

## Home and Homelessness in the New Industrial-Tech Economy

**Programming** Housing and Development at NASA Ames, Moffett Air Field, Santa Clara County, California. Our studio will focus on the NASA Ames site and a parallel evolution of housing stresses and homelessness over the past three decades at Skid Row, Los Angeles, California; People's Park, Berkeley; and Downtown San Francisco.

GSAPP studio runs parallel to a studio directed by Yung Ho Chang + Zheng Tan at Tongji University, Shanghai. The Tongji studio will study homelessness and migrant labor in China.



Gene Hackman, *The Conversation*. Architecture thwarts surveillance. Seeing around corners.

*The Case of Cindy Williams or the Conversation: Harry Caul, audio surveillance specialist cranes to see inside a hotel room he is staking out. The camera watches as he struggles to fill in what he can't see – and what he can't believe he is hearing. He eventually breaks into the then empty hotel room: a drop of water on the tub drain convinces him evidence of a crime has been erased before a toilet overflows with blood in a surreal flood that to the audience is made to seem a dream. In other words, we are left like Harry unsure of any occurrence. The film's trajectory is negated and its only presence is in our imagination. Caul ends up dismantling his own domestic life—his apartment is torn apart as he seeks evidence of his own being bugged*

### Introduction: 1973

In the 1973 film *The Conversation* two actors pace Union Square in San Francisco. Fragments of the conversation are being recorded by three distant microphones. The camera follows them as we lose sight of them between people and monuments. They are being watched and recorded - at distance. Using three microphone sources, two parabolic and one up close carried by a contract agent the actual statement was only assembled later in the film. Assembled by correlating the divergent array of recordings and their sound waves into a decipherable whole. Two otherwise wholesome seeming characters utter "he'd kill us if he had the chance" setting into motion a film where vision fails the director and audience and listening driving the plot. We watch the main character listens to things we (as audience) cannot verify by sight—the words are only partially present as limited spectrums of the sounds waves being recorded. In the mix of fragments captured is a comment on how a person ends up homeless, empathy? But also, an incantation of a criminal plan and cover up.

The actress in a few phases causes deep anxiety in the mind of the person listening to her – or quasi-listening. Our studio will take the film, written and directed by Francis Coppola as a starting point – as a juncture in art's estimation of surveillance and more so surveillance as creating deep unease in what was the privacy and intimacy of what we colloquially call home. Our private lives lead in public spaces and inside our homes.

*The Conversation* was released in the immediate wake of Watergate and at a time when theory and criticism of television and media were a vivid component of intellectual life. In 1973 Michel Foucault's *The Birth of the Clinic* was published; in

retrospect, one *could* imagine a time when the concern about surveillance was both intense and real but also still being explored and perhaps nascent in scale.

*The Conversation* starred Gene Hackman but also relied on two nearly silent characters played by Cindy Williams and Harrison Ford. Williams, strolling Union Square and Ford inhabit a kind of silent motion picture. Both later became mainstream figures of wholesome character and Williams in particular took up residence in main stream television as Shirley in the situation comedy *Laverne and Shirley*. A short three years later her character occupied appointment television; playing a resilient and underpaid, factory worker who nonetheless cultivates deep friendships and embodies empathy and concern. Williams in effect occupied the Avant Gard criticism of mass media and surveillance (in *The Conversation*) and the counter side of television as subject producing – cultivation technology of mimetic training (the sitcom of *Laverne and Shirley*—159 episodes over 9 years).

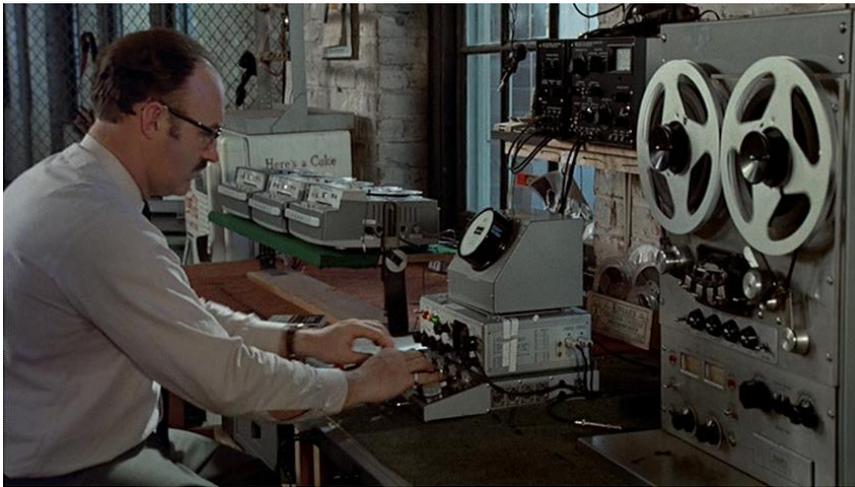
The issue here is that Coppola has made a film – about listening more than looking. A film that undermines what you can learn by looking. So much so that the main character privy to the entire body of audio surveillance he acquires and constructs is unsure if what he hears actually happened. The audience is left to construct the would-be film in their own imagination – in their own grasp matter and brain. We are the makers of the actual visual film.



Cindy Williams, Frederic Forrest, opening scene, *The Conversation*



Harrison Ford, Gene Hackman, *The Conversation*



*The audience completes the film. We watch an actor assemble a partial whole from diverging spectrum of sound waves. They reveal events in an adjacent, unrevealed hotel room. The verification of what occurred in his audio surveillance is never confirmed and indeed may not have happened at all.*



At the Jack Tar Hotel, San Francisco, Harry Caul, master of audio surveillance is confronted by what he imagined but is not sure actually happened – according to his audio surveillance.

While one could champion *The Conversation* and disparage the popular nature of the situation comedy as form of cultivation theory from the vantage of architecture one wonders if there are figures who have occupied both sides of the cultural equation as Williams did? Working with Coppola, but also George Lucas, Williams and Ford were able to span forms of audience creation unique to television but also to mine the paranoia of such mass assembly of the same audience.

Architecture: 1973: In 1973 Peter Eisenman was designing House IV—a private house in Connecticut. Making explicit reference to the house's elimination of formal room assignments Eisenman was vocal in rejecting the anthropological traces of domestic life and in effect promoting a “subject-less” house that you nonetheless took up residence in. The house rejected its role as surveillance of your domestic setting. Architecture in this era of autonomy often sought to delimit the degree to which it anticipated and constructed a subject even as it demanded utter precision and visual evidence of its own making. Of its author's actions. It demanded that the architect reveal their means. Eisenman's *degree zero* was countered by varying genres of pop architecture but the entire sequence was perhaps played out with only one audience – that cultivated inside architecture schools and the profession. It was not without major consequence but in the scope of mass media or even the limited distribution of a film like *The Conversation* how are we to compare agency or communication? Should we try to?

Today these ideas of surveillance are narrow by this measure but if you put them in perspective with a more limited mobility were people in 1973 easier to surveil then they are today? And does architecture have a sense of where it fits in the pan project of making visible our every move. More importantly are there larger changes in what underpins architecture and development today that would altogether alter how we imagine the place of architecture in this equation?

Our studio—and project—will be drawn into these conditions and seek an update on what it means to imagine what constitutes the colloquial term home or the architectural term house in our current industrial-tech economy. *The Conversation* is one sample of what are here outlined as eight conditions of our time. Some are seen as liberating while other are seen as new forms of surveillance – in this midst what is architecture as an agent of human liberty.

Mass Media was in effect understood to disregard its audience – to construct them with its own mimetic pre-figuring of their own discontent. Art was perhaps seen as completed by the viewer and thus enabling and liberating – today can we define where architecture and its technologies lie.

#### Reference

Top Secret America, The Washington Post  
<http://projects.washingtonpost.com/top-secret-america/>  
<http://projects.washingtonpost.com/top-secret-america/articles/frontline-video/>



*In an effort to uncover hidden surveillance Harry Caul dismantles his floors, walls and ceilings. The physical world barely reveals clues about past or future actions.*

## Studio Travel

### 1\_San Francisco, Palo Alto, Fremont, California

Site Meetings at Stanford University and Tesla Motors

Stanford University, Palo Alto, the Center for Design Research  
<https://me.stanford.edu/research/labs-and-centers/center-design-research>

Our work will also be shared for feedback with Professor Larry Leifer, Stanford University, Center for Design Research (CDR) and Chris Ford, PhD, Candidate, Stanford University, CDR. Professor Leifer, and Michael Shanks, Classics – Archaeology and the d-School.

<https://profiles.stanford.edu/larry-leifer>

<https://me.stanford.edu/research/labs-and-centers/center-design-research/people>

<https://www.facebook.com/centerfordesignresearch/>

Tesla Factory, Fremont, California  
 Fremont California, Tesla Factory Tour

### 2\_Los Angeles, California

Meeting with Community Solutions, Downtown L.A. and CS engagement at Skid Row/Downtown

[Community Solutions: Downtown LA](#)

### 3\_San Diego, California

Housing Tours on Border Housing concerns. The University of California, San Diego and Woodbury University

### 4\_Tijuana, Mexico

Housing Tours: with Rene Peralta, Architect and Professor and Monica Fragoso (Architect and Director, FUNDACIÓN ESPERANZA DE MÉXICO, A. C.)

[FUNDACIÓN ESPERANZA DE MÉXICO, A. C. is a non-profit civil association, without religious or political interests, founded in 1990.](#)

### Parallel Studio: Shanghai, China

A thesis based studio based at Tongji University will coordinate with meet us in NYC in April to discuss their work on migrant labor and homelessness/housing in China. Yung Ho Chang, Professor (Yung Ho Chang is also professor at MIT School of Architecture) <http://www.pritzkerprize.com/about/jury-bios>

<https://architecture.mit.edu/faculty/yung-ho-chang>

Zheng Tan, Associate Professor of Architecture, PhD. UCLA

## Part One Sites, Places and People

Site 1: Moffett Air Field, in Santa Clara County, California.

Site's Other: analysis of Skid Row in Downtown Los Angeles, California; People's Park, Berkeley, California; Downtown San Francisco and San Diego/Tijuana, Mexico.

Architecture's relation to site, to place, to people is often seen as the locus of concern and of identity. What are we preserving? Who is our client? But at the larger structural levels of social concern the idea of who or for whom is far less intimate and frequently involves modeling the relationship between designer and client, designer(s) and constituencies. The technical mechanisms from materials science of architectural elements to structural engineering to monetary systems and finance all intervene across historical arcs that deeply undermine any immediate reading of place.

In lieu of exact places this studio will reimagine several very distinct places, that are deeply entrenched in our current historical moment but also that engage very different ends of a spectrum between wealth and poverty, engaged and sidelined, insular and interior vs. fully exterior (almost without an inside at all). The studio will seek an architecture that is derived from or compensatory to both sites at once.

Both sites exist on the edge of profound level of wealth and poverty – an acceleration of wealth and poverty (and their divide) that defined the period of time since the 1970's in the United States. The sites are also deeply defined by histories of industrial technology and new forms of electronic and software technologies – today fusing in everything from communication to materials science and chemistry.

These are cities that are based in twentieth and twenty first century confluences of technology and economy. They engage, portend and shape very different levels of wealth and access to authority, to housing, to jobs, to health care, to education but they also describe two constituencies that each are facing severe struggles in housing affordability and access. In Los Angeles Skid Row, has been a zone of homelessness for decades and in that context, there have been many forms of advocacy to ameliorate or even end homelessness. There is no mistaking Skid Row as a crisis but it's also just one emergence of a statewide and national condition.

As many as 118,142 people experience homelessness on a given night in California. In New York the figure stands at 86,532. These figures include those who are suffering a temporary loss of permanent dwelling and those that are longer term and chronically homeless. Homelessness is dramatically larger is one looks at loss of home due to migration, to forced migration or war or refugee status.

Silicon Valley today accounts for a vast amount of the new wealth production in the United States and is also a site of an increasingly severe divergence in wealth distribution. More so it is a site reliant on suburban sprawl and the Bay Area economy is driving a geographic re-segregation of people by income, education and race reversing a decades long trend of bringing diverse lives closer together. The Bay Area is facing not just an affordable housing shortage but this is being constructed atop an urban infrastructure heavy in automobile usage and based in low rise, often single-family houses.

This studio will study and design an array of sites and people – each place and constituency is characterized by significant interventions of all kinds – from government actions at the state or city or federal levels to advocacy and academic efforts. The studio will rely on these resources but also in effect seek to add new dimensions to the possible. From an academic perspective, we will try to place these concerns in the newest technologies but also to look at the technologies that helped create these divisions.

## About the Site: Santa Clara County: Moffett Airfield

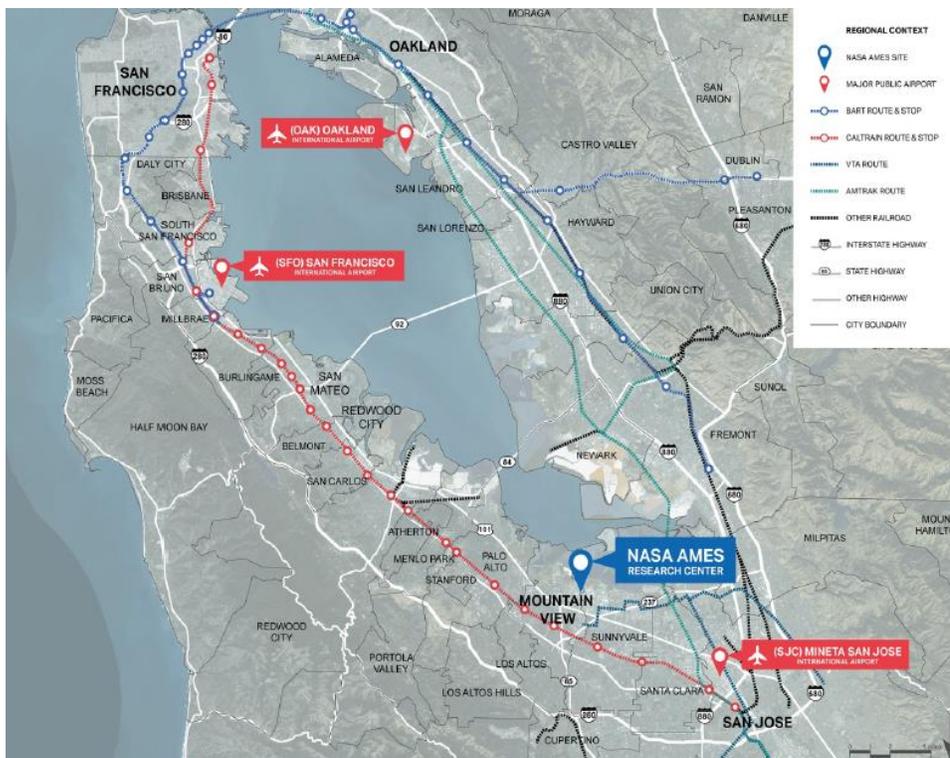
Source: NASA Ames Research Center / Issued Date: 10/18/17/ RFP

**Quote** NASA Ames Research Center (“NASA Ames”), one of ten NASA field centers, is located in the heart of California's Silicon Valley. For more than 75 years, NASA Ames has led NASA in conducting world-class research and development in aeronautics, exploration technology and science. NASA Ames’ core capabilities include: entry systems, advance computing and IT systems, aero sciences, air traffic management, astrobiology and life science, cost-effective space missions, intelligent/adaptive systems, and space and earth sciences. NASA Ames is actively building partnerships to foster and promote the now emerging entrepreneurial space industry. With a total annual budget of approximately \$900 million and 2,500 civil service and contractor employees, NASA Ames is a significant economic contributor to the San Francisco Bay Area regional economy.

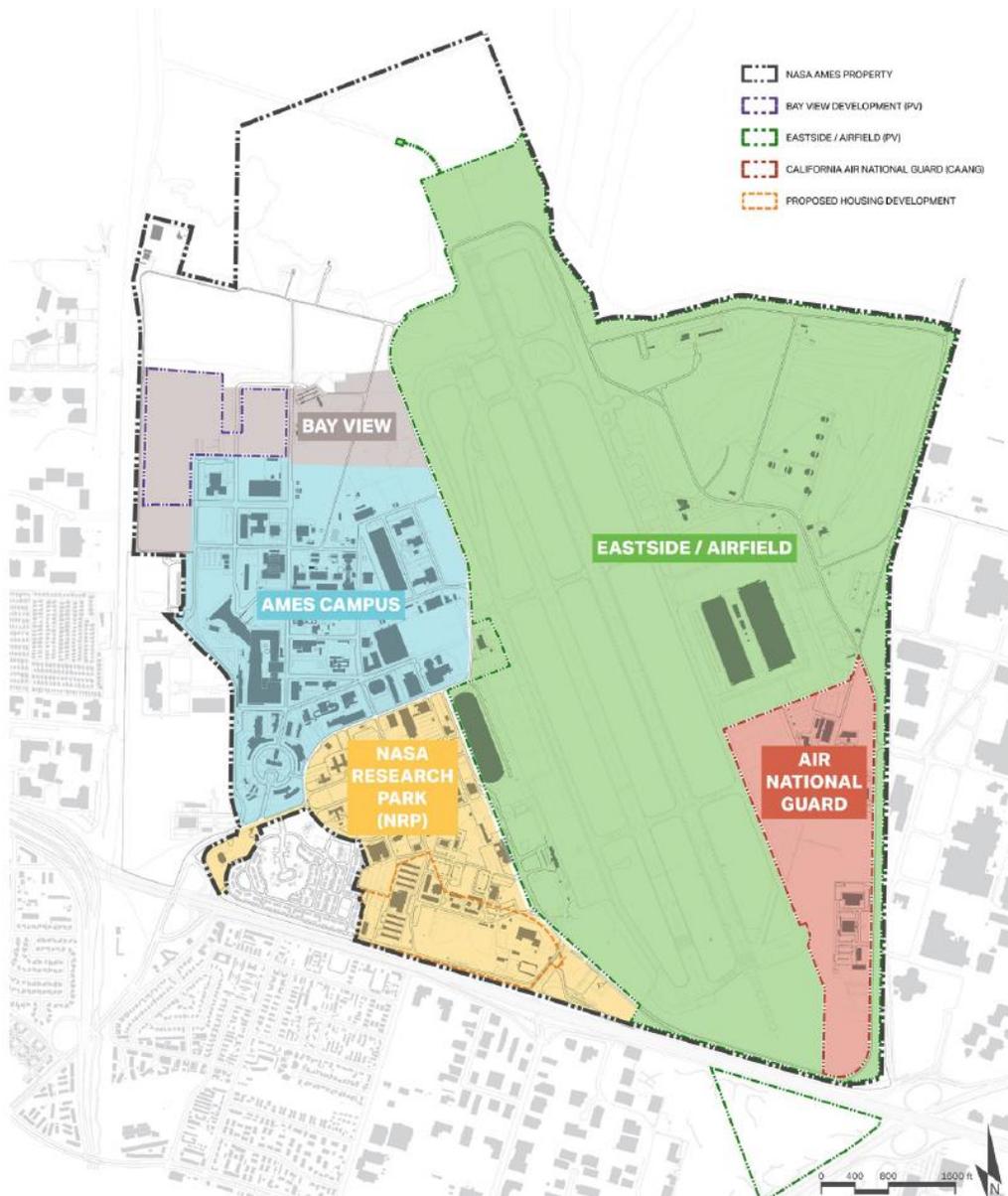
The original NASA Ames campus contains approximately three million square feet of buildings on approximately 500 acres. The campus also contains extensive open space, including wetlands. As a result of the 1991 BRAC decision to close the adjacent Naval Air Station Moffett Field, approximately 1,200 additional acres were transferred from the Navy to NASA, including numerous buildings, a federal airfield, an 18-hole golf course, wetlands, and habitat for the endangered burrowing owl. In 2015, NASA out-leased the airfield and associated buildings and golf course to provide for the rehabilitation of historic Hangar One and to maintain the airfield.

### Highway Access and Transportation Links

NASA is located at the geographic center of Silicon Valley with convenient access to U.S. Highway 101, California



Highways 237 and 85, and the Dumbarton Bridge. In addition to excellent freeway access, NASA Ames is located approximately eight miles from the San Jose International Airport and 27 miles from San Francisco International Airport. Local transit options include an onsite VTA light rail Bayshore/NASA station that connects NASA Ames commuters to downtown San Jose and downtown Mountain View, where a Caltrain station offers commuter rail service north to San Francisco and south to San Jose. Caltrain also connects to Bay Area Rapid Transit (“BART”) in Millbrae. VTA also operates shuttles covering the four-mile distance from NASA Ames to its Great America Parkway station, where connections can be made to a regional commuter train service to Fremont, Pleasanton, Livermore, Tracy, Stockton, and Sacramento via the Altamont Corridor Express (“ACE”) and the Amtrak-Capitol Corridor.



Nasa Ames Development RFP, Property

**Reference**

[NASA proposes new housing campus at Moffett Field with at least 1,930 rental units](#)  
[Housing Development Opportunity at NASA Ames Research Center](#)  
[Ames Research Center Procurement Homepage](#)



The proposed development site for the Housing Project includes NRP parcels 1, 2, 4, and 6, comprising a total of approximately 46 acres as shown in Figure 4.



## Site 2: Homelessness: Skid Row, Los Angeles; People's Park, Berkeley; and Downtown San Francisco.

The NASA Ames site will be devoted to market rate housing and a small contingent of 10% affordable housing. It does not have a direct relation to homelessness but in our studio, we will explore the decades leading up to our time in regard to the Valley and to Downtown Los Angeles and other homeless sites. Our key time frame is the 1970's to today.

In the United States, affordable housing is supported at the transaction level by federal as well as state and local subsidies for sale and rent costs. Yet with the deep resources of government there are tremendous swaths of the country that are severely housing cost burdened (we will cover this in depth). Homelessness is an extreme end of the housing spectrum and is often seen in constituencies. For example: estimates today place as many as 60,000 plus chronically homeless veterans in the United States.

Our studio will join with NYC based Community Solutions (CS) and their national campaign to end homelessness. CS has an office in downtown Los Angeles and is working nationwide. In particular, we will study the CS *Built for Zero* project to end veteran homelessness. CS works to address the loss of housing for the homeless by streamlining and coordinating the diverse array of support means for the homeless that is often unallocated and unreachable by the homeless. Much of this support goes un-used and fails to serve the actual people who need help.

**Reference** [The State of Homelessness in America 2016](#)  
[Federal Strategic Plan To Prevent And End Homelessness](#)

### Quote from CS Goals

Our goal is to combine the energy and creative leadership of Community Solutions (CS) and their *Built for Zero* program with a deep range of engineering, and architectural resources to explore solutions for affordable housing today and in the future. We seek housing where innovations in engineering, energy and design of all kinds achieves breakthroughs in how we fund and produce housing. Community Solutions has long been dedicated to ending homelessness in the United States and works to prevent homelessness before it occurs. They model risk factors that can lead to homelessness and seek to move support into place by better using and allocating existing government funds.

Community Solutions uses a broad range of social and data driven tools to engage people who are at risk of homelessness and help them affirm support and garner resources preemptively. Before the crisis of homelessness occurs.

Working across the United States CS teams coordinate and creatively fuses the resources of government at all levels, but also make use of their own achievements in harnessing information. While this may (magically) count as a form of charity or philanthropy it also a deeply innovative and professional project to get better results for people from already available but underutilized government and private recourses.

CS has a start up like drive; they hold an entrepreneurial spirit.

### **We will study CS's plans for housing for 300 People in Denver: their ability to create a new a new housing economy in need of a new housing asset.**

With a current plan to purchase and renovate as many as 100 three to four-unit apartment buildings, CS would provide housing to the group in a distributed / scatter site format. Veterans would have a home in a small-scale (meaning not institutional) neighborhoods and have the pride of independence that comes with this. Smaller apartment buildings deinstitutionalize the housing and thus helps achieve pride of place for people. But if one introduces new energy means, new mobility and need for community to this equation we begin to imagine and realize new housing and new housing types.

The funding to achieve this comes in part from men and women making use of housing assistance available to them in the form of vouchers, but currently un-used and thus not allocated. CS helps people access the benefits they are eligible for and have earned but are not using. Our goal is to explore how to imagine what is essentially hedging the financial risk of development with the social risk and privacy needs of those in need of housing. A snapshot of how these benefits work is shown in this link. We will have access to CS's financial models for this project as well.

**Reference** [VASH Benefits](#)  
[Community Solutions](#)  
[Built for Zero](#)

## Part Two Non-Linear Conditions: C-1 to C-8

We will work within and from a series of provocations about an architectural future; a zone of thought and indeed practice for which we do not have overt architectural historical reference. The sites are seen as both real and demonstrative. Both are already tended by forms of advocacy and government and varying technologies of architecture and development.

The sites are characterized by forms of strife that are unique to place but they also reflect a struggle for housing in the later day economy of the twentieth century and the emerging economy and technologies of our time. We are seeking an architecture that is not so much derived from these conditions as able to alter them. We can add to these and make use of them in non-linear and parallel methods.

### C-1 WHAT WOULD ARCHITECTURAL DISRUPTION LOOK LIKE?

**Abstract** Have we seen real disruption Yet? What is the future of Silicon Valley para-technologies as they begin to collide into and with the physical city rather than graft themselves into and onto it.

Embracing the disruptive claims that swath Silicon Valley and the technology sector today our studio will seek to invert the equations of scarcity and the drive towards risk reduction that accompanies so much of the innovations we see today. We will seek ways to see the modeling of risk as instead liberating; as allowing instead a form of excess and a world for which architecture and new architectural nomenclature have yet to be designed. To do this we will take on themes and research vectors such as artificial intelligence or machine learning and its possible effects on labor markets (jobs) and on commodity prices. The studio will seek to understand the themes around disruption and game their potential long term affects but more so to see or postulate the outer edges of risk models. We will explore how new decentralized energy production and storage might alter urban development and housing economies, and indeed how artificial intelligence (and robotics et all) might diminish one and half centuries of drive to urban density (will people come to cities for work if there is no work). What happens when we can imagine the entire housing economy, when a small computer can do it for us? When real estate fails to keep up with energy innovations or transportation and mobility deeply alter property values (again). What happens if millions of households exit the grid before we are ready?

Risk modeling today does offer an immense return on investment: a projective enterprise that can forecast stability allows new invention. Architecture has grown in strides as it took on risk modeling but it has also often done so in a drive to efficiency. This may include showing heat gain or day lighting effects, verifying the optical aspects of a view or a window size. Monitoring expansion and contraction of materials and thereby safety and maintenance. At the aggregate scale it may reveal a denominator of immense scale: residential real estate valued at 26 or 27 trillion dollars in the United States, or where and when entire regions of housing were built or what new energy protocols could affect this region or that. How does autonomous mobility affect what we imagine as possible in development when we know land values have been tied to mobility (and proximity to work) for the past century?

The studio will over the semester ask that each designer divide their attention between two sites and eight zones of enquiry. The sites are meant a constellation—a simultaneous view to how we hedge development. What thrills and scares us. What causes invention?

The zones of enquiry are attractors: thought structures that will, as played out, possibly deeply alter what is possible in development and in architecture.

### C-2 RENEWABLE and EXCESS or DESIGNING ENERGY

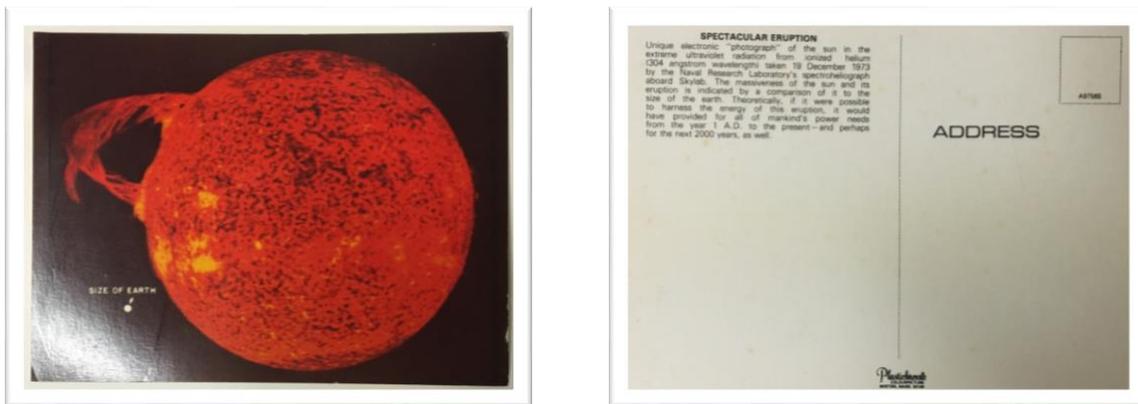
**Abstract** Solar energy from the sun reaches the earth's surface in 8 minutes. Fossil fuels, oil and gas form over 250 – 350 million years. How do we imagine the 8-minutes as architecture?

Anyone involved in sustainability and energy knows these measurements and have long sought a transformation of our energy regimes. Whatever the goals the compensatory challenges have seemed intractably staged to stop change (and thus stage environmental calls for change as “revolts”). Blocking sustainability has been market based; there is too much easy money to make in the old energy regimes, too many assets based in fossil fuel protocols, too many stakeholders dedicated to the past. Whatever the source energy expenditures, as we know, are bound to the very nature of modern life. Divided into nomenclatures of housing / office / retail or mobility / production / leisure. Embedded or transitory. Communications and (solid-state) electronics (chips / transistors and batteries). Energy is our basis and every move

removes something from the earth and re-releases it into the literal and social atmosphere. If sustainability has been an ethical question we may concern ourselves with doing the right thing; if sustainability is a matter of survival, we had better find a path. Ethics tied to every step—anxiety and conflict. At the moment, however, most of us cannot stop moving or consuming. Anxiety and conflict have often been a sustenance of sustainability debates, yet, today, the global turn to renewable energy is not only mature but perhaps bound to cause more change than we are prepared to imagine. Will a deep implementation of a renewable energy economy shore up old assets (houses, cars, offices et al) or will possibly instigate entirely new asset classes?

The past century did create new assets and new modes of risk. The economy of the past century also dramatically induced scarcity of all kinds; from food to housing; fuel to land; education to medicine. It simultaneously opened immense branches of low cost communication and global communication.

How will the new energy regimes meet new forms of intelligence; new networks for trade and new means to mine data and information?



*"Unique electronic photograph of the sun in the extreme ultraviolet radiation from ionized helium (304 angstrom wavelength) taken 19 December 1973 by the Naval Research Laboratory's spectroheliograph aboard Skylab. The massiveness of the sun and its eruption is indicated by the comparison of it to the size of the earth. Theoretically, if it were possible to harness the energy of this eruption, it would have provided for all of mankind's power needs for the year 1 A.D. to the present – perhaps the next 2000 years.*

## Reference

George Bataille; The Accursed Share

The Accursed Share was a rare but vivid presence in architecture schools in the 1990's.

George Bataille considered himself quasi-embarrassed by the subject of this writing but nonetheless opened the text by calling his work "a book of political economy." He was not an economist nor a specialist in the earth's physics and chemistry but he nonetheless had a fully formed discourse on an economy of energy—on how humans power the world and indeed distribute and share assets. He offered a theory of political economy and described as false the scarcity and lack of energy apportioned by financial markets under the broader auspices of an economy driven by capitalism. Bataille in essence offered a theory that scarcity was a false concept in realms of energy and the earth. Bataille linked economic thought to the world's energy sources in a manner that supposed as fact that the on a daily basis the surface of the earth received more energy than was needed to sustain life. The excess energy needed to be released and spent, indeed squandered to allow renewal and release of excess energy.

Quote: For some years, being obliged on occasion to answer the question "What are you working on?" I was embarrassed to have to say, "A book of political economy." Coming from me, this venture was disconcerting, at least to those who did not know me well. (The interest that is usually conferred on my books is of a literary sort and this was doubtless to be expected: One cannot as a matter of fact class them in a pre-defined genre.) I am still annoyed when I recall the superficial astonishment that greeted my reply; I had to explain myself, and what I was able to say in a few words was neither precise nor intelligible. Indeed, I had to add that the book I was writing (which I am now publishing) did not consider the facts the way qualified economists do, that I had a point of view from which a human sacrifice, the construction of a church or the gift of a jewel were no less interesting than the sale of wheat. In short, I had to try in vain to make clear the notion of a "general economy" in which the "expenditure" (the "consumption") of wealth, rather than production, was the primary object.

### C-3 FEAR OF NATURE'S ABUNDANCE

**Abstract** Designing for nature today. Design for the risk associated with settlements (way) off the grid. Can we explore what capacities of excess exist in nature that we do not usually attribute to architectural design.

An infamous episode of the HBO television series “The Sopranos” depicted two mafia hit men lost and increasingly unwound in (and by) the New Jersey Pine Barrens. Reeling in the snow and freezing winter weather, unable to determine direction or path, Paulie and Christopher increasingly collapse into fear in the face of an expanse of the pine forest.

The topological quality of a seemingly boundary less interior of trees and snow (the Pine Barrens) finds the otherwise ruthless characters unable to garner direction.

The Pine Barrens for us is a stand in: a prop for a concept and literal quality of nature that persists in the midst of even the most industrialized states. A zone of nature that is both a demonstrative act of preservation (control) but also of concern and hesitancy (fear). A forestalling of extinction, the forest is another ruin, signaling a hands-off anxiety and fear or damaging a deeply primordial site.

Paulie and Christopher, two mobsters, panic and as it turns out have zero skill to navigate in the face of nature. Normally the inflictors of risk, punishment and fear they instead reel into panic attacks as night falls.

The Pine Barrens is a conceptual site: a zone of nature preserved on the edge of the sprawling metropolis. Perhaps a new zone or interior that now serves as the origin of an architectural habitation. Instead of the other or periphery of the settled and codified metropolis. Our studio will make use of the Long Island Pine Barrens rather than those of New Jersey.



**Reference** Excerpt from John McPhee. “The Pine Barrens.”

The water of the Pine Barrens is soft and pure, and there is so much of it that, like the forest above it, it is an incongruity in place and time. In the sand under the pines is a natural reservoir of pure water that, in volume, is the equivalent of a lake seventy-five feet deep with a surface of a thousand square miles. If all the impounding reservoirs, storage reservoirs, and distribution reservoirs in the New York City water system were filled to capacity—from Neversink and Schoharie to the Croton basin and Central Park—the Pine Barrens aquifer would still contain thirty times as much water. So little of this water is used that it can be said to be untapped. Its constant temperature is fifty-four degrees, and, in the language of a hydrological report on the Pine Barrens prepared in 1966 for the United States Geological Survey, “it can be expected to be bacterially sterile, odorless, clear; its chemical purity approaches that of uncontaminated rain-water or melted glacier ice.

In the United States as a whole, only about thirty per cent of the rainfall gets into the ground; the rest is lost to surface runoff or to evaporation, transpiration from leaves, and similar interceptors. In the Pine Barrens, fully half of all precipitation makes its way into the great aquifer, for, as the government report put it, “the loose, sandy soil can imbibe as much as six inches of water per hour. The Pine Barrens rank as one of the greatest natural recharging areas in the world. Thus, the City of New York, say, could take all its daily water requirements out of the pines without fear of diminishing the basic supply. New Jersey could sell the Pine Barrens’ “annual ground-water discharge”—the part that at the moment is running off into the Atlantic Ocean—for about two hundred million dollars a year. However, New Jersey does not sell a drop, in part because the state has its own future needs to consider. In the eighteen-seventies, Joseph Wharton, the Philadelphia

mineralogist and financier for whom the Wharton School of Finance and Commerce of the University of Pennsylvania is named, recognized the enormous potentiality of the Pine Barrens as a source of water for Philadelphia, and between 1876 and 1890 he gradually acquired nearly a hundred thousand contiguous acres of Pine Barrens land. Wharton's plan called for thirty-three shallow reservoirs in the pines, connected by a network of canals to one stupendous reservoir in Camden, from which an aqueduct would go under the Delaware River and into Philadelphia, where the pure waters of New Jersey would emerge from every tap, replacing a water supply that has been described as "dirty, bacterial soup." Wharton's plan was never executed, mainly because the New Jersey legislature drew itself together and passed prohibiting legislation. Wharton died in 1909. The Wharton Tract, as his immense New Jersey landholding was called, has remained undeveloped. It was considered as a site for the United States Air Force Academy. The state was slow in acquiring it in the public interest, but at last did so in 1955, and the whole of it is now Wharton State Forest."

"Published in 1968 by Farrar, Straus and Giroux, First paperback edition, 1988. The contents of this book originally appeared in The New Yorker and were developed with the editorial counsel of William Shawn and Robert Bingham. The drawings by James Graves on the title page and on page 85 appeared originally in The New Yorker; copyright © 1967 by The New Yorker Magazine

## C-4 STRUCTURAL EMPATHY: 2.7 MILLION HOUSING UNITS

**Abstract** Affordable housing has since 1987 has primarily relied on a program known as *Low Income Tax Credits* to help alleviate high housing costs. Under the tax reform just passed by the United States Congress it is widely expected that the deep cuts to corporate tax rates will undermine the attractiveness of LIHTC and in effect deeply undercut the resources available to lower housing costs in the United States. A side effect or a planned destabilization it enunciates a program that has been at the heart of more than 2.7 million housing units in the United States. LIHTC constituted a massive building program; its outward architectural face was often in the form of New Urbanism or a neo-vernacular but the program was at its core national even as its goals was to distribute aid often in regional and block grants. Today, housing affordability is still severely stressed (see maps below). LIHTC and other government based programs are structural by nature – yet as housing instruments they are mobilized by designers, developers and advocates as a form of empathy. A structural means to help people's lives.

The studio will seek means to imagine how large-scale works become local and what could replace such tax instruments – and how it affects design. Our studio will closely examine how housing costs are moderated by the government and what the term empathy means when one works at structural level such as the tax code or policy initiatives operate between tax law, housing and places or people.

**Reference** Standardizing Heterogeneity: Public Housing and the Absent(ed) Architect  
by Michael Bell and Eunjeong Seong.  
[goo.gl/BFFTCS](http://goo.gl/BFFTCS)

*Federal Funds for Housing and for Affordability usually try to ameliorate the Market.*

In the early 1990's as the United States federal government was increasingly incentivizing the development of low-income, affordable and public housing within public/private partnerships the architectural discussion of these changes centered on design and planning initiatives instead of on the financial or economic transformations in the development means. A goal was to break down the standardized housing blocks emblematic of the early decades of public housing and to engage the entrepreneurial logic of markets as a driver of new housing solutions. At the root of the changes was an architecturally formless instrument—the Low-Income Housing Tax Credit—created by Congress in 1986 and intended to fund subsidized housing by deferred revenue rather than direct expenditure. It was also intended to shift ownership of the affordable and public housing to investors who theoretically could deliver an antidote to the monolithic housing blocks and essentially customize subsidized housing development to local context and needs.

The shifts were monumental in scope but barely registered in architectural discourse: the formerly centrally funded, planned, developed, owned and managed public housing developments developed since the 1937 Housing Act would over time be reborn as products of smaller scale non-profit developers seeded by the sale of tax credits against profits they did not have. The actual credit, sold to a for-profit company that makes use of the credit, provides the initial equity to start a project. Intended to break down the standardization characteristic of former eras public housing the changes have had an inverse effect in architecture leading to a new mass standardization of market housing construction techniques; an architectural heterogeneity applied atop very uniform set of financial practices. —The affect has also dramatically altered how and when architects engage in the design or social questions that are central to housing.

## Deconcentrating Poverty: Topological Housing Policies

At the federal level the attempts were in large part taken as a step to diminish concentrations of poverty in public housing developments and were instigated under a two left-to-center Clinton Era federal programs. Funds made available by the Department of Housing and Urban Development (HUD) for Public Housing Administrations (PHA's) during this period for were also designed to address decades of deferred maintenance in PHA developments. Unable to take on debt, aging public housing sites in the United States, long suffered a deficit in funding maintenance from rent rolls. Within HUD's new HOPE VI program funding streams were targeted for renovation and repair but also the policies required a demolition of a portion of each development's "hard units" the funding was only available if the PHA also agreed to remove actual aging apartments developed and managed since the PHA's inception in New Deal legislation in 1937.

New housing built to replace these "hard units" was intended for a higher income constituency (not the original tenants) and paralleled a wider move by HUD towards using vouchers and other subsidies to alleviate rent— as "soft units" these new dwellings (or now subsidized quasi-market apartments) have an attached but portable subsidy (a voucher) but outwardly they were intended to appear as part of the wider and generalized housing market. Similarly, the Quality Housing and Work Responsibility Act offered means to "deconcentrate" poverty concentrations that had become endemic in much public housing by allowing public housing authorities (PHA's) more actively distribute their populations but also to effectively become a participating public owner within a non-profit corporation created to realize the new public/private housing required by HOPE VI and QHWRA.

The changes in development mechanism meant that public housing—centrally funded, planned and managed since its origins 60 years earlier—was increasingly built within the same building logics, i.e., labor/material/financial means, as speculative housing. The often referenced and broad declaration of a decline in welfare state funding was actually more accurately a shift of that funding from direct expenditures to a myriad of deferred income instruments (such as Low-Income Housing Tax). Intended to instigate diversity or heterogeneity in public housing constituencies and literal design new quasi-public housing developments were realized within the same means of building that speculative housing in the United States has long relied on—a market for housing development that has long been seen as inadequate at serving lower income constituencies, but also was never seen as having capacity for innovation.

Architect: Removed

Tax credits and the entrepreneurial mechanisms they were intended to incentivize ideally would carry a reflexive capacity tipping this market into an innovative milieu. Yet in many ways the opposite has been the case. A case study we took on in Houston, Texas, in 1998, as HOPE VI programs were taking hold found speculative houses (in this case, single family houses typical for Houston) were built with virtually no architectural engagement—in one case we chronicled a \$12 per house design fee and several thousand dollars in fees for several hundred standardized houses. The percentage of construction costs for architecture fees: .028%.<sup>1</sup>

In United States housing markets—mass standardization—has of course meant low if nonexistent design fees, but it has also meant little if any research and development investment. While the debate of New Urbanism relation to the transformation of public housing drew major attention in a range of ideological stances it ultimately deflected the more urgent debate: what role does architecture play in housing when the market is the denominator and how had the federal government in seeking to disaggregate concentrations of poverty and to incentivize the entrepreneurial aspects of capital markets also diminished the role of architects in the deeply social and material aspects of housing?<sup>2</sup>

Tax credits and the myriad of financial instruments invented here created a new strata of affordable and low-income housing development but when coupled with a somewhat normative building industry and a later day form of syndication and distribution of the credit allocations (a narrow market) a new generally non-innovative genre of development resulted and one that essentially sought to occlude the presence of these funding streams—the past modeled in the mode of neo-vernacular architecture here makes it difficult to see the actual financial, social and ultimately economic history of what is being worked on. What could they do if they instigated Innovation and R + D in the Actual Housing Product?

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<sup>1</sup> For an analysis of quasi-market aspects of affordable and public housing development and federal shifts in housing policy during the 1990's see Michael Bell, *16 Houses: Designing the Public's Private House*, The Monacelli Press, 2004.

<sup>2</sup> For analysis of the geographic transformations in federal funding streams for housing, affordable housing and public housing development during the rise of tax credit programs, voucher and other forms of localized public/private redevelopment see: *Up Against the Sprawl: Public Policy and the Making of Southern California*, edited by Jennifer R. Wolch, Manuel Pastor, Peter Dreier, forward by Michael Dear, The University of Minnesota Press, 2004, Chapter 7, "Federal Expenditures, Intrametropolitan Poverty, and Fiscal Disparities between Cities " by Pascale Joassart-Marcelli, Juliet Musso, and Jennifer Wolch.

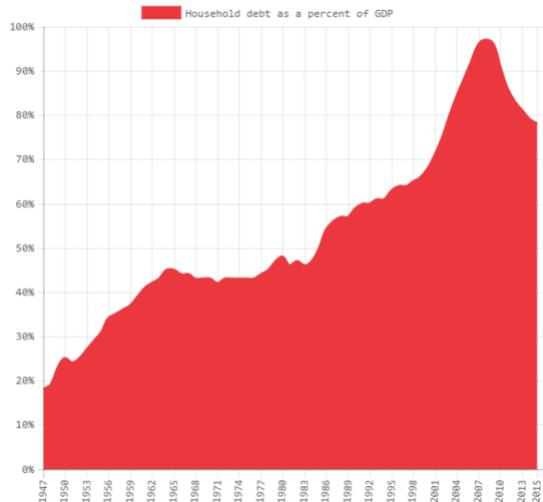
During this same period of time other genres of architectural inquiry and innovation were often focused on dismantling the modes of mass-standardization that were at the root of public housing. From conceptual work on the calculus of continual change to new modes of fabrication and their capacity for individuation a double project was at hand in the 1990's. One that increasingly sought innovation in reflexive behavior and one that saw final products as unique and one off but sprung from modes of technical innovation that required large aggregate sums of money-funding for the research and development and the factories that are capable of complex production. If the conditions (the building industry in speculative housing) are not optimal or the example of public vs. private housing seems unfair the question remains: at one point does the drives to customization that today is often seen as a game changer alter the role of the designer in regard to development markets. Is mass customization a way to allow deep market logic and yet sustain innovation—originality? New Urbanism has been in many ways a mandated form of heterogeneity—certainly not mass customization, but intended to provide difference and too often mask the monolithic aspects of housing development (formally and financially). But today new computational control in design (even low-cost software) provide new level of digital coordination with development practices, and a more precise way to define and to stage risk and its management (of all types). These means often constitute the basis for a drive towards an individuated landscape—a mass customized environment. The normative way to discuss the transformation is to invoke a post-Taylorist or post-Fordism economy—to describe a new way to build or fabricate as an attribute of a new economic paradigm. In this realm, the reflexive capacity of a new architectural posture—and a customized product—has advocates, but what has been missing in this debate is a drift away from the social aspects of economics in production and what could be seen as a move towards more immediate forms of finance as a localized practice and as the generative basis for a more local and thereby customized product (a building, a car, clothing, etc.).

Has the faith in mass-customization unwittingly made it difficult to discuss the wider project of economics and more so to address the deeper strains of inequity that we have seen and indeed are enabled by enriched computational capacity in finance and banking regimes—capacity coupled with a lack of regulatory means to address a new milieu of transactions and their affects. In short could mass customization somehow short-circuit a critical engagement with the mass modes of economics and social capacities that are only possible IF you seek to understand that scale of collective wealth and capacity? In this realm, the architectural or urban focus on specific forms of reflexive or customized works often has the effect of diminishing a compensatory knowledge of the wider milieu. A real-estate developer need not be an economist to be successful at housing (or office buildings, etc.), but they do need to enter and exit a market with some control over their investment—the “return on investment.”



*Erica Ashton with her brother-in-law, James Smith, and his daughter, Jamie, at the low-income Garden City Apartments in Houston. Ms. Ashton said she had no interest in moving to the Galleria district. Credit Ilana Panich-Linsman for The New York Times <https://www.nytimes.com/2017/07/02/us/federal-housing-assistance-urban-racial-divides.html>*

**Abstract** Central Bank debt in the world's top ten central banks has more than tripled since 2006. Markets for real estate and virtually every form of production and consumption were sustained by global quantitative easing. Near Zero interest rates. Personal housing debt and household debt as a percentage of the GDP has over the last century seen immense expansion. Will the architecture of the future rely on debt the same way and if not what can sustain it? Architecture today has become very adept at modeling risk and economy. Does this portend a new architectural nomenclature; a new asset? [below: household debt as a percentage of the GDP, 1939 to today]



computational and stochastic modeling. For many index trading is a low-cost way to diminish trading risk and yet harvest the collective insight of the market itself.

Indexing, while far from mathematically total, aspires to limit risk associated with accessing a small (minute) or even large sector of the exchange. Bogle seemed to be seeing this aspiration to the removal of risk as a disincentive to trading—if there is not risk and no unrealized opportunity (that is identified by the trader as opportunity) there is not a need to trade. Indexing relies on an active underlying market—it models a propensity that it then seeks to mine. Without real traders there is no risk to mine according to Bogle.

According to Bogle about 1/3 of United States' stock trading is done by indexing: he predicted a turning point, a threshold at which markets would freeze as indexing would arm everyone with a same ability to react to and forecast risk—each trader would in effect thwart the trajectory of the other. “If everybody indexed, the only word you could use is chaos, catastrophe,” he said. “There would be no trading, there would be no way to convert a stream of income into a pile of capital or a pile of capital into a stream of income. The markets would fail.”

#### [Bloomberg: Jack Bogle on Indexing and Risk](#)

Artificial intelligence, machine learning and robotics are often proclaimed to be a threat to labor markets. What do they portend in financial or economic markets? Aside from displaced jobs what do they incentivize or indeed make almost inevitable in development and the distribution of economic resources. What will be built in such a world if, for example, A.I. alters job migration, or collapses asset values.

Markets may fear uncertainty but risk is a driver and motivation and it is the unseen or undervalued asset that has historically been a source of future wealth production—if you can see a potential and you are (nearly) alone in knowing its existence the trade is yours. The wealth could be yours—it could belong to a nation, a city or a state—or neighborhood and constituency.

Today we see new means to model risk of every kind. But we also increasingly imagine ourselves less at the brunt of some forms of risk while others form immense crisis and undermine stability of all kinds. From structural mechanics to chemical engineering to fluid dynamics and geography and economics. Risk as its forecast within relatively low level computational systems is today increasingly made transparent to analysis and thus adjudication. Inside realms of engineering or

Markets and a reconciliation with scarcity have often gripped the architectural imagination—is this the norm for our future? We are increasingly advanced agents in modeling risk and opening new means—what will this enable?

Architecture and development are to a tremendous extent realized inside financial and economic risk models. Will this continue to the case in our future?

At the annual Berkshire Hathaway shareholders meeting (which is often seen more as a state fair) Jack Bogle, the founder of Vanguard Group, and a confidante of Warren Buffett offered a proclamation on risk by discussing the state of index trading—a use of algorithms to essentially trade the probability and momentum of an entire stock exchange. Indexing removes stock picking or the discrete, strategic, construction of a portfolio (as a means to hedge risk) and instead seeks to harvest the movement of the intelligence evident in the broader trading of the exchange itself. It harvests what everyone else is figuring out via artificial intelligence, machine learning or simply immense

medicine, advertising or banking or autonomous mobility and safety the prospects of a world driven more by choice than necessity is often depicted as offering a new model of liberty and indeed freedom. From social media to personal delivery—limits seem diminished even as crisis of all kinds still exists. Counter the immediacy of some forms of risk control vs the global migration from war or climate change.

Much of the confidence (when it occurs) seems to rise from a new and more granular scale to modeling. Risk modeling has opened a finer parsing of the value of what have been seen as stable or older assets: indeed, often exhausted assets. A re-monetization of private housing (Airbnb) or the private automobile (Uber, Lyft)—risk models made possible by anonymous but secure transactions (peer to peer) in effect begin to revise the privacy and value of entire asset classes. You can share a latent temporal value in your home. But do they change the assets themselves and when, if at all, will these new models give rise to entirely new assets. After all the private car – relied upon by Uber or Lyft – is only a century old as a human invention—an entirely new asset that drove 100 years of urbanization (and de-urbanization).

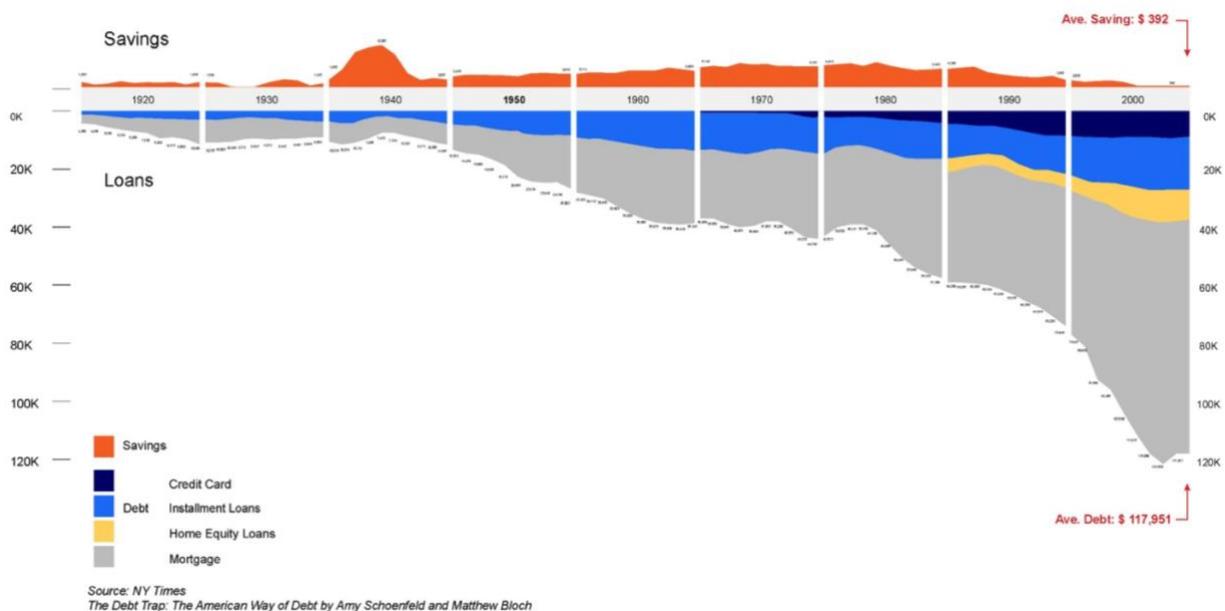
What are the next assets, how do we find them and more so do we trade them?

What are their risk qualities? What can they not pay attention to?

### After Remonetizing

Borne of new risk models and in effect not bound by former constraints older assets are made more pliant but do they still remain in place as their assumed nomenclatures. For example: Airbnb does not (seem) to alter the valuation of housing to make it more affordable; it might in fact make it more valuable and expensive. It (sort of) addresses a scarcity of housing, by instead seeking to unlock a latent but un-assessed value in the temporal aspects of occupancy. Housing may become more affordable because the owner has relinquished part of its use and thereby gained income that offsets costs. But it also creates a class of housing subjects whose tenure is highly temporal. Uber is similar. In fact, these two services (as they are known) seem to accelerate the stress of scarcity by removing what was **excess** capacity from an assets value—you index that value and sell it to someone else. What happens when that value is drained or made essential?

If the privacy of a home (and household) prevented such a sharing economy in prior decades, today it seems the anonymous and encrypted means of a peer to peer transaction secures both privacy and transparency at once—in one mathematic equation. This is not personal trust between a buyer and seller but instead an outsourcing of risk and perhaps an even greater form of distance between persons who are otherwise deeply proximate: you are in my house and my car but I have no idea who you (really) are. I may not need to either.

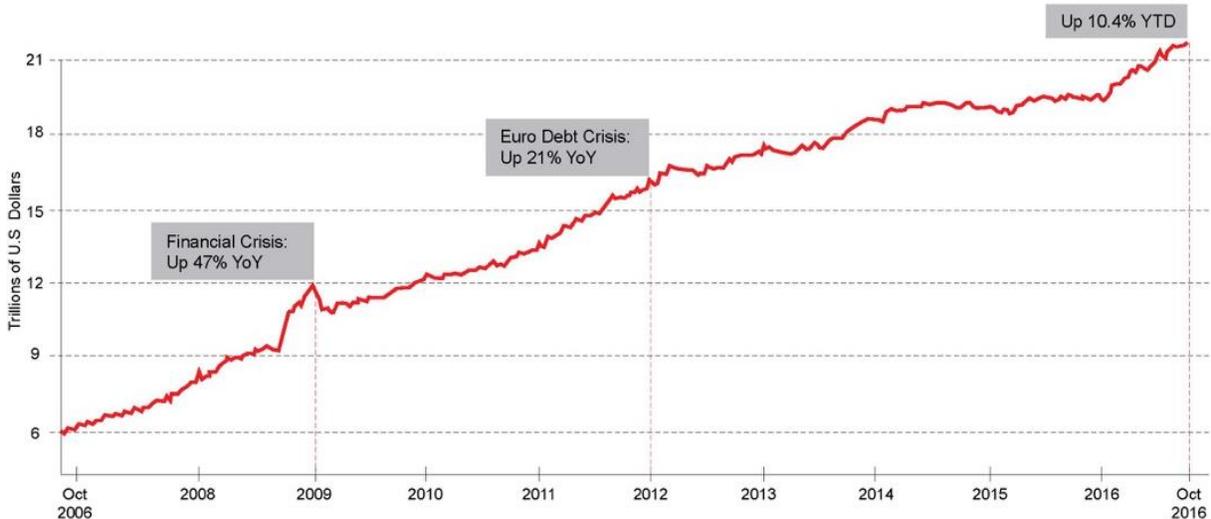


Household debt accrual and type since the 1920's (the New York Times); Central Bank Debt, since 2006, Bloomberg

## Biggest Getting Bigger

The combined assets of the 10 largest central banks keep growing

■ Central Bank Balance Sheets



## C-6 WHAT IF EFFICIENCY WAS NOT THE ANSWER?

WHY WE CAN'T RELY ON REAL ESTATE OR MECHANICAL EFFICIENCY AS A DENOMINATOR

Buildings secure immense amount of economic risk: they are a form of collateral.

While architects are routinely imagined to be in a struggle (if not a victim) of real estate practices how could we in turn see the built environment as the backstop to leverage and debt. Its security.

In an imagined contrite posture toward finance the perceived burden of investment (real estate; return on investment or ROI) the architectural industry frequently seeks to deliver a higher level of efficiency. To make a better asset. A penance offered to increase ROI. One can point to demonstrative success: housing, for example, today consumes 40% less energy per square foot than it did in 1985. One can find such data at almost any level of construction and design over similar periods of time.

If one seeks such efficiency, we quickly find ourselves in two benchmarks of capital markets: productivity and innovation. Increased productivity offers more potential for wealth accumulation. Innovation, where it's possible, changes the equation entirely offering new ways to increase productivity or indeed allows altogether new achievements. An expansion of the markets and thereby wealth. Architecture routinely seeks both of these claims yet rarely asks (it seems) what is the out limit of this expansion. Indeed, does wealth production inextricably link itself to architecture or building or can we imagine an architecture that has less of a connection to capital accumulation.

Why, do we monetize housing in the first place? Is that inevitable?

Warren Buffett returns to the scene of our studio: again, in 2018.

"Change is painful for a lot of people," said Buffett at the Berkshire annual meeting. "I think it's absolutely essential to America that we become more productive, because that's the only way we increase consumption per capita."

"Buffett, 86, said that gross domestic product per person in the U.S. is six times higher now than when he was born, reiterating his optimism about the nation's ability to generate wealth. That contrasts with the view of Donald Trump during his successful presidential campaign, when he said that the U.S. was ripped off by free-trade agreements. The president

spoke in his inaugural speech in January about "[American carnage](#)" where rusted-out factories are scattered like tombstones."

### Reference

Warren Buffett: "[I think it's absolutely essential to America that we become more productive, because that's the only way we increase consumption per capita.](#)"

While Buffett's optimism is understandable it also can be coupled and seen in light of several decades of expanded leverage and debt. And a faith in increased productivity and consumption. In this context how we gage an architectural role for building as real estate, as material repositories of wealth and consumption, or as jobs creators changes. What is sustainability in this regard. What happens if credit expansion reaches a real or even virtual limit where the credit regimes we consider the norm in building are simply not tenable.

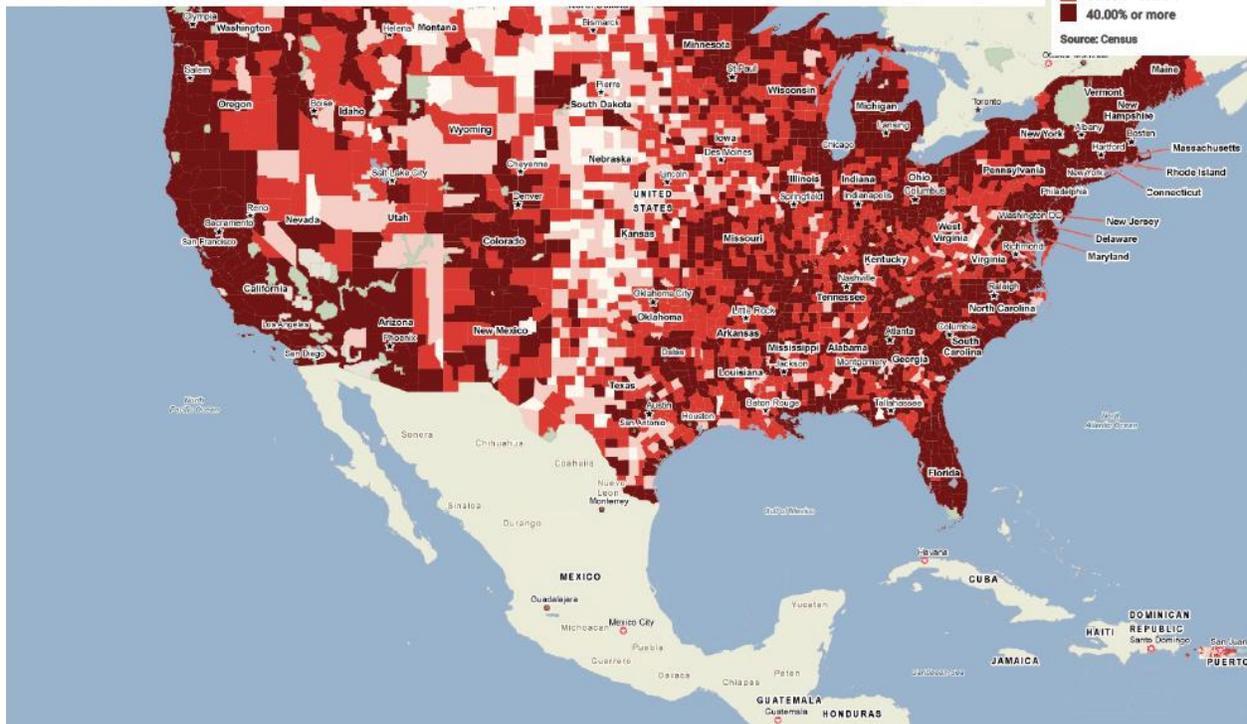
Studio readings will supplement this question and we will couple this with design work that ideally could affect and instigates new economies of housing.

### Reference

[Buffett Laments 'Roadkill' Who Lose Jobs, Says U.S. Must Help](#)

### Estimated percent of all renters who are cost burdened between 2010-2014.

Percent of renter households for whom gross rent is 30% or more of household income between 2010-2014. Gross rent is the contract rent plus the estimated average monthly cost of utilities (electricity, gas, water and sewer) and fuels (oil, coal, kerosene, wood, etc.) if these are paid by the renter (or paid for the renter by someone else). Gross rent is intended to eliminate differentials that result from varying practices with respect to the inclusion of utilities and fuels as part of the rental payment. Percentage calculations were suppressed in cases where the denominator of the calculation was less than 10 of the unit that is being described (e.g., households, people, householders, etc). Denominators for percentage calculations were created by summing all of the component data items in a particular dataset. According to the Census, these data should not be compared with 2000 Census figures.



Housing Cost Stressed in the United States. Households where renters pay more than 30% of gross income on housing. Joint Center for Housing Studies, Harvard University.

### Reference

[Post Scarcity Anarchism: Murray Bookchin. 1971.](#)

## C-7 Architecture Invention and Entirely New Genres of Design

Is there another design evolution possible inside the architectural nomenclature of window or doorway? Of roof or wall or floor—in foundations?

Historically we can point to pivotal moments when terms have changed and where new technologies instigated changes and innovation to the very DNA of an architectural element.

In the past decade, one can point to what seem like pivotal moments: collaborations between SANAA and Transsolar at the Toledo Art Museum – a glass plenum space becomes a thermal and optic barrier that forms a room. The design was of the thermal conditions. Or Gehry Partners Louis Vuitton Foundation where a dilated enclosure, structure and thermal barrier seemingly invert a century of asymptotically thin curtain walls creating an un-sprung void or a kind of lapsed plastic space. Glue lams turned on their side, a weakened span condition.

But are we using the wrong terms in an attempt to stabilize key components of architecture and buildings against history?

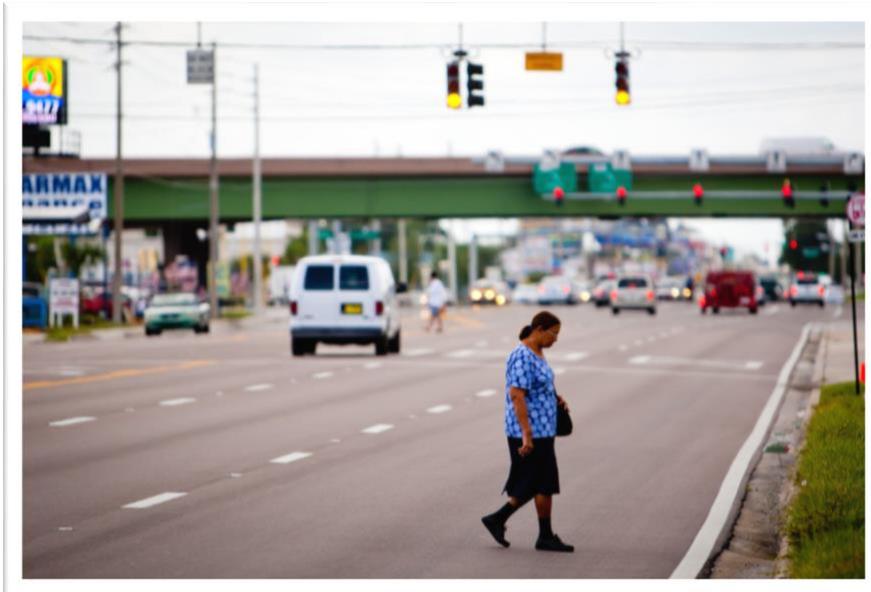
Architectural work is deeply rooted in geometry and form: we are reminded of the emergence of the “ribbon window” and of Bruno Reichlin’s later declaration of its extended horizon, a topology of space, that curves and threatens the vertical reciprocity with a standing person. Reichlin’s reading of the ribbon window still allowed the term window to persist, but he saw Le Corbusier’s window as threatening the stability that his mentor, Auguste Perret, saw as essential to the very term window. For Perret, the vertically proportioned aedicule window delineated a threshold between inside by way of its tense and short horizon line. Yet the ribbon window was still called a window. Was it? Formally, perhaps this is the case but what of the experience?



Today where do we see these terms—is there an elastic limit to their meaning?

Today relatively inexpensive software offers a technology to examine (to see) materials and structural behavior in ways that could render old categories obsolete. Structural analysis allows us to see stress/strain but the computer is modeling chemical behavior: molecular stressing of chemical materials here depicted in geometrical mesh. Can we model our way out of the past and indeed find new architectural elements?

C-8 THE LAST MILE: A NEW EVERYDAY  
WILL AUTONOMOUS MOBILITY ALTER THE TERRAIN VAGUE OF THE PAST 40 YEARS.



Chiaroscuro: Life at the Infrastructural / Un Cities or Today's Last Mile

A fiction close to reality (see the photograph carefully): As she left the bus in suburban Orlando on July 18, 2006, at the height of the foreclosure crisis X might have felt the sun on her face.

That day in Florida the humidity was low for summer—85%—but the sun was high and the sky was clear. A clear eye despite the thick air.

She later reported that she was distracted by the jump from the bottom step of the bus to the curb. The gap was not minor and there was no way to bridge this so instead she stepped down

onto the asphalt and then with a half gate, a syncopated stutter, she stepped back up the deep grained broom finish of the concrete curb (who had wielded the broom she thought instantly). The 9" wide solid surface, was momentary a floor: she then stepped back down again to the worn compacted grassless soil before finding another broomed concrete surface—an extensive sidewalk.

The nearly new vintage of the sidewalk meant it was supremely flat and planar (not a crack) but the soil on either side was far from even. The sidewalk was a pier. Absolute in its character. No one was here but herself. It seemed no budget had been afforded to control the grade or plantings.

The bus was already in transit before she reached the beam like, and white blinding sidewalk. The last mile—someone would pick her up at the nearby gas station. She had made it almost home: but now was standing near gas pumps, painted curbs and metal bollards that protected a near Styrofoam building. She waited patiently not making eye contact with anyone.

How was this built she thought. The bollard is stronger than the building.

News: In the New York Times, during the summer of 2011, as we were working at MoMA / PS-1 in Queens for an upcoming Museum of Modern Art exhibition on the future of the American suburbs we were alerted to the fact that Florida was home to the most dangerous roadways for pedestrians. Orlando and Tampa were in the top ten. Florida had five of the top ten most dangerous roadways for pedestrian.

Who faced this danger?

Researchers at the DOT had found that it was lower income families and individuals who used mass transit (well, what would be mass transit if it were mass). Navigating the city by bus and then stepping on(to) roads that were never intended for people, the risk of the city was born inordinately by the poorest in the city. After a slow bus ride home in a city of private cars they then stepped into the terrain vague almost as exiles—the risk was real. But if conflated with the emotional timbre of the exposure and objectification of being examined by 1000's of drivers...it is doubly brutal.

Counting the cars on the New Jersey Turnpike: they've all come to look for American. In Florida—down cast eyes conceal anxiety as one traverses the no man's land of the last mile.

**Reference**

[On Wide Florida Roads, Running for Dear Life](#)



## Faculty

Michael Bell  
www.bell-seong.com

Michael Bell is Professor of Architecture at Columbia University Graduate School of Architecture Planning and Preservation. Bell is founding Chair of the Columbia Conference on Architecture, Engineering and Materials, a multi-year research program hosted at GSAPP in coordination with Columbia's Fu Foundation School of Engineering and Applied Science and the Institute for Lightweight Structures and Conceptual Design (ILEK) at the University of Stuttgart. Bell served as Director, Master of Architecture, Core Design Studios, (2000-14) and the Coordinator of the GSAPP Housing Design Studios (2000-11).

Research conference convened by GSAPP in collaboration with: Fu Foundation School of Engineering; the Institute for Lightweight Design and Conceptual Structures, University of Stuttgart. <https://goo.gl/EUEJ1W> / <https://goo.gl/WHM9EB> / <https://goo.gl/LH2Kc3> / <https://goo.gl/HrzaQD>

Bell's architectural design has been commissioned/exhibited by The Museum of Modern Art, New York; The Venice Biennale; the Architectural League of New York; the University Art Museum, Berkeley and has been shown in museums and galleries in Europe, Mexico and China. Architectural design by Bell is included in the Permanent Collection of the San Francisco Museum of Modern Art. His Geffter Press / Binocular House is included in American Masterwork Houses of the 20th and 21st Century by Kenneth Frampton. Bell has received four Progressive Architecture Awards.

Books by Michael Bell include Engineered Transparency: The Technical, Visual, and Spatial Effects of Glass; Solid States: Concrete in Transition; Post-Ductility: Metals in Architecture and Engineering; Permanent Change: Plastics in Architecture and Engineering; 16 Houses: Designing the Public's Private House; Michael Bell: Space Replaces Us: Essays and Projects on the City; and Slow Space. Bell is the editor of a monograph on the architecture of Stanley Saitowitz.

Bell taught at the University of California at Berkeley (1987-94) and Rice University (1994-99) and held visiting professorships at the Harvard University, Graduate School of Design; Cornell University, School of Architecture; the University of Michigan, Saarinen Visiting Professor of Architecture; and Berkeley, the Howard A. Friedman Professor of Practice in Architecture. Bell is a former Fellow of the Joint Center for Housing Studies, Harvard University (2011-13). During 2016/17 Bell was Visiting Professor at the Stanford University, School of Engineering, where he collaborates with the Center for Design Research in the Department of Mechanical Engineering.

Michael Bell received a Master of Architecture degree from the University of California, Berkeley and a Bachelor of Science degree from the Catholic University of America in Washington DC. He established his practice while teaching at Berkeley. Today the practice also includes Eunjeong Seong and is based in New York City and the Berkeley, California.





