisco, Alameda County, San Mateo County, and more.

The primary work of AEMP is to inform, empower and activate individuals who are negatively impacted by housing inequity and displacement, and to support the work of organizations in this space. We are a multigenerational and multiracial collective, composed of local artists, evicted tenants, oral historians, architects, filmmakers, geographers, data analysts, coders, writers and more. It is the dynamic, diverse and collective nature of AEMP's organizational structure that gives it its unique capacity to research and create strong tools and assets that support policy and educational work on contemporary housing issues.

Much of this research has informed an academic publication by Erin McElroy and Manon Vergerio, which can be found here: McElroy, Erin, and Manon Vergerio. "Automating Gentrification: Landlord Technologies and Housing Justice Organizing in New York City Homes." *Environment and Planning D: Society and Space* 40, no. 4 (August 1, 2022): 607–26. https://doi.org/10.1177/02637758221088868.

Project Team

Paula Garcia-Salazar is a New York-based graduate of Yale Law School and the City College of New York. She is interested in issues to do with the intersection of privacy, tech, surveillance and the criminal legal system, and how emerging tech can threaten the civil rights of people accused and convicted of crimes. This fall, Paula will be a Skadden Fellow with the Legal Aid Society of New York's Special Litigation Unit, where she will provide direct legal services to low-income people to secure the release of cellphones that have been seized by police while simultaneously seeking systemic reforms to New York's unjust property seizure system through impact litigation and the implementation of Due Process hearings.

Elizabeth (Isa) Knafo is a publication designer, researcher, media maker, and a member of AEMP-LA.

Erin McElroy is an Assistant Professor of American Studies at the University of Texas at Austin with a focus on housing justice organizing, technologies of displacement and resistance, US empire, and international solidarities. Erin is cofounder of the Anti-Eviction Mapping Project, the Radical Housing Journal, and Landlord Tech Watch. Additionally, Erin co-edited the AEMP's recently published atlas, *Counterpoints: A San Francisco Bay Area Atlas of Displacement and Resistance*, and is currently working on a book project about Silicon Valley imperialism in postsocialist Romania.

Manon Vergerio (she/her) is a housing organizer and a critical urbanist whose work centers on developing research and multimedia tools that put power into the hands of frontline communities. She is currently the Head of Data & Advocacy at Unlock NYC, an all-women tech team that designs mobile-based tools to combat housing discrimination in New York. Previously, she co-founded the NYC chapter of the Anti-Eviction Mapping Project, and co-directed a documentary film on the upcoming 2024 Paris Olympics and its impact on surrounding neighborhoods. Her practice is firmly rooted in the belief that people most directly impacted by urban injustice are expert problem-solvers equipped to imagine and design creative solutions. She is also a skilled facilitator with deep expertise in building inclusive governance and decision-making structures within organizations. Moving forward, she hopes to continue working closely with communities, organizers, designers, and activists to imagine and build radically inclusive cities.

End Notes

1. The Anti-Eviction Mapping Project, "Landlord Tech Watch," accessed May 1, 2021, https://antievictionmappingproject.github.io/landlordtech; Erin McElroy and Wonyoung So, "Landlord Tech in Covid-19 Times," *Metropolitics*, March 30, 2021, https://metropolitics.org/Landlord-Tech-in-Covid-19-Times.html; Erin McElroy, Wonyoung So and Nicole Weber, "Keeping an Eye on Landlord Tech," *Shelterforce*, March 25, 2021, https://shelterforce.org/2021/03/25/keeping-an-eye-on-landlord-tech.

2. Michael Batty, *The New Science of Cities*, (MIT Press, 2013).

3. Shannon Mattern, *A City Is Not a Computer: Other Urban Intelligences*, (Princeton University Press, 2021).

4. Louise Amoore, *Cloud Ethics: Algorithms and the Attributes of Ourselves and Others* (Duke University Press, 2020).

5. Rebecca Oyama, "Do Not (Re)Enter: The Rise of Criminal Background Tenant Screening as a Violation of the Fair Housing Act," *University of Michigan Journal of Race & Law* 15, no. 1 (2009): 181, https://repository.law.umich.edu/mjrl/vol15/iss1/5.

6. Keeanga-Yamahtta Taylor, "How Real Estate Segregated America," *Dissent Magazine*, Fall 2018. https://www.dissentmagazine.org/article/how-real-estate-segregated-america-fair-housing-act-race

7. Desiree Fields, "Constructing a New Asset Class: Property-Led Financial Accumulation after the Crisis." *Economic Geography* 94, no. 2 (2018): 118–40.

8. Strategic Action for a Just Economy, *Beyond Wall Street Landlords: How Private Equity in the Rental Market Makes Housing Unaffordable, Unstable, and Unhealthy*, 2021, https://www.saje.net/wp-content/uploads/2021/03/Final_A-Just-Recovery-Series_Beyond_Wall_Street.pdf.

9. Steve Lohr, "It Started with a Jolt: How New York Became a Tech Town," *The New York Times*, February 22, 2019, https://www.nytimes.com/2019/02/22/technology/nyc-tech-startups.html.

10. City of New York, "Laws and Reports. NYC Open Data," accessed May 23, 2021, https://opendata.cityofnewyork.us/open-data-law.

11. Nicholas Rizzi, "How New York City Became a Real Estate Data Mecca," *Commercial Observer*, July 22, 2019, https://commercialobserver.com/2019/07/the-city-that-never-deletes-how-new-york-city-became-a-real-estate-data-mecca.

12. PropTech 101, accessed May 13, 2021, https://www.proptech101.com.

13. Based upon a conversation with a Carson representative in 2019.

14. Based upon research from Erin McElroy, Deborah Raji, and Genevieve Fried on proptech companies, as well as the UNISUU database of proptech.

15. JustFix.nyc, the Anti-Eviction Mapping Project, and the Right to Counsel, "NYC's Worst Evictors," accessed May 13, 2021, https://www.worstevictorsnyc.org.

16. Policy Link, "National Equity Atlas: Rent Debt in America," accessed October 15, 2021, https://nationalequityatlas.org/rent-debt

17. Josefa Velasquez, "Corona, Queens, Still Staggers to Recover From Corona, the Virus," *The City*, April 28, 2021, https://www.thecity.nyc/queens/2021/4/28/22408803/corona-queens-coronavirus-vaccine.

18. Stefanos Chen, "NY Renters in Covid Hot Spots Are 4x More Likely to Face Eviction," *The New York Times*, March 17, 2021, https://www.nytimes.com/2021/03/17/realestate/new-york-city-renters-evictions.html.

19. Will Parker, "New York City Renters Owe More Than $1 Billion in Unpaid Rent, Survey Finds," *Wall Street Journal*, January 14, 2021, https://www.wsj.com/articles/new-york-city-renters-owe-more-than-1-billion-in-unpaid-rent-survey-finds-11610622000.

20. Erin McElroy, Meredith Whittaker and Genevieve Fried, "COVID-19 Crisis Capitalism Comes to Real Estate," *Boston Review*, April 30, 2020, https://bostonreview.net/class-inequality-science-nature/erin-mcelroy-meredith-whittaker-genevieve-fried-covid-19-crisis.

21. ButterflyMX, 2020, "From Amenity to Necessity: How 2020 Has Changed Multi-Family Housing," White Paper, https://butterflymx.com/resources/ebooks/from-amenity-to-necessity.

22. Emily Meyers, "What is the Tenant Blacklist and How Serious is Being on It?" *Brick Underground*, October 19, 2020, https://www.brickunderground.com/blog/2014/05/tenant_blacklist.

23. Lauren Glassberg, "New Website Targets Illegal Sublets on Airbnb," *ABC7 New York*, April 4, 2016, https://abc7ny.com/1275814.

24. Elizabeth Kratz, "Security Company Donates 'AI Doorman' to 100 Chabad Centers," *JNS*, May 15, 2019, https://www.jns.org/security-company-donates-ai-doorman-to-100-chabad-centers.

25. Ari Teman, LinkedIn Profile, accessed May 23, 2021, https://www.linkedin.com/company/friend-or-fraud.

26. Alfred Ng, "Smart Home Tech Can Help Evict Renters, Surveillance Company Tells Landlords," *CNET*, October 25, 2019, https://www.cnet.com/home/smart-home/install-smart-home-tech-evict-renters-surveillance-company-tells-landlords.

27. Erin McElroy and Manon Vergerio, "Automating Gentrification: Landlord Technologies and Housing Justice Organizing in New York City Homes," *Environment and Planning D*, 2022 (forthcoming).

28. Tom Angotti, New York for Sale: Community Planning Confronts Global Real Estate, (MIT Press, 2008), 56.

29. Tom Angotti, Philip DePaolo, Peter Marcuse, Sylvia Morse, and Samuel Stein, *Zoned Out! Race, Displacement, and City Planning in New York City*, (UR Books, 2017); Samuel Stein, *Capital City: Gentrification and the Real Estate State*, (Verso Books, 2019).

30. New York City, "State of the City: Mayor Puts Affordable Housing at Center of 2015 Agenda to Fight Inequality," Release, February 3, 2015, http://www1.nyc.gov/office-of-the-mayor/news/088-15/state-the-city-mayor-de-blasio-puts-affordable-housing-center-2015-agenda-fight.

31. The City of New York, *Housing New York: A Five-Borough, Ten-Year Plan*, Report, 2014, 30-31, https://community-wealth.org/content/housing-new-york-five-borough-ten-year-plan.

32. Abigail Savitch-Lew, "Protests, Diverging Views at City Council Hearing on East Harlem Rezoning," *City Limits*, October 12, 2017, https://citylimits.org/2017/10/12/protests-diverging-views-at-city-council-hearing-on-east-harlem-rezoning; Derrick Waller, "Inwood Rezoning Protesters Sleep in Councilman's Office, Refuse to Leave," ABC7 New York, August 3, 2018, https://abc7ny.com/3874600; Shelby Quinn, "Locals and Activists Continue Resistance to Bushwick Rezoning," *Bushwick Daily*, December 2, 2019, https://bushwickdaily.com/news/6439-locals-and-activists-continue-resistance-to-bushwick-rezoning; Sadef Ali Kully, "Which NYC Neighborhoods Face the Steepest Displacement Threat?" *City Limits*, April 29, 2019, https://citylimits.org/2019/04/29/rezonings-housing-new-york-displacement.

33. Diane Cardwell, "Mayor Says New York Is Worth the Cost," *The New York Times*, January 8, 2003, https://www.nytimes.com/2003/01/08/nyregion/mayor-says-new-york-is-worth-the-cost.html

34. Jonathan Mahler, "New York Is Back. Now It Has a Second Chance," *The New York Times*, June 8, 2021, https://www.nytimes.com/interactive/2021/06/08/magazine/nyc-inequality.html.

35. NYC Department of City Planning, "NYC GIS Zoning Features [Map]," accessed May 23, 2021, https://www1.nyc.gov/site/planning/data-maps/open-data/dwn-gis-zoning.page.

36. Center for NYC Neighborhoods, *East New York: Homeownership Trends in a Working Neighborhood*, (2017), 3, https://cnycn.org/eastnewyork.

37. Center for NYC Neighborhoods, *East New York: Homeownership Trends in a Working Neighborhood*, (2017), 7, 12.

38. Andrew Rice, "The Red-Hot Rubble of East New York: How Brooklyn's Gentrification Profiteers Are Expanding Their Boundaries," *Intelligencer*, January 28, 2015, http://nymag.com/daily/intelligencer/2015/01/east-new-york-gentrification.html.

39. McElroy, "Disruption at the Doorstep."

40. Ginia Bellafante, "The Landlord Wants Facial Recognition in Its Rent-Stabilized Buildings. Why?" *The New York Times*, March 28, 2021, https://www.nytimes.com/2019/03/28/nyregion/rent-stabilized-buildings-facial-recognition.html.

41. We will continue to draw upon testimonies from this press conference throughout this report.

42. City Council of New York, "Committee on Housing and Buildings Jointly with the Committee on Technology and the Committee on Consumer Affairs and Business Licensing," File # Int. No. 1758, 2019, https://legistar.council.nyc.gov/LegislationDetail.aspx?ID=4146261&GUID=435ECCD7-D2E0-4029-AEB2-3167FB9F6714&Options=&Search=.

43. City Council of New York, "Committee on Housing and Buildings Jointly with the Committee on Technology and the Committee on Consumer Affairs and Business Licensing," 2019.

44. Just Seeds for Art, "Call for Art: Movimiento Por Justicia Del Barrio," accessed May 23, 2021, https://justseeds.org/call-for-art-movimiento-por-justicia-del-barrio.

45. NYC Department of City Planning Fact Finder, "Demographic Profile, East Harlem North and South," accessed March 1, 2021, https://popfactfinder.planning.nyc.gov/profile/158/demographic?-mode=change.

46. Sadef Ali Kully, "Six Down, One to Go: Where de Blasio's Rezonings Stand," *City Limits*, September 10, 2020, https://citylimits.org/2020/09/10/six-down-one-to-go-where-de-blasios-rezonings-stand.

47. Matt Chaban, "Biometric Scanners that Can Identify People are Poised for Big Growth in Building Security," *NY Daily News*, February 21, 2014, https://www.nydailynews.com/life-style/real-estate/biometrics-future-21st-century-security-article-1.1621948.

48. Chaban, "Biometric Scanners that Can Identify People are Poised for Big Growth in Building Security."

49. Staff, "Eight Years After Extell, Still No Supermarket for Two Bridges," *Bowery Boogie*, November 24, 2020, https://www.boweryboogie.com/2020/11/eight-years-after-extell-still-no-supermarket-for-two-bridges.

50. CAAAV Organizing Asian Communities, "Major Victory in the Two Bridges Neighborhood!" accessed May 23, 2021, https://caaav.org/major-victory-in-the-two-bridges-neighborhood.

51. Security Today, "Integrator Chooses FST21 SafeRise Solution to Secure Massive Manhattan Apartment Complex," Security Today, August 13, 2013, https://securitytoday.com/articles/2013/08/13/integrator-chooses-fst21-saferise-solution-to-secure--massive-manhattan-apartment-complex.aspx.

52. Security Today, "Integrator Chooses FST21 SafeRise Solution to Secure Massive Manhattan Apartment Complex."

53. Jordan T. Camp and Christina Heatherton (eds.), *Policing the Planet: Why the Policing Crisis Led to Black Lives Matter*, (Verso Books, 2016); Brian Jefferson, "Broken Windows Policing and Constructions of Space and Crime: Flatbush, Brooklyn," *Antipode* 48, no. 5 (2016): 1270-1291.

54. Rich Bockmann, "Real Estate's Surveillance State," *The Real Deal*, May 1, 2019, https://therealdeal.com/issues_articles/big-brother.

55. PropertyPanel.xyz—NYC's Leading Real Estate Platform, accessed May 20, 2021, https://propertypanel.xyz.

56. Ng, "Smart Home Tech Can Help Evict Renters, Surveillance Company Tells Landlords."

57. Ari Teman, LinkedIn Profile, accessed November 9, 2018, https://www.linkedin.com/pulse/5-ways-maximize-evictions-nyc-multifamily-ari-teman.

58. Sharon Zukin, "Loft Living as 'Historic Compromise' in the Urban Core: The New York Experience," *International Journal of Urban and Regional Research* 6, no. 2 (1982): 256–267.

59. Angotti, *Zoned Out!*.

60. "Committee on Housing and Buildings Jointly with the Committee on Technology and the Committee on Consumer Affairs and Business Licensing," 2019.

61. J. K. Dineen, "Big SF Landlord Veritas Sued by Long-Term Renters Claiming Harassment to Drive Them Out," *San Francisco Chronicle*, October 12, 2018, https://www.sfchronicle.com/bayarea/article/Big-SF-landlord-Veritas-sued-by-long-term-renters-13300906.php.

62. AEC Alarms was founded by the father of Yat-Cheong Au and Yat-Pang Au, Sik-Kee Au. See https://www.sfaa.org/Public/Magazine/08_2019/Safety_First.aspx for background on the AEC Alarms and the Au family. Although not mentioned in the SFAA article, Yat-Pang Au references being CEO of AEC Alarms until 2007 in his own bio: https://yatpangau.wordpress.com/home. According to his LinkedIn profile, Yat-Cheong Au is the President of AEC Alarms as of May 2021: https://www.linkedin.com/in/yat-cheong-au-8194b0b.

63. Amazon Staff, "A New, Easy Way for Properties to Add Alexa to Residential Buildings," About Amazon, September 3, 2020, https://www.aboutamazon.com/news/devices/a-new-easy-way-for-properties-to-add-alexa-to-residential-buildings; Amazon Developer, "What is Alexa for Residential?" accessed May 12, 2021, https://developer.amazon.com/en-US/alexa/alexa-for-residential.

64. Rashad Shabazz, *Spatializing Blackness: Architectures of Confinement and Black Masculinity in Chicago*, (University of Illinois Press, 2015), 3.

65. Lacino Hamilton, "The Gentrification-to-Prison Pipeline," *Truthout*, April 30, 2017, https://truthout.org/articles/the-gentrification-to-prison-pipeline.

66. Jefferson, "Broken Windows Policing and Constructions of Space and Crime," 1285.

67. Bench Ansfield, "The Broken Windows of the Bronx: Putting the Theory in Its Place," *American Quarterly* 72, no. 1 (2020): 103–127; Camp and Heatherton, Policing the Planet.

68. Christina B. Hanhardt, "Broken Windows at Blue's: A Queer History of Gentrification and Policing," Verso Books Blog, June 14, 2016, https://www.versobooks.com/blogs/2704-broken-windows-at-blue-s-a-queer-history-of-gentrification-and-policing.

69. Ananya Roy, "Undoing Property: Feminist Struggle in the Time of Abolition," *Society & Space*, May 3, 2021, https://www.societyandspace.org/articles/undoing-property-feminist-struggle-in-the-time-of-abolition.

70. Chris Herring, "Complaint-Oriented Policing: Regulating Homelessness in Public Space." American Sociological Review 84 (5): 769–800; Rahim Kurwa, "Building the Digitally Gated Community: The Case of Nextdoor," *Surveillance & Society* 17, no. 1-2 (2019): 111–117.

71. Stop LAPD Spying Coalition. *Automating Banishment: The Surveillance and Policing of Looted Land*, November 2021, https://automatingbanishment.org/assets/AUTOMATING-BANISHMENT.pdf.

72. The City of New York Department of Investigation, "DOI Report Identifies Additional Ways City Should Further Streamline Funding and Approval Process to Expedite Installation Of Security Cameras In City Housing Authority Properties," Report, November 2014, https://www1.nyc.gov/assets/doi/reports/pdf/2014/2014-11-21-Pr28nychacameras.pdf.

73. The City of New York Department of Investigation, "DOI Report Identifies Additional Ways City Should Further Streamline Funding and Approval Process."

74. The Official Website of the City of New York, Mayor de Blasio Announces 62,000 NYCHA Apartments To Receive Comprehensive Repairs, (November 19, 2018), http://www1.nyc.gov/office-of-the-mayor/news/565-18/mayor-de-blasio-62-000-nycha-apartments-receive-comprehensive-repairs.

75. New York City Housing Authority, Executive Summary: NYCHA's Amendment to the Annual PHA Plan for FY 2015 and the Five Year Annual PHA Plan for FY 2015-2019, Executive Summary, 2015, https://www1.nyc.gov/assets/nycha/downloads/pdf/final-rad-amendment-exec-summary-en.pdf.

76. Jonathan J. Mahler, "How the Coastline Became a Place to Put the Poor," *The New York Times*, December 4, 2012, https://www.nytimes.com/2012/12/04/nyregion/how-new-york-citys-coastline-became-home-to-the-poor.html.

77. Mahler, "How the Coastline Became a Place to Put the Poor."

78. Corey Kilgannon, "Long-Running Rivalries in Rockaways Projects Flare Into Violence," *The New York Times*, August 23, 2004, https://www.nytimes.com/2004/08/23/nyregion/long-running-rivalries-in-rockaways-projects-flare-into-violence.html.

79. Eric Lipton and Michael Moss, "Housing Agency's Flaws Revealed by Storm," *The New York Times*, December 10, 2012, https://www.nytimes.com/2012/12/10/nyregion/new-york-city-housing-agency-was-overwhelmed-after-storm.html.

80. Kyle Giller, "The Fight for NYCHA: RAD and the Erosion of Public Housing in New York," *The CUNY Law Review* 23, no. 2 (2020), https://academicworks.cuny.edu/clr/vol23/iss2/5.

81. New York City Housing Authority, Executive Summary.

82. Lipton, "Housing Agency's Flaws Revealed by Storm."

83. New York City Housing Authority, Final Significant Amendment to the Annual PHA Plan for Fiscal Year 2020, Report, 2021, https://www1.nyc.gov/assets/nycha/downloads/pdf/Final%20Amendment_FY%202020%20Annual%20Plan_01.15.21%20FINAL.pdf.

84. NYC Housing Authority, NYCHA Announces Comprehensive Renovations for More Than 6,300 Residents Across 9 Brooklyn Developments—NYCHA, (May 16, 2019), https://www1.nyc.gov/site/nycha/about/press/pr-2019/pr-20190516.page.

85. Henry Goldman, "As NYC Public Housing Tenants Suffer, a Glimmer of Hope Emerges," *Bloomberg*, August 2, 2018, https://www.bloomberg.com/news/articles/2018-08-02/as-nyc-public-housing-tenants-suffer-a-glimmer-of-hope-emerges.

86. Wavecrest, "The Company," accessed May 22, 2021, http://www.wavecrestmanagement.com/wavecrest/company/highlights.

87. Reliant Partners in Security, "Illegal Sublet Detection | Reliant Safety," accessed May 22, 2021, https://www.reliantsafe.com/solutions/illegal-sublet-detection.

88. Reliant Safety, "Illegal Sublet Detection," accessed May 24, 2021, https://www.reliantsafe.com/solutions/illegal-sublet-detection.

89. Simone Browne, *Dark Matters*.

90. Omni New York LLC, "Safety – Omni New York LLC."

91. Omni New York LLC, "Omni New York LLC Celebrates Opening of 176 Units of LEED-Certified Affordable Housing for Families and Formerly Homeless Veterans," *PR News Wire*, February 17, 2017, https://www.prnewswire.com/news-releases/omni-new-york-llc-celebrates-opening-of-176-units-of-leed-certified-affordable-housing-for-families-and-formerly-homeless-veterans-300409398.html.

92. Michelle Alexander, "Forward," *In Prison by Any Other Name: The Harmful Consequences of Popular Reforms*, ed. Maya Schenwar and Victoria Law, (The New Press, 2020), xii.

93. Arjun Jagjivan, "Discrimination in the Digits: A Conversation with Ruha Benjamin, Author of 'Race after Technology,'" Business Today Online Journal, May 15, 2020, https://journal.businesstoday.org/bt-online/2020/yo4zlhp3jnrm-m0qbc9ln6pz8i6u029.

94. Simone Browne, *Dark Matters*.

95. R. Joshua Scannell, "Electric Light: Automating the Carceral State During the Quantification of Everything," The Graduate Center Dissertations, Theses, and Capstone Projects, 2018.

96. R. Joshua Scannell, "This Is Not Minority Report Predictive Policing and Population Racism," in *Captivating Technology*, ed. Ruha Benjamin, (Duke University Press, 2019), 1–34.

97. Nicholas Rizzi, "NYC Seeks Partner to Vet Proptech Tools for Its Real Estate," *Commercial Observer*, December 16, 2020, https://commercialobserver.com/2020/12/nyc-proptech-nycha.

98. McElroy and So, "Landlord Tech in Covid-19 Times."

99. United States Government Accountability Office, Facial Recognition Technology Privacy and Accuracy Issues Related to Commercial Uses, Report, 2020, 9, https://www.gao.gov/assets/gao-20-522.pdf.

100. Joy Buolamwini and Timnit Gebru, "Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification," Conference on Fairness, Accountability and Transparency, 2018, 77–91, http://proceedings.mlr.press/v81/buolamwini18a.html.

101. National Institute of Standards and Technology, "NIST Study Evaluates Effects of Race, Age, Sex on Face Recognition Software," December 19, 2019, https://www.nist.gov/news-events/news/2019/12/nist-study-evaluates-effects-race-age-sex-face-recognition-software.

102. Ruha Benjamin, 2015, "From Park Bench to Lab Bench - What Kind of Future are We Designing?" TEDxBaltimore, https://www.youtube.com/watch?v=_8RrX4h-jCr0&ab_channel=TEDxTalks.

103. City Council of New York, "Committee on Housing and Buildings Jointly with the Committee on Technology and the Committee on Consumer Affairs and Business Licensing," 2019.

104. *Ibid*.

105. *Ibid*.

106. Omni New York LLC, accessed May 1, 2020, http://www.onyllc.com.

107. Reliant Safety, "Results," accessed May 24, 2021, https://www.reliantsafe.com/results.

108. Reliant Safety, "Results," accessed May 24, 2021, https://www.reliantsafe.com/results.

109. Boston Dynamics, "Spot," accessed May 24, 2021, https://www.bostondynamics.com/spot.

110. Boston Dynamics, "Spot."

111. Mihir Zaveri, "N.Y.P.D.'s Robot Dog Returns to Work, Touching Off a Backlash," *The New York Times*, April 14, 2021, https://www.nytimes.com/2021/04/14/nyregion/robot-dog-nypd.html.

112. Zaveri, "N.Y.P.D.'s Robot Dog Returns to Work, Touching Off a Backlash."

113. Jake Offenhartz, "NYPD Deploys 'Creepy' New Robot Dog In Manhattan Public Housing Complex," *Gothamist*, April 13, 2021, https://gothamist.com/news/nypd-deploys-alarming-robot-dog-manhattan-public-housing-complex.

114. Robert D. Bickel, Susan Brinkely, and Wendy White, "Seeing Past Privacy: Will the Development and Application of CCTV and Other Video Security Technology Compromise an Essential Constitutional Right in a Democracy, or Will the Courts Strike a Proper Balance?" *Stetson Law Review*, (2003): 33, 299.

115. Josh Barbanel, "Outside Public Housing, Cameras Abound," The Wall Street Journal, June 5, 2014, https://www.wsj.com/articles/police-identify-suspect-in-prince-joshua-avittos-fatal-stabbing-in-brooklyn-by-matching-dna-on-the-knife-1401906762.

116. Eric L. Piza, "The Crime Prevention Effect of CCTV in Public Places: A Propensity Score Analysis," John Jay College of Criminal Justice Publications & Research (2018).

117. Burgos v. Aqueduct Realty Corp., 92 N.Y.2d 544 (N.Y. 1998)

118. People v. Funches, 89 N.Y.2d 1005 (N.Y 1997)

119. TRD Staff, "Landlords Get High-Tech in Housing Court," *The Real Deal*, January 12, 2017, https://therealdeal.com/2017/01/12/landlords-get-high-tech-in-housing-court.

120. UpCounsel, "Video Surveillance Laws by State: Everything You Need to Know," accessed June 4, 2021, https://www.upcounsel.com/video-surveillance-laws-by-state.

121. Grant Clauser, "Security Cameras, Ethics, and the Law," *The New York Times*, September 23, 2016, https://www.nytimes.com/wirecutter/blog/security-cameras-ethics-and-the-law.

122. Cacye C. Hughes, "A House but Not a Home: How Surveillance in Subsidized Housing Exacerbates Poverty and Reinforces Marginalization," *Social Forces* 100, no. 1 (2021): 293–315.

123. Tyler Sonnemaker, "Property Tech Companies are Helping Landlords Spy on Residents, Collect Their Data, and Even Evict Them. Critics are Calling it an Invasion of Privacy that Could Reinforce Inequality," *Business Insider*, September 3, 2020, https://www.businessinsider.com/map-landlords-spying-on-residents-with-surveillance-technology-2020-9.

124. U.S. Congress, House, No Biometric Barriers to Housing Act of 2019, HR 4008, 116th Congress, https://www.congress.gov/bill/116th-congress/house-bill/4008?r=9&s=1.

125. Congresswoman Yvette D. Clarke, "Reps. Clarke, Pressley & Tlaib Announce Bill to Ban Public Housing Usage of Facial Recognition & Biometric Identification Technology," accessed May 24, 2021, https://clarke.house.gov/nobiometricsbarriers/#:~:text=The%20%E2%80%9CNo%20Biometric%20Barriers%20Housing,technology%20interplays%20within%20the%20public.

126. Senator Jeff Merkley, "Merkeley, Colleagues Introduce Legislation to Ban Government Use of Facial Recognition and Other Biometric Technology," accessed June 26, 2020, https://www.merkley.senate.gov/news/press-releases/merkley-colleagues-introduce-legislation-to-ban-government-use-of-facial-recognition-and-other-biometric-technology-2020.

127. H.R.2644 - Reasonable Policies on Automated License Plate Readers Act, https://www.congress.gov/bill/113th-congress/house-bill/2644.

128. H.R 6580 - Algorithmic Accountability Act of 2022, https://www.congress.gov/bill/117th-congress/house-bill/6580/text?r=1&s=1

129. Stanford University Human-Centered Artificial Intelligence, "Summary of AI Provisions from the National Defense Authorization Act 2021," accessed May 1, 2021, https://hai.stanford.edu/policy/policy-resources/summary-ai-provisions-national-defense-authorization-act-2021.

130. https://www.dlapiper.com/en/us/insights/publications/2022/1/us-congress-tries-to-decode-algorithms/

131. Cyrus Farivar, "Tenant Screening Software Faces National Reckoning," NBC News, March 14, 2021, https://www.nbcnews.com/tech/tech-news/tenant-screening-software-faces-national-reckoning-n1260975.

132. Farivar, "Tenant Screening Software Faces National Reckoning."

133. Federal Trade Commission, "Texas Company Will Pay $3 million to Settle FTC Charges that it Failed to Meet Accuracy Requirements for its Tenant Screening Reports," Release, October 16, 2018, https://www.ftc.gov/news-events/press-releases/2018/10/texas-company-will-pay-3-million-settle-ftc-charges-it-failed.

134. https://www.consumerfinance.gov/about-us/newsroom/cfpb-takes-action-to-stop-false-identification-by-background-screeners/?_sm_au_=iHVFR9tfrf49TNNMFcVTvKQkcK8MG

135. https://www.nist.gov/news-events/news/2021/07/nist-evaluates-face-recognition-softwares-accuracy-flight-boarding

136. JD Supra Data Security Law Blog, "Virginia Joins California with Passage of New State Data Privacy Law," accessed May 26, 2021, https://www.jdsupra.com/legalnews/virginia-joins-california-with-passage-3929540.

137. Natalie Prescott, "The Anatomy of Biometric Laws: What U. S. Companies Need to Know in 2020," *The National Law Review*, January 15, 2020, https://www.natlawreview.com/article/anatomy-biometric-laws-what-us-companies-need-to-know-2020.

138. New York State, "Governor Cuomo Signs Legislation Cracking Down on Unauthorized Private Property Surveillance," accessed June 14, 2021, https://www.governor.ny.gov/news/governor-cuomo-signs-legislation-cracking-down-unauthorized-private-property-surveillance.

139. Electronic Privacy Information Center, "EPIC—State Facial Recognition Policy," accessed May 26, 2021, https://epic.org/state-policy/facialrecognition.

140. Ban Facial Recognition, "Ban Facial Recognition Map," accessed May 26, 2021, https://www.banfacialrecognition.com/map.

141. https://mgaleg.maryland.gov/2020RS/Chapters_noln/CH_446_hb1202t.pdf

142. Bill Text—AB-2819 Unlawful Detainer Proceedings, accessed May 26, 2021, https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB2819.

143. RCW 59.18.367: Unlawful Detainer Action—Limited Dissemination Authorized, accessed May 26, 2021, https://app.leg.wa.gov/RCW/default.aspx?cite=59.18.367.

144. Ban Facial Recognition, "Ban Facial Recognition Map."

145. https://www.geekwire.com/2021/seattles-king-county-becomes-first-u-s-county-ban-government-use-facial-recognition-software/

146. City of Somerville, "Police Department," accessed May 26, 2021, https://www.somervillema.gov/departments/police.

147. Nik DeCosta-Klipa, "Boston City Council Unanimously Passes Ban on Facial Recognition Technology," Boston.com, June 24, 2020, https://www.boston.com/news/local-news/2020/06/24/boston-face-recognition-technology-ban.

148. Kashmir Hill, "How One State Managed to Actually Write Rules on Facial Recognition," *The New York Times*, February 27, 2021, https://www.nytimes.com/2021/02/27/technology/Massachusetts-facial-recognition-rules.html.

149. Shirin Ghaffary, "San Francisco's Facial Recognition Technology Ban, Explained," Vox, May 14, 2019, https://www.vox.com/recode/2019/5/14/18623897/san-francisco-facial-recognition-ban-explained.

150. Megan Cassidy, "Facial Recognition Tech Used to Build SFPD Gun Case, Despite City Ban," San Francisco Chronicle, September 25, 2020, https://www.sfchronicle.com/bayarea/article/Facial-recognition-tech-used-to-build-SFPD-gun-15595796.php.

151. Sarah Ravani, "Oakland bans use of facial recognition technology, citing bias concerns," San Francisco Chronicle, July 17, 2019, https://www.sfchronicle.com/bayarea/article/Oakland-bans-use-of-facial-recognition-14101253.php.

152. Peter Hegarty, "East Bay City Becomes Latest to Ban Use of Facial Recognition Technology," East Bay Times, December 18, 2019, https://www.eastbaytimes.com/2019/12/18/east-bay-city-becomes-latest-to-ban-use-of-facial-recognition-technology.

153. Rachel Metz, "Portland Passes Broadest Facial Recognition Ban in the U.S.," CNN Business, September 9, 2020, https://www.cnn.com/2020/09/09/tech/portland-facial-recognition-ban/index.html.

154. Courtney Linder, "Why Portland Just Passed the Strictest Facial Recognition Ban in the U.S.," Popular Mechanics, September 12, 2020, https://www.popularmechanics.com/technology/security/a33982818/portland-facial-recognition-ban.

155. https://baltimore.legistar.com/LegislationDetail.aspx?ID=4749282&GUID=3605654F-5629-41A1-BD96-89946A2C32FB&Options=&Search=&FullText=1

156. Cordilia James, "NYC Council Passes Tenant Data Privacy Act," *The Real Deal*, April 29, 2021, https://therealdeal.com/2021/04/29/nyc-council-passes-tenant-data-privacy-act.

157. https://www.thecity.nyc/bronx/2021/12/12/22831457/facial-recognition-bronx-housing-complex

158. Kathryn Brenzel, "NYC Seeks to Rein in Keyless Technology in Apartment Buildings," *The Real Deal*, October 7, 2019, https://therealdeal.com/2019/10/07/nyc-seeks-to-rein-in-keyless-technology-in-apartment-buildings.

159. Elizabeth Kim, "Hell's Kitchen Landlord Sued For Keyless Entry System Agrees To Provide Keys," *Gothamist*, May 8, 2019, https://gothamist.com/news/hells-kitchen-landlord-sued-for-keyless-entry-system-agrees-to-provide-keys.

160. Andrew Fiouzi, "Smart Locks Could Make It Even Easier For Landlords To Evict Their Tenants," *Mel Magazine*, September 14, 2020, https://melmagazine.com/en-us/story/smart-lock-eviction-moratorium-landlord.

161. Amnesty International, "Ban the Scan," accessed May 28, 2021, https://banthescan.amnesty.org.

162. https://www.politico.com/news/2022/02/08/adams-police-surveillance-technology-00006230

163. Rashida Richardson, "Confronting Black Boxes."

164. Kriston Capps, "Landlords Are Using Next-Generation Eviction Tech," *Bloomberg CityLab*, February 26, 2020,

https://www.bloomberg.com/news/articles/2020-02-26/landlords-are-using-next-generation-eviction-tech.

165. Based upon an interview with Marika Dias in 2021.

166. Joe Fitzgerald Rodriguez, "Tenants Find Stability Under Eviction Protections 2.0.," *San Francisco Examiner*, November 5, 2017, https://www.sfexaminer.com/news/tenants-find-stability-under-eviction-protections-2-0.

167. Ethan Silverstein, "Life, Liberty, and Rental Property: Oakland's Nuisance Eviction Program," *Hastings Journal of Crime and Punishment 1*, no. 1 (2020): 79, https://repository.uchastings.edu/hastings_journal_crime_punishment/vol1/iss1/5.

168. ACLU, "I Am Not A Nuisance: Local Ordinances Punish Victims Of Crime," accessed May 27, 2021, https://www.aclu.org/other/i-am-not-nuisance-local-ordinances-punish-victims-crime.

169. Los Angeles City Clerk, "Draft Tenant Anti-Harassment Ordinance," accessed May 26, 2021, https://clkrep.lacity.org/onlinedocs/2014/14-0268-S13_ord_draft_02-23-2021.pdf.

170. Anti-Eviction Mapping Project, "COVID-19 Global Housing Protection Legislation and Housing Justice Action Map," accessed May 27, 2021, https://covid19.antievictionmap.com.

171. Matthew Haag, "New York Extends its Eviction Moratorium through August," *The New York Times*, May 4, 2021, https://www.nytimes.com/2021/05/04/nyregion/new-york-city-eviction-moratorium.html.

172. Dan Krauth, "$1 Billion in Unpaid NYC Rent Due to COVID Pandemic: Check Your Neighborhood Here," ABC7 New York, February 22, 2021, https://abc7ny.com/10361904; Right to Counsel NYC Coalition, "Eviction Crisis Monitor," accessed May 27, 2021, https://www.righttocounselnyc.org/evictioncrisismonitor.

173. Carly Stern and Mollie Bryant, "How Landlords Dodge COVID-19 Eviction Bans Across the U.S.," *Sun Herald*, May 9, 2021, https://www.sunherald.com/news/coronavirus/article251249264.html.

174. Right to Counsel NYC Coalition, "Eviction Crisis Monitor."

175. Ryan Brenner, "Data Update: Eviction Filings in New York City as Some Renter Protections Expire," NYU Furman Center Blog, December 4, 2020, https://furmancenter.org/thestoop/entry/data-update-eviction-filings-in-new-york-city-as-some-renter-protections-ex.

176. Centers for Disease Control, "Eviction Moratoria Order FAQ," accessed May 27,2021, https://www.cdc.gov/coronavirus/2019-ncov/downloads/Eviction-Moratoria-Order-FAQs-02012021-508.pdf.

177. Nina Sparling, "Hundreds of SF Renters Threatened With Eviction During Pandemic," *San Francisco Public Press*, February 16, 2021, https://www.sfpublicpress.org/hundreds-of-sf-renters-threatened-with-eviction-during-pandemic.

178. Nick Penzenstadler and Josh Salman, "Landlords Skirt COVID-19 Eviction Bans, Using Intimidation and Tricks to Boot Tenants," *USA Today*, November 20, 2020, https://www.usatoday.com/story/news/investigations/2020/11/20/landlords-use-intimidation-tricks-push-renters-out-amid-pandemic/6284752002.

179. Office of Temporary and Disability Assistance, "Emergency Rental Assistance Program," accessed May 27, 2021, https://otda.ny.gov/programs/Emergency-Rental-Assistance.

180. Dusty Elias Kirk, Jasmine E. Huff, Michael Galibois, Kimberly J. Gold and Vincent James (Jim) Barbuto, "Facial Recognition and Biometrics in a COVID-19 Real Estate World," *Lexology*, April 19, 2020, https://www.lexology.com/library/detail.aspx?g=fba09d8e-1405-4618-a77c-90e0ab6734c2.

181. Tenants & Neighbors, "10 Steps to Forming a Tenant Association," accessed May 31, 2021, https://tandn.org/wp-content/uploads/2014/11/10-Steps-for-Forming-a-Tenant-Association.pdf.

182. Learn more about the Crown Heights Tenant Union by visiting https://crownheightstenantunion.org.

183. Learn more about the Ridgewood Tenants Union by visiting https://www.ridgewoodtenantsunion.org.

184. Learn more about the Southwest Brooklyn Tenant Union by visiting https://www.swbtu.org.

185. Learn more about Housing Court Answers at http://housingcourtanswers.org/resources-links/.

186. Learn more about Housing Justice for All by visiting https://housingjusticeforall.org.

187. Learn more about Eviction Free NYC by visiting https://www.evictionfreeny.org/en.

188. Learn more about MetCouncil on Housing by visiting https://www.metcouncilonhousing.org/help-answers; Learn more about JustFixNYC by visiting https://www.justfix.nyc/en/learn.

189. Learn more about JustFixNYC's Who Owns What Tool by visiting https://whoownswhat.justfix.nyc/en.

190. Learn more about Find My Landlord by visiting https://findmylandlord.chicagodsa.org; Learn more about OwnIt by visiting https://www.ownit.la; Erin McElroy and Azad Amir-Ghassemi, "Evictor Structures: Erin McElroy and Azad Amir-Ghassemi on Fighting Displacement," Logic Magazine, December 20 2020, https://logicmag.io/commons/evictor-structures-erin-mcelroy-and-azad-amir-ghassemi-on-fighting.

191. Learn more about Octoparse by visiting https://www.octoparse.com.

192. Learn more about LatLong.Net by visiting https://www.latlong.net.

193. Learn more about Batch Geocoder for Journalists by visiting https://geocode.localfocus.nl.

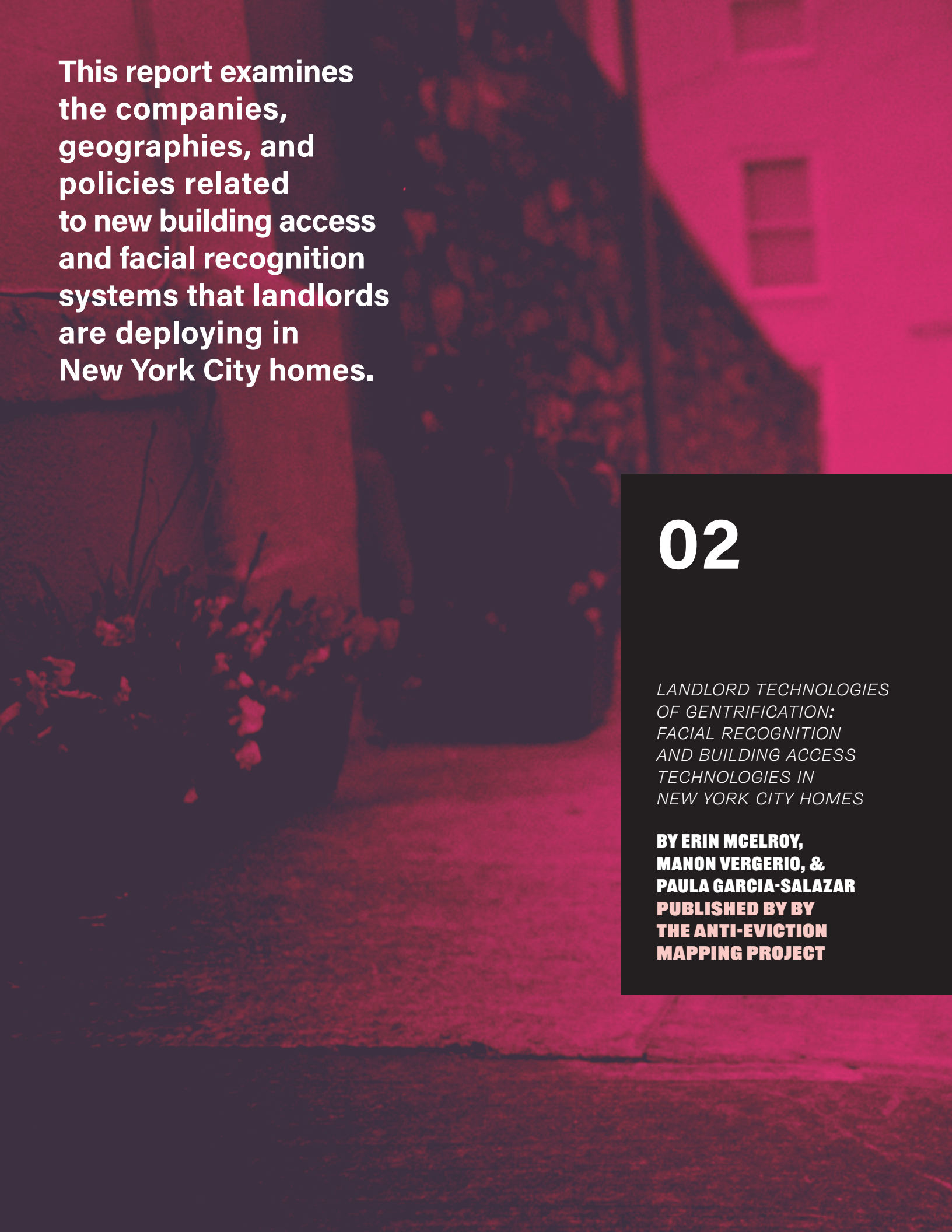
194. Learn more about Landlord Tech Watch by visiting https://antievictionmappingproject.github.io/landlordtech.

195. McElroy, So, and Weber, "Keeping an Eye on Landlord Tech."

196. Steve Mann, "Sousveillance," WearCam, 2002, http://wearcam.org/sousveillance.htm.

197. Bigad Shaban, Michael Bott, Mark Villarreal and Meghan Sullivan, "Oakland Couple Runs Surveillance on Landlord to Fight Eviction, Uses Hidden Camera to Record 3,000 Hours of Video," NBC Bay Area, November 12, 2018, https://www.nbcbayarea.com/news/local/oakland-couple-surveils-landlord/63997.

198. Ruha Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code*, (John Wiley & Sons, 2020).



This report examines the companies, geographies, and policies related to new building access and facial recognition systems that landlords are deploying in New York City homes.

02

LANDLORD TECHNOLOGIES OF GENTRIFICATION: FACIAL RECOGNITION AND BUILDING ACCESS TECHNOLOGIES IN NEW YORK CITY HOMES

BY ERIN MCELROY, MANON VERGERIO, & PAULA GARCIA-SALAZAR

PUBLISHED BY BY THE ANTI-EVICTION MAPPING PROJECT