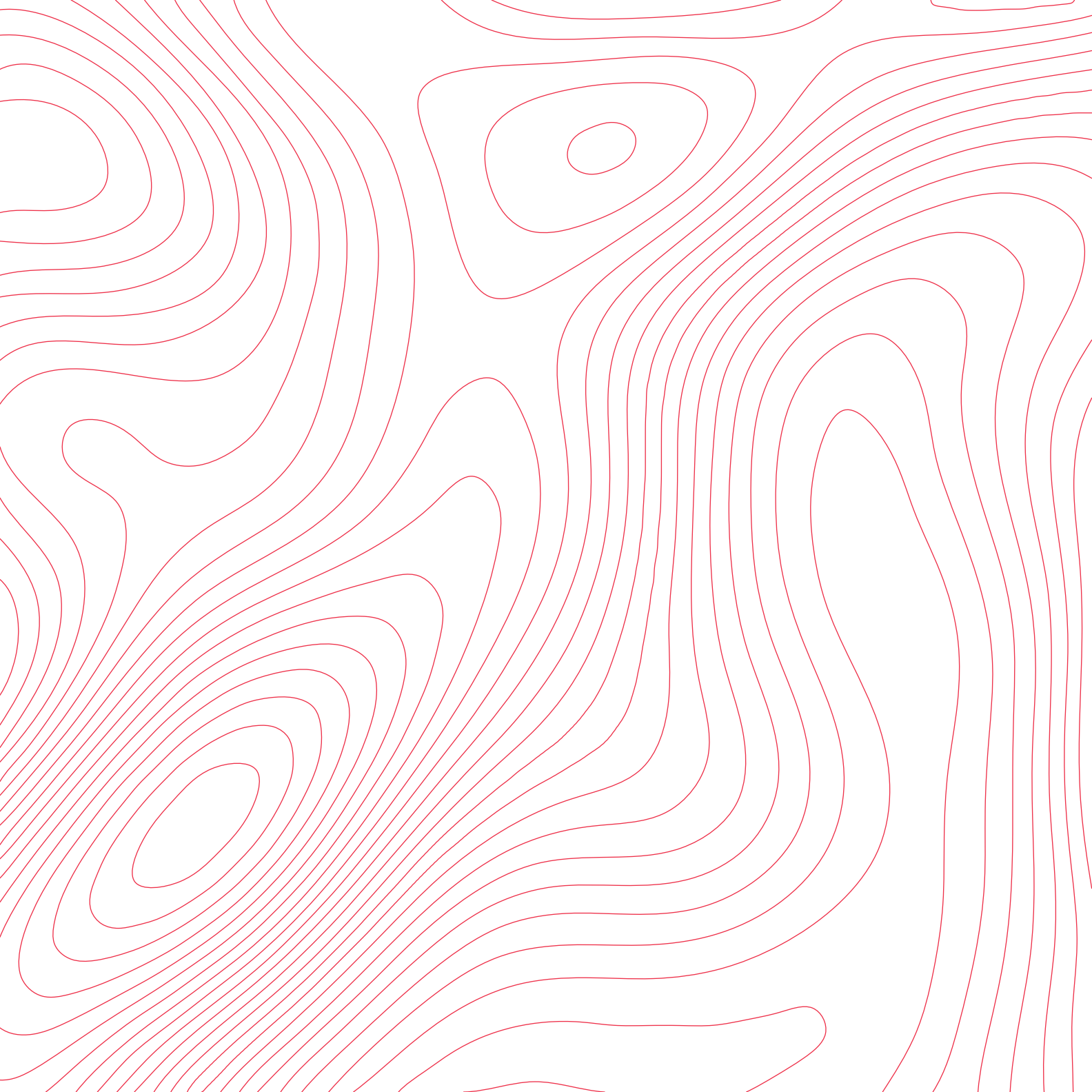








Telesis: Habitation

The Gibbs College of Architecture Student Journal at
The University of Oklahoma

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The views and opinions shared by an author are their own and do not represent the views and opinions of the

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tel•e•sis

(te-lə-səs)

Progress that is intelligently planned
and directed : The attainment of desired
ends by the application of intelligent
human effort to the means.

Editorial

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The Telesis Team

Telesis Vol. IV 2021

Call for Work

Architects, designers, engineers, artists, and others are constantly participating in processes that shape our world. Many dominant cultures have believed themselves to be separate from and, at times, superior to, nature. By contrast, *Telesis* seeks contributions that explore means of habitation in support of the environment.

This call for submissions invites projects that seek to invigorate aspirations for change, help cope with environmental uncertainty, and, propose solutions for the future of habitation in light of a changing climate.

Telesis: Habitation (Vol. IV) invites problem solvers from all disciplines to question how we may ensure all

things, living and non-living, may continue to inhabit our planet. Questioning the consequences and possibilities of habitation will involve developing new strategies for housing, food systems, education, consumerism, and more. Submissions that merge humanities, social science, and scientific perspectives are encouraged.

We hope to create a collection of design proposals, essays, stories, and other mediums to evoke inspiration and urgency.

The pages that follow represent responses to this Call for Work.

Telesis Team Statment

One's sense of belonging is akin to perceiving one's habitat. By understanding the general area that contains all the resources a given species needs to survive, species will stay put to leverage prospects and refuge. This relationship can become so solidified, a species may thrive in its habitat to the point of directly altering its surroundings. This process involves not only identifying, or perceiving, that habitat, but also strengthening a bond with it: carving and shaping it to intensify the species' state of refuge. When does this alteration go too far? When does altering the landscape to increase one's sense of belonging become so immense, that the act folds back on itself, yielding nothing but destruction and isolation?

One approach is to assume any alteration solely for the sake of "improving nature" is an example of going too far. In *The Country and the City*, Raymond Williams discusses the invention of scenery by the eighteenth century English bourgeois. Scenery was seen as the erasure of rural labor from a composed rural scene. Some instances did transcend strict aesthetic aims by doubling as game reserves, thus incorporating sport.

When men could produce their own nature both by the physical means of improvement (earth-moving with new machines; draining and irrigation; pumping water to elevated sites) and by the understanding of the physical laws of light and thence of artificial viewpoints and perspectives, there was bound to be a change from the limited conventionally symbolic and iconographic decoration of the land under immediate view. . . For what was being done, by this new class, with new capital, new equipment, and new skills to hire, was indeed a disposition of "Nature" to their own point of view. If we ask, finally, who the genius of the place may be, we find that he is its owner, its proprietor, its improver.¹

To become an improver of nature is to have entered a

flawed headspace. As Wendell Berry explains, "We have lived by the assumption that what was good for us would be good for the world. And this has been based on the even flimsier assumption that we could know with any certainty what was good even for us."² Wherever the tipping point lies, it is reasonable to assume humankind is mid-topple. As we've already established, the act of habitation is twofold. Not only does it require living in a habitat, but it also requires that one has a sense of that habitat. For humans, this poses a serious problem. Our actions have resulted in systems becoming increasingly global; thus many individuals participate in far-reaching networks that negate understanding.

As such, habitation for many people has ceased to occur. This is also largely because habitats have become potentially boundless as a result of our networks acquiring global scope. One does not inhabit if they have little to no knowledge or agency over food systems, shelter, cultural codes, environmental affects, and so forth. If this thought process is taken further, it is reasonable to assume the domain of an architect, engineer, or similar designer is no longer principally spatial. It requires an acknowledgement of the substance through which we act, that being the networks, living and nonliving, that abound.

It remains possible for humans to "do good" within such a state of things, even if unintentionally. If we return to our previous example of the English fathers of scenery, it's important to give credit to John Bartram, a colonist who started the business of shipping boxes of seeds from the colonies to England. This intercontinental network of shipping seeds seems born from a condemnable "humankind superior to nature" mindset, especially since the demand for this trade was fueled by the "improvers" of nature. The truth is this effort simultaneously fueled scientific inquiry and England's ecology.³ Today, similar networks work to offset deforestation.⁴ But just as it is possible to "do good," it is also possible the lessons learned from nature can yield negative unintended consequences.

For example, we learned of the tessellation of hexagons from bee honeycomb structures and other examples found in nature. This lesson in efficiency is leveraged in the placement and spacing of cell towers.⁵ It has been debated for nearly a decade now whether or not the cellular radiation from said towers is contributing to the extinction of bees. Unfortunately, this goal of cleaning milk we've spilled is bound to be our foremost occupation should we endure. It's undeniable that nature will continue to lure us into doing so, via its sensory embellishments, psychological effects, and other vehicles of influence.

Community is essential to habitation. For years, human community was strictly enmeshed with labor and agricultural self-sufficiency. Our ability to produce agriculture has flatlined. Abandonment of laborers and increase in demand is revealing our inability to conceive of the systems our communities rely on to endure—systems from which communities were born.

Many people assume the answer entails constricting assemblages, intensifying borders, and turning our backs on those in need. Geoffrey West counters this position in *Scale* by proposing "to sustain open-ended growth in light of resource limitation requires continuous cycles of paradigm-shifting innovations" and this comes from teamwork, which is why innovations are most born in the social incubators that are our world's dense cities.⁶

Community gives opportunity to adaptation, which is why it is essential to habitation. In this way, increasing the sense of belonging not only for humans in need, but anything living or non-living that needs our attention will ensure humankind's survival.

Of course, this is easier said than done. Designers are posed with the amorphousness of environmental uncertainty. This problem was referred to as a "wicked problem" by Horst Rittel and is being called a "Hyperobject" by Timothy Morton. Both authors use their unique terms to highlight the difficulty of planning issues or the process of orchestrating a response.

Acquiring knowledge of any substance is incredibly

complex, as it is entangled in endless networks. Because of this, there is no such thing as a blank slate. There is only opportunity within existing relationships. The architecture profession can no longer afford to view this substance as a collection of contextual elements envining its projects, available to be either acknowledged, abandoned, or parodied. It must map these relationships and understand its role as a participant within our world's endless becoming.

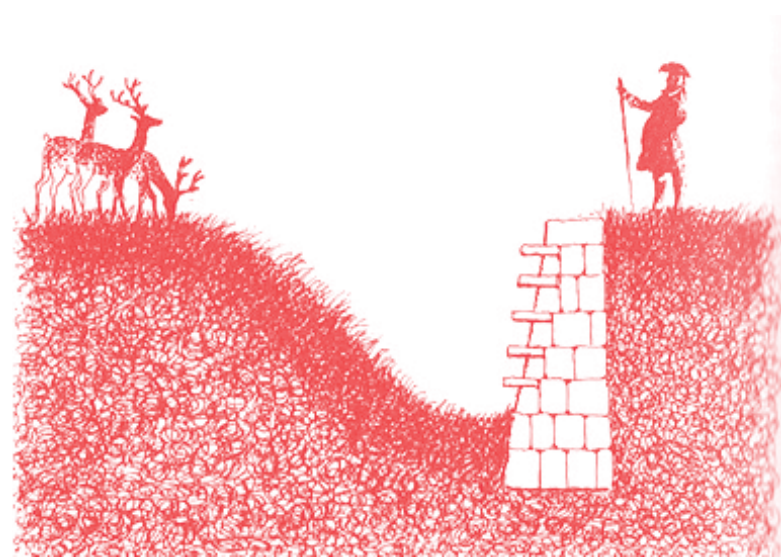


Image courtesy of Architettura Ecosostenibile

The ha ha wall was a sectional gesture used to keep an estate's livestock at bay, while ensuring views remained unhindered.



Image courtesy of 99% Invisible
Cell tower disguised as a tree

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New

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Dimitri Bradford

Headspace

Telesis Vol. IV 2021

Artist's Statement

Homes, houses, apartments, tents, churches, schools, nature. Wherever our bodies reside is of great importance to our lives, and serves to create spaces that envelop our senses and influence our decisions as well as our creativity. However, all outside experiences are only as powerful as the mind allows them to be. Oftentimes we seek a change of scenery as a remedy to whatever challenges we face in life. We often forget that we can make those same kinds of changes in our own mind.

By altering the inner experience, we create a new window through which to see the world. In effect, an inner habitation is our only permanent home. Yet despite its permanence, it is malleable. This work celebrates the constant mental transition we all undergo as we fight our demons, discover new mindscapes and inner spaces, and choose our own path through the valley of life.



Realizing Memory

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Jason Cytacki

Telesis Vol. IV 2021

These works present vignettes of everyday American midwestern places. I draw upon locations pulled from my own personal experience; pieces of walls, furniture, and objects are all recreations from my childhood home in Indiana and related spaces. Through the mediums of painting and sculpture, I painstakingly reconstruct spaces from family photos, archival images, and memories.

Chair and Window



Pizzahut



Although these images reflect my personal experiences, they are curated to feel familiar and evoke a sense of ambiguous but relatable familiarity. I present these locations as sort of liminal spaces, appearing as a stage settings which the actors seem to have already left. These vacant scenes exist at the threshold of something ending or something that is yet to come.



Heavy



High Life

Additionally, these pieces question the ways memory and place intertwine. The realism with which these spaces are presented is undermined by evidence of their creation. In my paintings, the illusion dissolves upon closer inspection, when visible details such as the corrugation of cardboard and translucent tape reveals that these are indeed not real locations, but instead miniature dioramas constructed of craft materials.



Shelf



TV

My sculptures continue this sense of artificially constructed reality. Inspired by the crumbling wonders of classical ruins, these life-sized fragments are each somehow incomplete. Drawings are unfinished and structural elements are left exposed; this stereotypical Midwestern American world fades but may never have actually existed at all. Much as classical ruins reflect an irretrievable halcyon era, these sculptures create a sense of unattainable reality, a futile recreation of a seemingly perfect past.

Orienteering Migrations

Telesis Vol. IV 2021

A thoughtful enough Arrangement of Anchors and Buoys, Lenses and Lanthorns, forming a perfect Line across the Ocean, all the way from the Delaware Bay to the Spanish Extremadura. . . 'Tis here Mason and Dixon will retire. . . Betwixt themselves, neither feels British enough anymore, nor quite American, for either Side of the Ocean. They are content to reside like Ferry-men or Bridge-keepers, ever in the Ubiquity of Flow, before a ceaseless Spectacle of Transition.

—Thomas Pynchon, *Mason and Dixon*

Unless one lives in an area where climate ramifications are significantly manifest, such as California with its steady smog and annual wildfires, it is difficult for people to perceive pollution in, and its effects on, their immediate environment. One may consult their phone to view anything from satellite imagery to apps synced with CO2 detectors, however, this translation from place to data not only stymies the availability of such information, but also deflates any call to action. This sentiment applies specifically to those areas and peoples who are privileged with the ability to literally evade, and

emotionally transfer responsibilities regarding, our current climatic degradation.

Because of the dispersion of pollution, these issues exist on an intercontinental scale. Despite their lack of perceptibility, these issues concern anyone from today's city dweller to tomorrow's climate refugee. After all, once everyone is experiencing the ramifications of climate change and is willing to collectively act, we will have likely passed many, if not all, of the climate's tipping points.¹

Airborne pollution also travels on an intercontinental scale. Consider the dust storms and strong winds that

are pushing pollution from China, across the Pacific Ocean, to the United States' West Coast.² Nitrogen dioxide can become infused within water cycles and then be transported via acidic rains. Mercury collects in rocks in the earth's crust and lead occurs naturally in soils. Both can collect in bodies of water. Because of this, it is easy for lead and mercury to become entwined within food systems, some of which are intercontinental.³

There are increasing instances where migration must occur to escape uninhabitable climates. People who are forced to migrate from uninhabitable places are being referred to as climate refugees, environment refugees, or eco-refugees. A report published by the International Federation of Red Cross and Red Crescent Societies in October of 2020 shared that "a majority of the 30.7 million people displaced in 2020 were fleeing floods, wildfire, drought or heat waves."⁴ In addition, a report published by the World Bank in September of that year stated, "more than 200 million people are likely to migrate over the next three decades because of extreme weather events or the slow degradation of their environments."⁴ About a quarter of these migrants are expected to cross borders in their search of habitable lands.

The term "pollution refugee" is being used more commonly to describe those seeking areas of safe air quality. For example, pollution refugees have recently fled New Delhi, India.⁵ In Diane Taylor's "Air pollution will lead to mass migration," "Alex Randall, coordinator at the Climate & Migration Coalition, said safe and legal routes to allow people to migrate needed to be established."⁶ This

comment was made in response to a recent extradition case held in France where a Bangladeshi refugee with asthma avoided deportation from France "after his lawyer argued that he risked a severe deterioration in his condition, and possibly premature death, due to the dangerous levels of pollution in his homeland."⁶

In his writing for *Exit*, an exhibition created with Diller Scofidio + Renfro, statistician Mark Hansen, and a team of scientists, Paul Virilio states that current migration trends may "torpedo the customary distinction between sedentariness and nomadism."⁷ The purpose of the exhibition is to document and convey the severity of current and projected migrations using dynamic, immersive diagrams. Virilio also claims we need to embrace the era currently kicking off, the era of "habitable human traffic."⁷ In his call for abandoning the city in favor of "encampments and temporary housing," one begins to question the role of wayfinding in this migratory age. This is especially the case since our basic understanding of wayfinding, à la Kevin Lynch, is typically confined to the city.

In "Disorientation," from *Telesis: Isolation*, Giuliana Vaccarino Gearty questions the benefits of feeling lost in a city. There is value to "unpredictability, of heart-quickenning disorientation."⁸ Giuliana clarifies this need exists in cities all too Cartesian or gridded. In an age when migrations become paramount, densities will dissolve into a collection of flows of habitable traffic, forcing us to rely on new methods of orientation. For this reason, I analyze three typologies of wayfinding landmarks before offering a proposal for a clean air wayfinding apparatus.

Roman Obelisk—Terminus

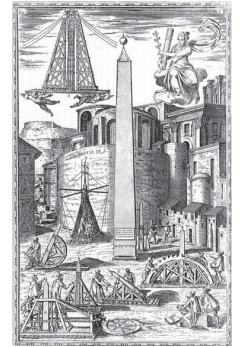
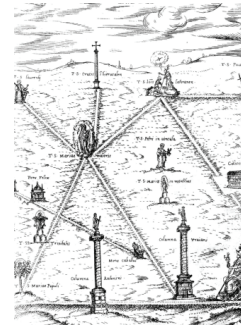
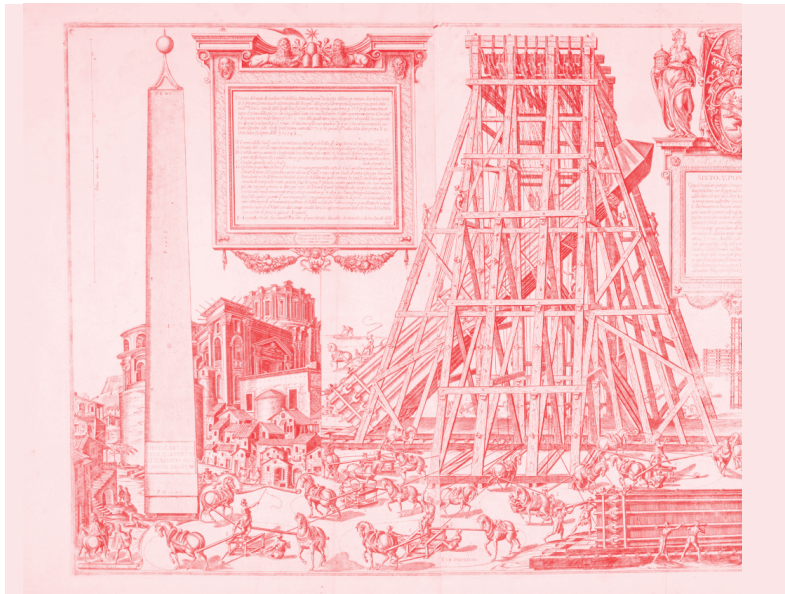
Not all landmarks indicate arrival or an end to travel. Many landmarks serve as navigatory reference points. In the words of Kevin Lynch, within the context of a city:

Few people had an accurate sense of where these distant landmarks were and how to make one's way to the base of either building. Most of Boston's distant landmarks, in fact, were "bottomless"; they had a peculiar floating quality. The John Hancock Building, the Custom House, and the Court House are all dominant on the general skyline, but the location and identity of their base is by no means as significant as that of their top.⁹

This wasn't the case for Rome's obelisks which operated on two levels, as points of navigatory reference and as explicit

points of arrival. Placed in front of basilicas, their purpose was to locate churches for traveling Catholics. In this way, the obelisks mark the end of a very ceremonious, formal travel, the pilgrimage.

Pope Sixtus V not only leveraged the Obelisks the empire had taken from Egypt as wayfinding apparatuses, but also created new streets on axis with each landmark. This gave clarity to Rome's fabric since it entailed the connection of seven churches which had previously felt disconnected. This plan likely had the effect of providing wayfinding elements for those unable to read street names. The Obelisks being situated "as focal points in squares to catch the eye at the end of axes."¹⁰



Left - Image courtesy of drawingmatter.org

Giovanni Guerra and Natale Bonifazio, detail from 'Plan, Elevation, and Perspective of the Castello Used in the Transportation of the Vatican Obelisk, and Views of the Original and Final Location of the Obelisk', published 1586.

Above Left - Image courtesy of Etienne Issa

Antonio Bordini, Map of Rome under Pope Sixtus V, 1588

Above Right - Image courtesy of Wikipedia

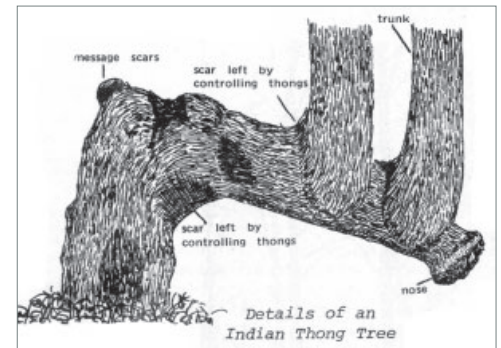
Antonio Fontana drawing of obelisk and constructions made from Pope Sixtus V- 1936

Native American Trail Markers—Direction

The Romans' landmark is a pillaged terminus. The Native Americans trail marker trees are an ingenious, soft approach to creating a landmark. By manipulating a tree's growth in its early stages, the Native Americans literally bent nature to serve their navigatory needs. These trees are referred to as marker trees, trail trees, and thong trees, the latter describing those shaped via a wooden thong, or crutch. Other methods of shaping involved molding saplings with rocks and dirt.¹¹

Bending the tree was crucial to indicate the presence of the trail and the direction in which it continued. In this way, the landmark signifies trajectories of travel and, taken together as a collection of wayfinding apparatuses, the trail trees act as the physical embodiment of a migratory path.

It isn't surprising the Native Americans created such a pure landmark, literally a slight deviation within a landscape. Despite the apparent strain in their Dali-esque resistance to gravity, this manipulation didn't cause premature death in the trail marker trees. For this reason, these methods, while slight, were strong and reliable. Many trail marker trees are still standing today.



Left - Image courtesy of Sheboygan Press
Native American trail marker tree

Above - Image courtesy of Springfield Greene County Library
Details of a Native American Thong Tree

Gwennap Head Day Markers—Approach

The Runnel Stone, a granite pinnacle roughly one mile south of Gwennap Head, Cornwall, United Kingdom, has caused thirty documented shipwrecks since 1880. It was partially visible above the water until 1928, when a steamboat struck it, removing a portion of the pinnacle. The Runnel Stone, now hidden, still serves as a hazard and requires apparatuses to indicate its location to ships approaching Gwennap Head, or Land's End.¹²

Parallax is the apparent change in the position of an object when viewed from different vantage points. It is used by astronomers to measure the distance of stars. In the case of Gwennap Head, parallax is used to indicate an approach which would result in collision with the Runnel Stone. Two structures are located on Gwennap Head: a red cone and a black and white cone atop a plinth. When the red cone covers the white and black structure, one's course is atop the runnel stone.

In addition to the cone landmarks, a droning buoy floats directly above the Runnel Stone. This is a replacement, as a ship, blown off course by a strong wind, accidentally tugged the first buoy with its anchor line into Mount's Bay. The current replacement wasn't situated above the Runnel Stone until 2012, fifty-two years after the prior's displacement. This area has a long history of failed attempts of marking the Runnel Stone. Many efforts, as early as 1795, entailed metal masts on top of the Runnel Stone. Each landmark was carried away either accidentally by ships or by storms.¹³

Leveraging parallax to influence travel has many possible applications. Gwennap Head has used this collection of apparatuses to indicate a harmful approach, but one can imagine how the same strategy could be used to indicate an ideal, intended approach. To convey intent, the red cone would need to incorporate universal symbols to ensure migrants understand their trajectory is dangerous or safe. Maybe this is why the people of Land's End chose a bright red, sharp cone to warn against their ship wrecker.



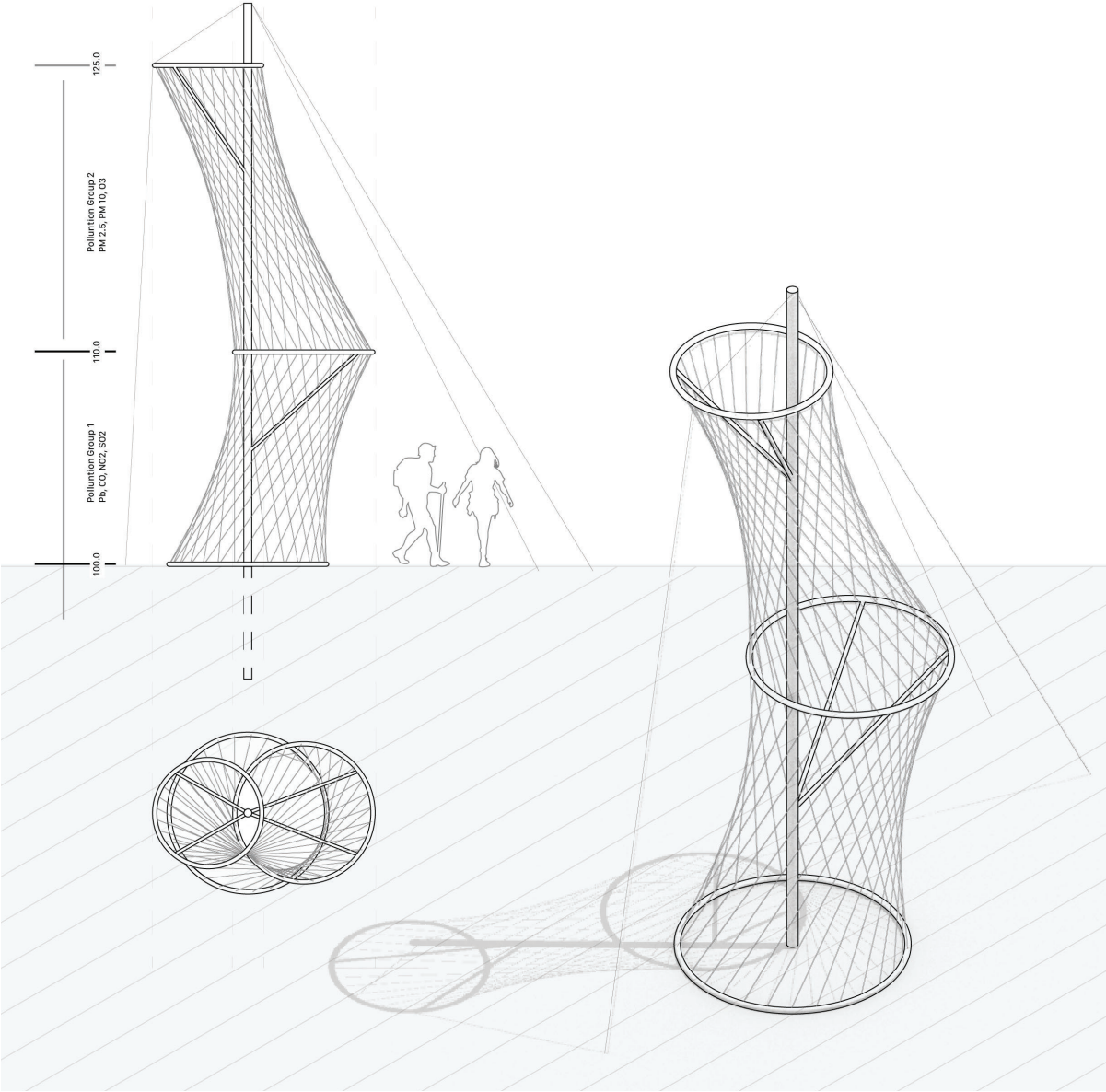
Left - Diagram by Ben DeCuyper

Diagram of Gwennap Head day markers. Not to scale

Below - Image courtesy of Geograph.org.uk

Gwennap Head day markers





Left - Drawing by Ben DeCuyper

Drawing of proposed clean air wayfinding apparatuses

Clean Air Wayfinding Apparatuses

Just as the obelisks depicted by Piranesi are ornamented with acanthus leaves of the Corinthian order, which symbolize rebirth, and the trail marker trees of the Native Americans are inherently decorative, the proposed clean air wayfinding apparatuses will be decorated. Their overall structure is to mimic the tree. Inspired by the Gwennap Head Day Markers, accompanying landmarks on large caster wheels will display universal symbols of survival or death to indicate ideal or harmful approach angles to the clean air apparatus.

Tufts University has developed textile detectors which change color when exposed to certain gasses. This material could be used for clothing worn by rescue workers, allowing them to more easily sense danger.¹⁴ If similar materials are produced to indicate the presence of not only volatile organic compounds but also all six critical pollutants, cords hung from the apparatuses could indicate an area's air quality. In this way, the apparatuses will indicate whether the travel can momentarily pause. In areas of poor air quality, the monuments will act inversely to those of Rome, informing "the visitor [they are to be] a pilgrim."¹⁵ If this is the case, the apparatus is to be guyed to indicate the direction recent visitors have taken. As such, over time, the apparatuses may direct migrants not only to one another, but also to moments of travel at rest.

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Honeycomb Habitat

Telesis Vol. IV 2021

Shaped by the landscape around us, our lives are often functionally and aesthetically driven by the environments we inhabit. Structure has continually and coincidentally evolved with humankind. Starting from rock structures which were simple in form and purpose to modern-day structures reaching half a mile into the sky with limitless function, humans have continually altered the spaces we use. Can the same be said of nonhumans' living habitats? Have nonhumans also morphed and altered their environment to meet their needs? Do their needs ever change, or do they seek to find ways to enhance their current situation? Threatening the essential nature of the way we eat, clothe ourselves, and live is the proposition of

bees altering their purpose or ability. In the same way that without bees the very nature of our everyday life would change, we too also threaten the way that bees survive.

One of the major threats is monoculture farming, which limits the bees' selection of pollen. By far the largest threat to bee habitats and the population in general is navigatory confusion and inability to return to their hive. Pesticides infiltrate the pollen and accumulate in the beeswax within the structure of the hive, which is also the storehouse for honey and the larvae. The pesticides in the bees' food and in the beeswax have been attributed to altering the chemical and physical ability bees have. Not only is this responsible for lack of return to habitat, but it also

is attributed to altering their foraging behavior and their larval development.¹ Furthermore, the pollution within bee's environment from cars and trucks can partially erase a flower's scent.² One contested influence on the loss of bee populations is the effect of radiation on bee communities. The overwhelming growth of the technology sector has led to an increase of mobile phone cell towers across the nations. Some experts believe the cellular radiation from these towers affects bees' navigational abilities, reproductive functions, and lifespan.³ All of these proposed inhibitors, a direct results of human actions, are factors that have led to the decline of the bee population.

Visiting up to forty flowers per minute, a foraging bee may travel as far as five miles on a foraging run. However, bees only have about five hundred miles of flight power in their wings before they die so she will stay closer to the hive if she can.⁴ Foragers usually keep within two miles of the hive, and seventy-five percent of flights are within half a mile. These are crucial factors to consider regarding humans' investment in protecting and furthering the bee population. This information can lead to the planting of pollenating plants in close proximity to hives.⁵

Similar to the spatial organization of a human household, the structure and use of a hive is segregated based on the bees' jobs. Essential to the function of a hive, the queen bee is protected by other bees since she is the only one who can further the life of the hive. Although they're female, worker bees are infertile. This is affected by a

pheromone released by the queen that suppresses the worker bees' ability to develop the appropriate reproductive apparatus. The female worker bees outnumber the male bees one hundred to one. But in the winter the male drones die off, leaving only the female bees, the workers, and the singular queen bee. The all-female swarm of bees crowd together tightly to form the winter cluster, with the queen at the warmest, core section of the group and the workers shaking and shivering around to maintain a survivable heat. Worker bees make up roughly eighty-five percent of the population and are the key constructors and repairers of the hive.

Honeycombs and beehives dated to Egyptian times provide evidence of the continual hexagon-shaped structure that bees use within their hives. Why is this? Why is it always the same shape? When building a honeycomb, the worker bees ensure the maximum efficiency of energy and resources. They strive to limit the use of wax, which is used to construct the comb, and to limit the amount of energy needed, which is supported by the consumption of honey. In order to gain energy, honeybees must make and eat about two tablespoons of honey to yield about one ounce of wax. During its lifetime, a bee can produce one-twelfth of a teaspoon of honey. To understand the value of honey to the hive, if a bee were to provide one pound of honey, it would need to visit about two million flowers.

To maximize efficacy of wax, bees construct the combs in a way that minimizes wasted space between cells while

also creating the most surface area within the cell to store honey. This is largely achieved by cells having many shared sides. This increases efficiency of wax used while minimizing energy expended to the partial construction based on shared walls. The calculations involving perimeter length, strength, and surface area to store honey were all evaluated in honeycomb conjecture mathematics which evaluated these factors according to shape. This proven mathematical theory proves that the hexagon provides the least-perimeter avenue to enclose infinitely many unit areas in the plane. Researchers are still unsure of the way the cells are created but, it is suggested that the bees build circular-shaped cells and use their body heat to melt the wax from a circle shape into a hexagon shape.⁶

In response to recent navigational confusion of the honeybees, landmarks could be developed to mark their flight pattern to a specific pollinator or location. Honey bees use the position of the sun to orientate themselves in the environment. When not using the sun's position they use unmovable sources of definition, such as rivers or other continuous landmarks.⁷ Bees are naturally attracted to flowers and other pollinators because of the smell of sugar that indicates nectar. The natural attraction to flowers also comes from the electrostatic forces flowers emit in conjunction with the electric forces of bees.⁸ To combat the loss of bee population due to navigational confusion from pollution and other human factors, the built environment could propose continuous landmarks that omit sugary smells and electrical forces to attract bees to pollinator locations. An urban park with a total radius of two miles could be developed to create an experience for urban dwellers and a healthy environment for bees. This environment would create a continuous path of smell indicators and include a diverse collection of pollinators. Development of methods to prevent pollution from human influences and prevention of cellular radiation would create a mediative, healthy environment for both parties. In an environment with minimal pollinators, the smell indicators could be used to create a direct path to the closest

pollinators for bees' habitats to minimize the distance of the flight path.

Entangled within the same ecosystem, bees and humans are codependent. As a population, analyzing how we can personally invest in the health and continuation of bees is essential. This investment can be further developed by better understanding how bees' function within their hives and the environment at large. By increasing our appreciation for the marvel of bees' habitats and means of survival, we will become more likely to make such an investment.

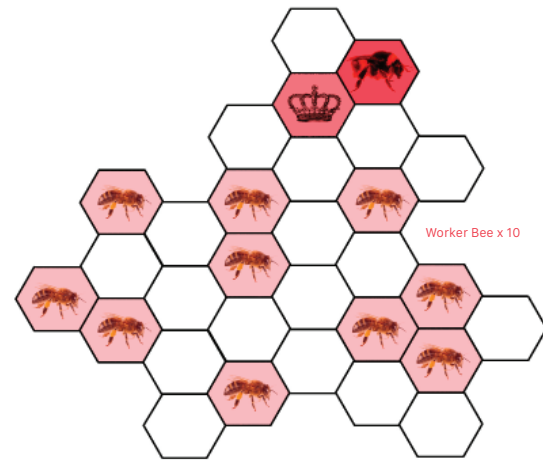


Diagram by Kaitlin Salisbury
Honeycomb Structure

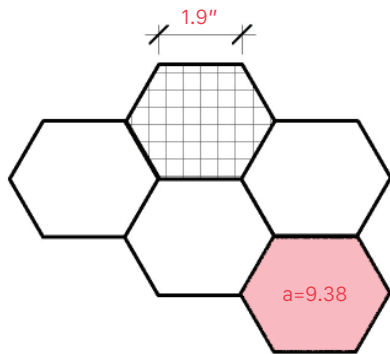
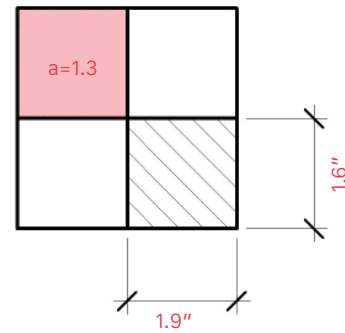
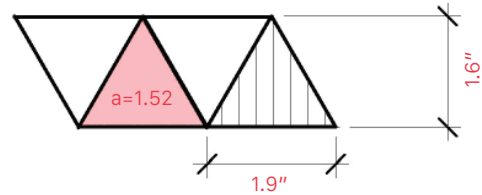


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Perimeter + Area



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Transient Urbanism

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Ricardo Silva

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Defining habitation cannot be pinned to one definition, but instead encompasses multidimensional experiences. Our memories and movements help shape our definition of what habitation means to us. In modern times we have categorized three ways of living: rural, suburban, and urban. While there are multiple subcategories between them, these are the most popular. This project aims to combine horizontal suburban elements with the vertical movement of urban environments in hopes of tackling current and future housing issues. In theory, this would yield a utopian city, in hopes of extracting principles that could be used in real-world situations.

To better understand the relevance of this project, we must define current housing issues. In Oklahoma, urban sprawl has become a threat to the city. Robert “Bud” Scott defines this issue as the “donut effect.” This means the

city continues to build where there is no infrastructure, and old urban areas get less attention. This creates a domino effect that decreases property tax in the inner cities.¹ This also adds to environmental issues, as new construction contributes to air pollution, material waste, and climate change.² So why has urban sprawl become such a huge issue in Oklahoma? The three reasons include homeownership, transit, and the idea of the American dream. In 1944 the GI bill passed, allowing military veterans to buy into this dream by offering them low-interest home loans, stipends to attend college, and loans to start a business. This rapid growth of homeownership pushed people out of cities and created what we know now as suburbia. While cars had been around for quite a while, they boomed during this time as well.³ This created the prominent horizontal movement

we now have in suburban environments. Illustrated in the horizontal movement diagram is the concept of homeownership in suburban areas, surrounded by green space with the movement of people only being horizontal. These characteristics feed into urban sprawl, but how can we combat it? The vertical movement diagram presents the vertical movement of an urban environment with only one horizontal line as public transit. While this may be successful in major cities like NYC, it would fail in Oklahoma City which is not dense enough to have successful urban transit. In the mixed movement diagram, we have a utopian Oklahoma City in which an urban environment grabs nostalgic elements from the suburbs that people are drawn to. This diagram leaves the horizontal movement open to interpretation. Could micro transient homes be the missing puzzle in this movement?

Micro-pod homes have become a utopian new way of living. While still a very theoretical approach, projects have been constructed from it. In 1972, the Nakagin Capsule Towers was constructed around the idea of having "adaptable, dynamic, ever-changing architecture, where modules can be plugged into the central core, replaced or exchanged."⁴ The project's focal target was to provide traveling businessmen a home in Tokyo. Today, the tower may face demolition with speculation of its noncompliance with local seismic standards. This was not the only reason the towers failed, however. The unusual floor plan made it extremely difficult to repair plumbing and service lines. The pods' windows were also inoperable, making natural ventilation impossible to achieve.⁵ While this project may be seen as a failure, a lot can be learned from it.

In regards to urban sprawl, micro pods might not be the best solution for this issue. As designers we have the ability to shape previous attempts into new forms. An attempt to reshape this mold would be reusing infrastructure, such as parking garages to house these transient homes. Archigram's Free Time Node Trailer Cage is an abstract example of this concept.⁶ We can leverage existing infrastructure such as parking garages to leverage



Top - Image courtesy of Dezeen
Nakagin Capsule Tower, Tokyo, Japan

Bottom - Image courtesy of Artimage.org.uk
Archigram's Free Time Node Trailer Cage

Archigram's schematic idea of an urban yet transient housing model. This would allow people to own micro homes while stripping the buildings that house them to a basic structure. This would eliminate the maintenance issues that Nakagin Capsule Towers had by allowing most maintenance to go directly to the owner of the transient home rather than the structure itself. This would also be an environmentally conscious way of rebuilding, as it would rely on built infrastructure rather than new construction. Parking garages are also currently going through a reform. New studies have shown that most cities have more parking than they actually need.⁷ This has to do with cities' rules, which are currently being changed in favor of less parking. This change would leave parking garages abandoned and open to be readapted.

These readapted parking garages would allow designers creative freedom to reshape a cold, lifeless, stagnant space into a bright, lively, moveable environment. The possibilities are endless, from adding new voids to play with natural light to greening up the space by filling it with vegetation. One could also play with color and patterns to bring new elements to the once-monotonous parking garage. While aesthetic values bring joy into a space, the people are what give it life. These spaces could be multipurpose as they have no restrictions. Imagine waking up to do rooftop yoga next to a coffee truck. After doing your morning routine you could go check on the urban farm. Maybe pick something up for dinner later. The point is this space is flexible and open to residents' own creativity.

Alejandro Aravena wrote, "Architecture is about finding imaginative, creative solutions to improving people's quality of life. Our job is to gather knowledge from an often friction-filled set of constraints and restrictions and extract lessons from that."⁸ This project is more about the principles that could be applied rather than the overall concept. The hope is to inspire people to look at current issues and how pre-existing infrastructure could be used to fix them.

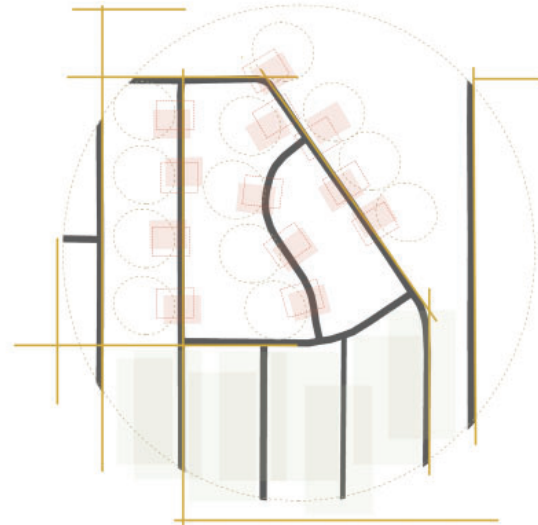


Diagram by Ricardo Silva
Suburban - Horizontal Movement

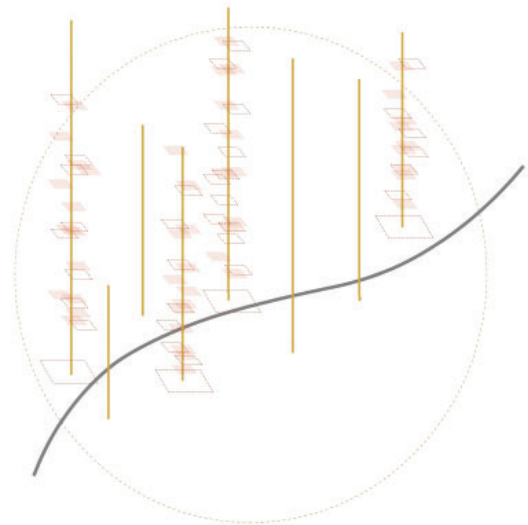


Diagram by Ricardo Silva
Urban - Vertical Movement

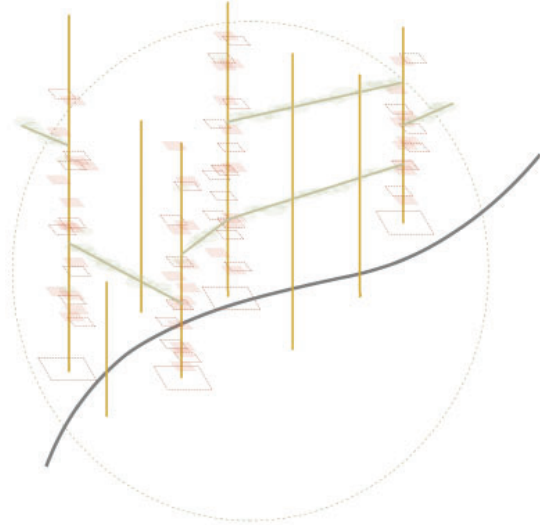
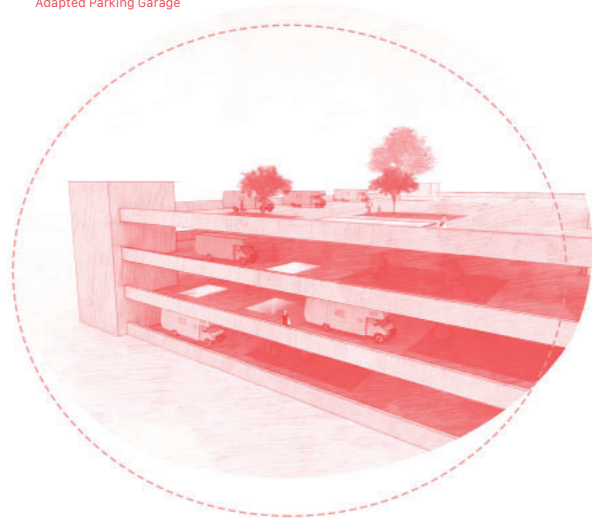


Diagram by Ricardo Silva
Transient Urban - Mixed Movement

Drawing by Ricardo Silva
Adapted Parking Garage



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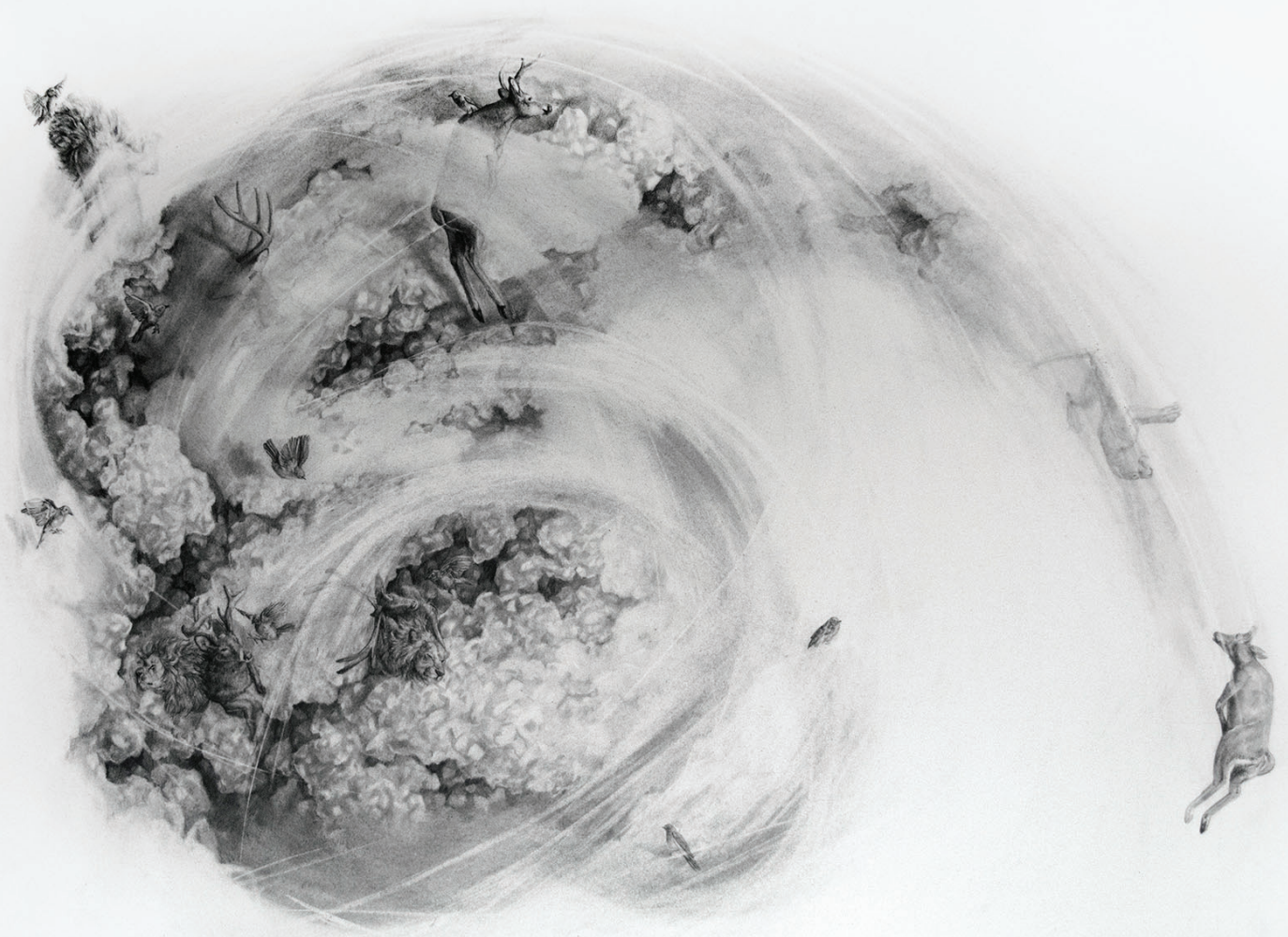
Environmenting Tension

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Haley Cytacki

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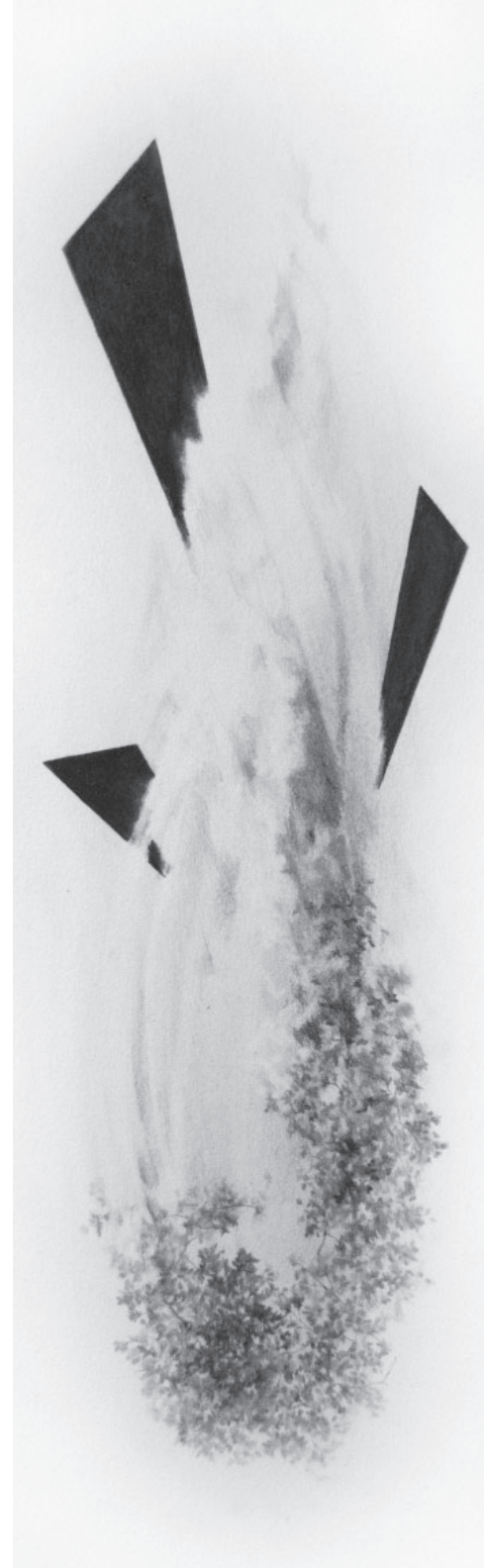
These drawings consider how we navigate the web of environments, histories, cultures, and experiences forming our individual perceptions of existence: specifically, how these spheres of identity overlap or interact unpredictably.





In some works, animals appear as a parallel for our own complex and intersecting human relationships, where subtle narratives describe ambiguous and sometimes violent interactions between these creatures.

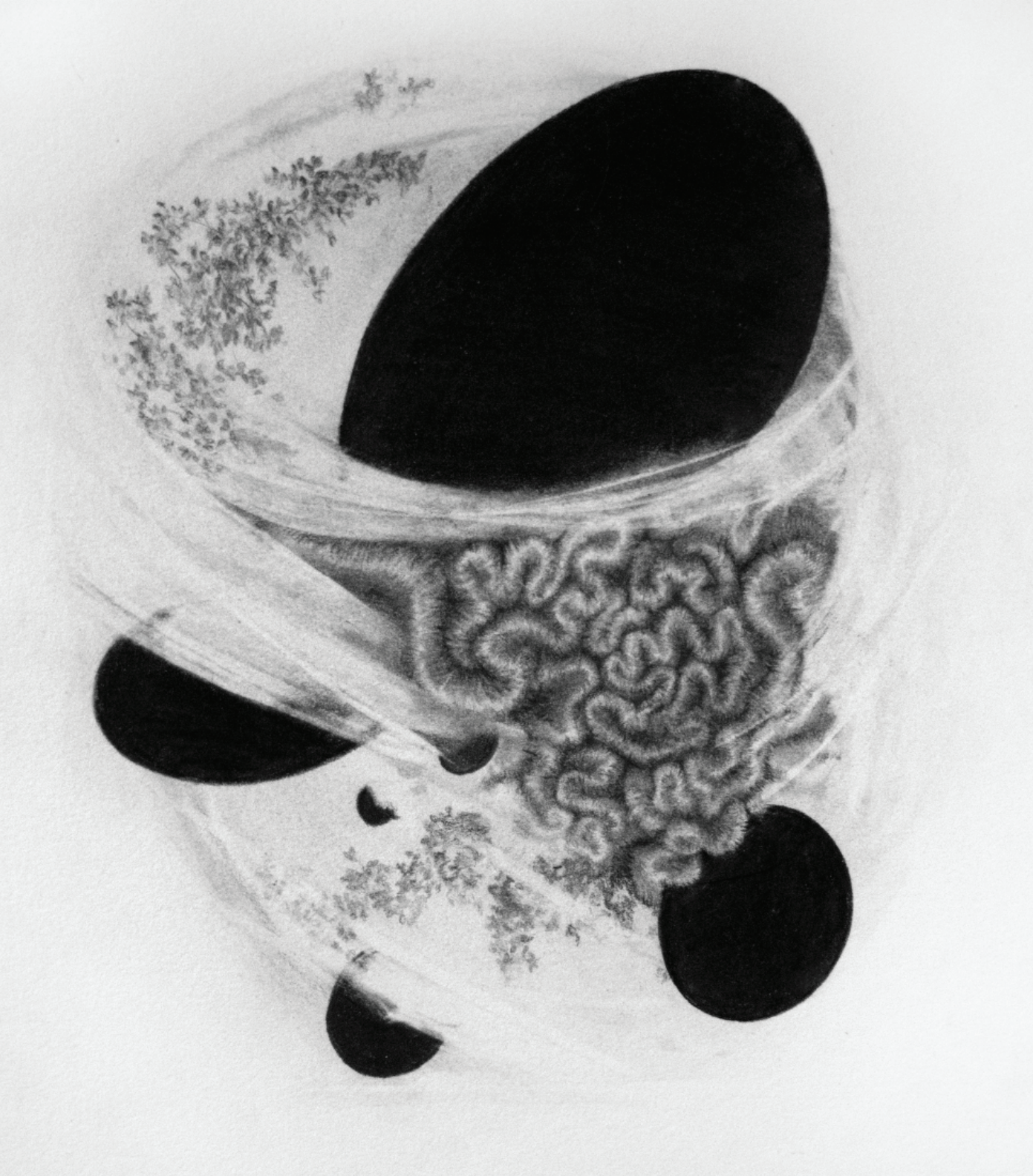
Oak and Clouds



Caught in fluctuating, confusing landscapes, their species and station in the natural world become irrelevant; their relationships are redefined, and each is equally impotent against the uncertainty of these shifting spaces.



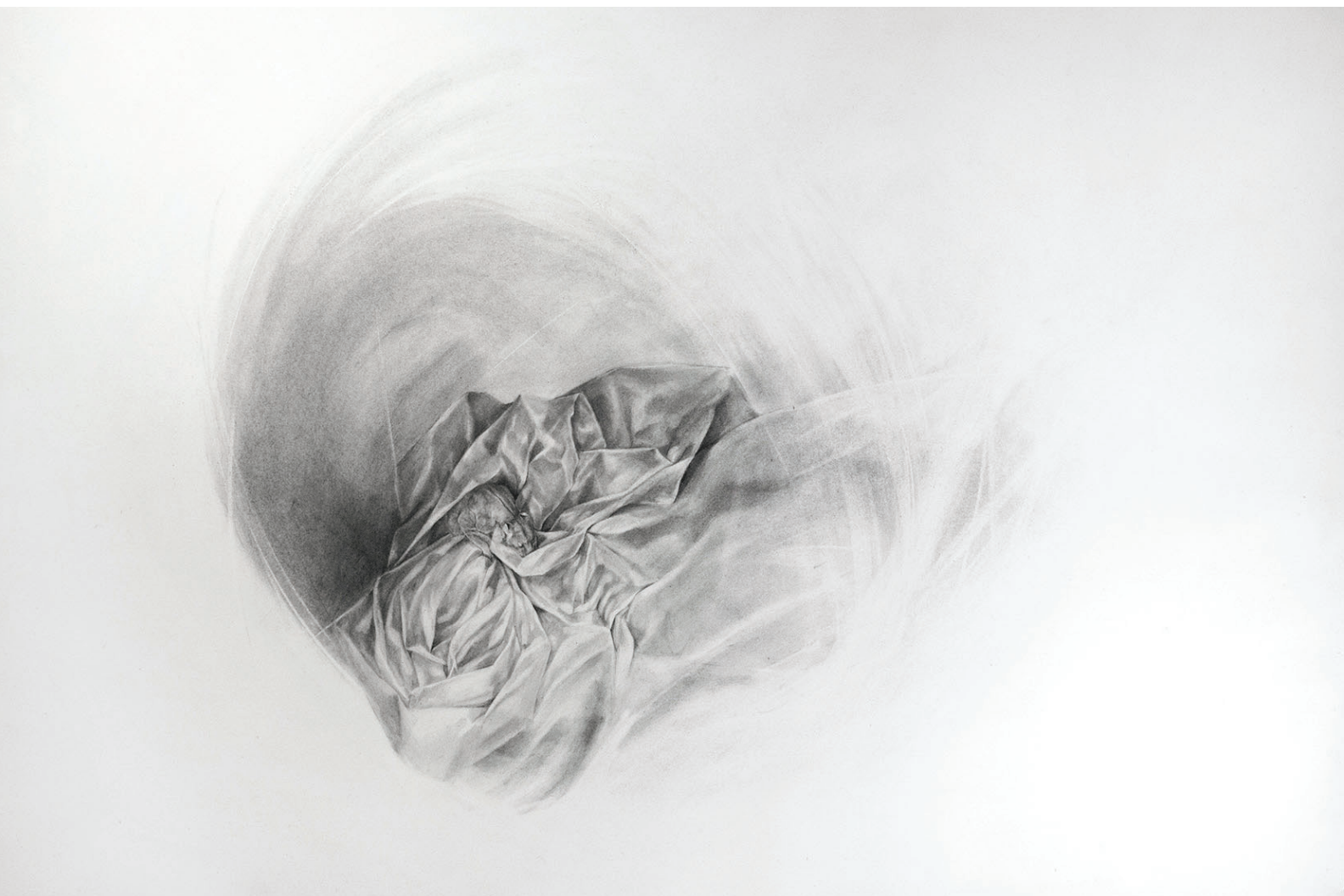
Where Did They



Celosia

Throughout each piece, areas of realism collapse into sweeping marks of graphite and erasure, creating tumultuous layers of creation and destruction.

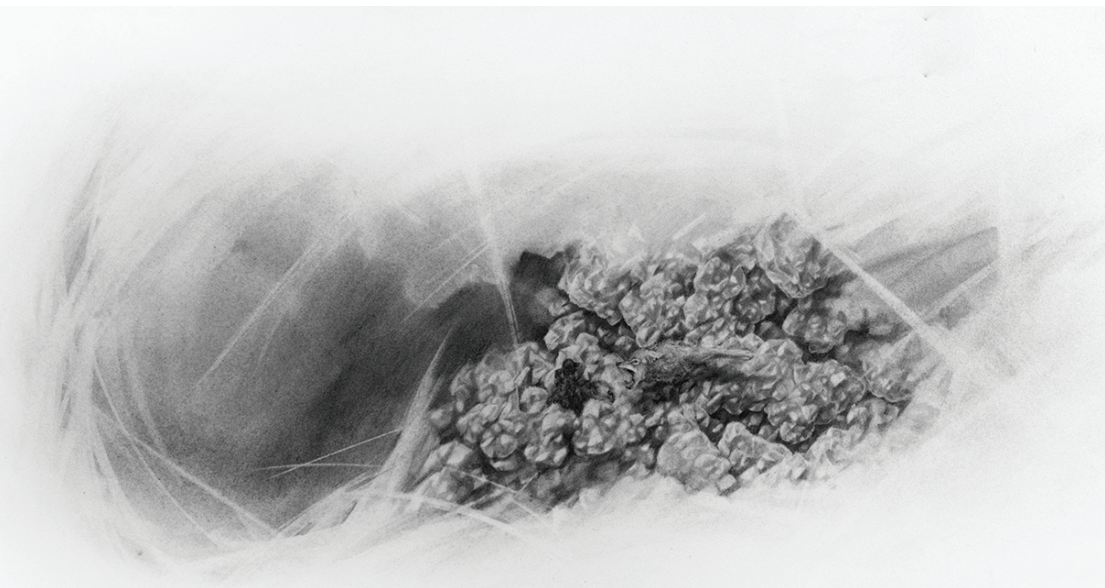
Inside



Spatial relationships of physical objects are unclear at times, where perceptions of positive or negative space oscillate and the orientation of the ground is uncertain.

These fluid compositions weave together a sense of disruption and beauty, suggesting tension and overwhelming complexity.

Here We Are







We've Just

Feronia Towers

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Carlos Valverde and Michelle Vizcaino

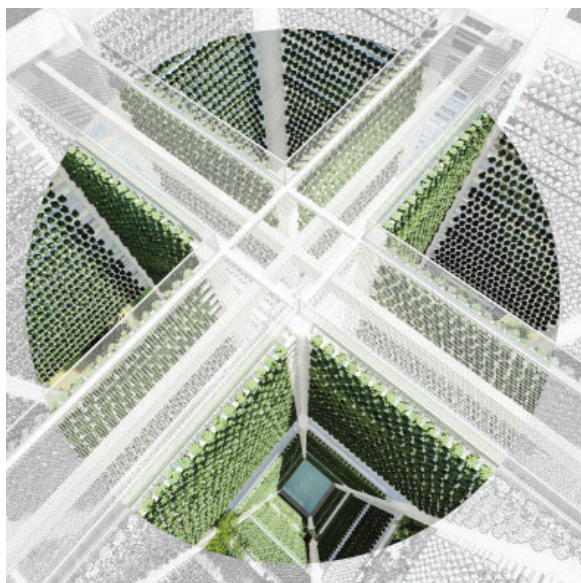
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The idea of vertical farming in high-rise housing came from a personal search based on trends that we recognize through our profession and research. We have developed an interest in contributing to reducing agriculture pressure over the ecological reserves. We believe it is possible to bring a part of agriculture production to the cities and change the way people habit those cities.

Quito, the capital of Ecuador, is our natal city. Its population has increased due to the immigration of people from rural towns to cities in the last decades (Cazzuffi and Fernández 2018). This phenomenon is causing several demographic problems, like high demand for food, in the city. Agricultural producers have to improve their

productivity or increase the agricultural production area to satisfy the increasing food demand. According to Perz, Aramburú, and Bremner (2005) and MAE (2010), forest becomes crops or pastures because of farming pressure. Farming is the main cause of deforestation in Ecuador.

Urban agriculture is one of the alternatives for providing food to cities without the increase of agricultural lands (Orsini et al. 2013). This practice uses empty parcels in the city to farm and is usually a collective management activity. It could represent a social interaction space among neighbors; furthermore, green areas could help reduce the temperature in summer and have positive effects on citizens' emotional health (Koont 2008).



We want to go a step beyond urban agriculture, which is limited by the availability of empty parcels in the city. We suggest that agriculture can be moved to buildings through vertical farming as a new conception of the relationship between urban agriculture and residential use. New technologies of construction, architecture, hydroponics, and precision agriculture are being developed.

We propose to create a space where housing and agriculture coexist in the same building, through designing communal areas for agricultural production in residential buildings. These areas would be managed by neighbors, their production would fulfill residents' food needs, and the remnants could be commercialized as incomes for facilities maintenance.

These technologies will allow people to produce food in cities in a large scale and supply a great part of the demand, reduce transportation costs, increasing food security, and contributing to preserving the natural environment in the near future (Kalantari et al. 2017). Additionally, they can more efficiently ensure a steady supply of healthy food that could assist low-income families, even in difficult times like wars or natural disasters, where regular food supply could be interrupted (Zhao et al. 2015; Liu et al. 2018). Establishing a link between people and their food production generate more

responsible consumption, greater human comfort (green spaces have positive social and physical impacts on its residents), improvement of indoor environmental quality, greenhouse gas emission reduction, among other effects (Anguluri and Narayanan 2017).

Today we are mainly dedicated to the design of conventional collective housing, but we propose this group of towers because it is how we like to imagine the future of our cities. We hope that the evolution of architectural and urban design will allow us to overcome the problems that arise in our era.



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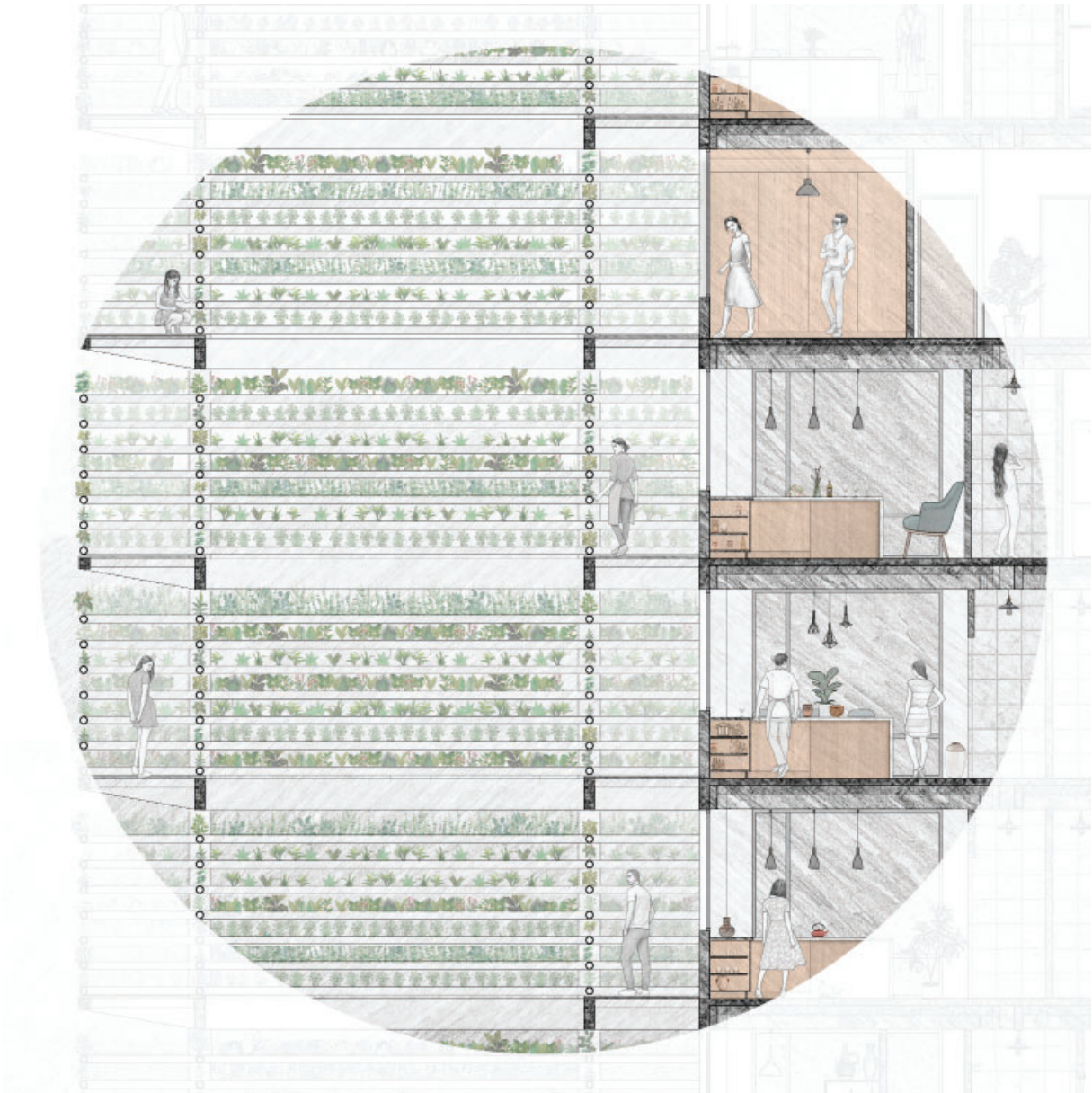
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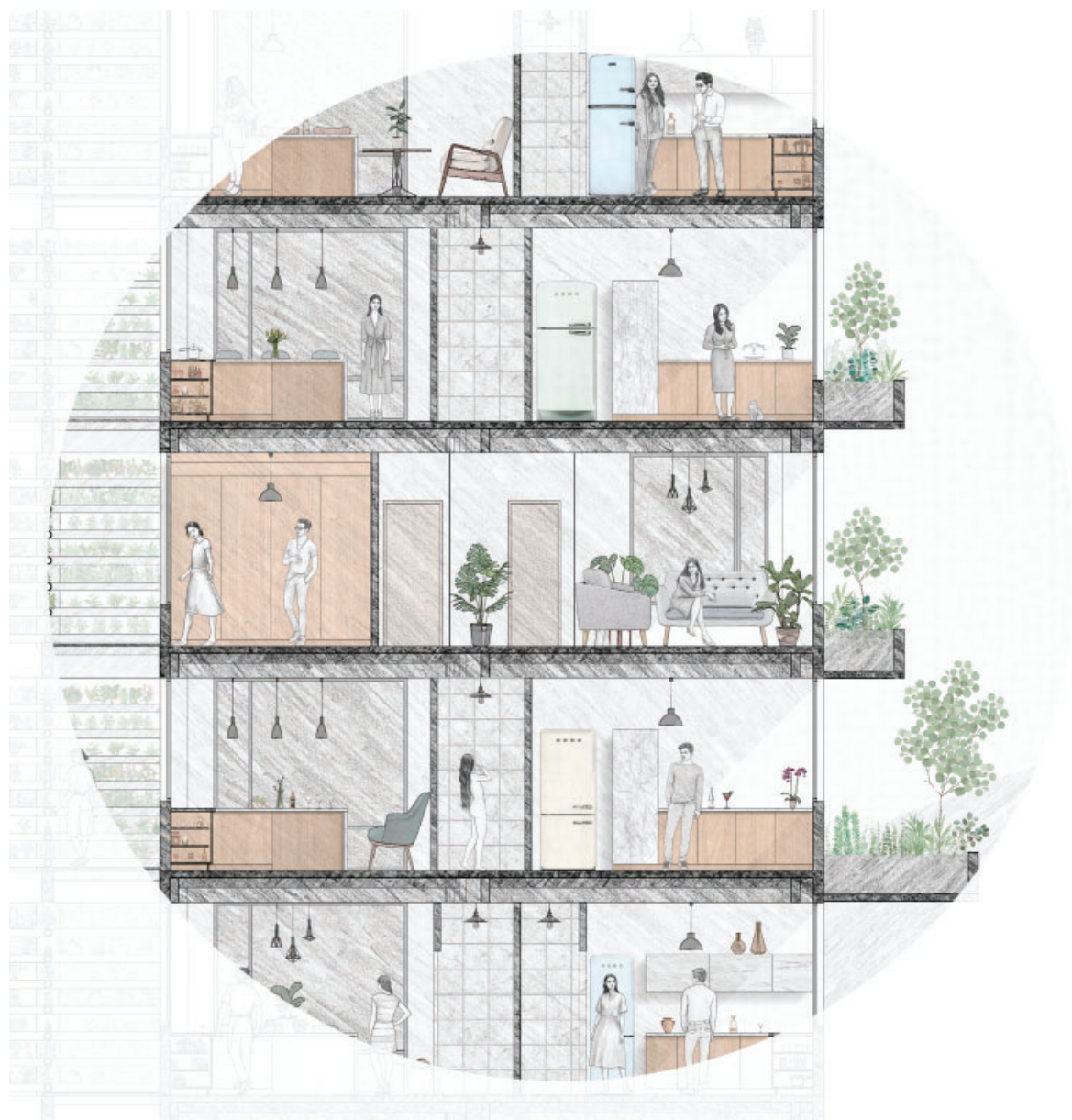
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Indigenous Growth

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Thinking about the process that we have undertaken as a society to move from the first cave paintings to civilization as we know it now, we will see that humankind has positioned themselves as a superior entity to other creatures and nature itself. Thus, the central interest in the text goes beyond demonstrating traditional forms of habitation typical of small and isolated Indigenous populations in the Amazon rainforest of Ecuador, to consider more broadly how unique cultures fully correspond to their environment and how recent developments in the area have alienated communities, producing a strong clash with their customs and way of life.¹

The Beginning

Back in 2013, I took a design studio class with Professor Santiago Del Hierro. This studio was part of Harvard University's South America Project, a trans-disciplinary initiative to connect researchers and designers working at a regional scale in South America's hinterlands. The studio was radical in the sense that we were looking for innovative ways to combat the drastic urbanization of the Amazon through the creation of sustainable urban projects.

Before this time, I mainly experienced life within the city and had not been in the heart of the Amazon rainforest in northern Ecuador, known as the Yasuní National Park, which is considered one of the greatest biodiversity hotspots in the world. Therefore, when I visited the area for the very first time, I was faced with the reality of Indigenous ways of living in the forest, their struggles, and the constant fights to protect their territory from external threats (generally originated by government policies). It was then that I experienced a drastic change in my belief system and my perspective on what it means to be an architect and began to question to what extent my work affects the lives of indigenous peoples and nature itself.

Case Studies: Anangu + Milenio

During our fieldwork in the Amazon Rainforest, Kitchwa Anangu Indigenous community (an autonomous and self-built settlement) and Ciudad Milenio ("millennium city," developed by the government), which are in the same area around the Napo River, called my attention due to their contrasting urban planning strategies. In Anangu, for example, houses made of wood, with small spaces between

boards, allow air to flow and keep the interior cool.¹ The house is built on stilts, allowing it to remain dry even during floods. Anangu's bottom-up community planning has a particular order that breaks with monotony and allows a much richer and more communal life. In comparison, Ciudad Milenio (CM) has houses made of concrete blocks and steel, sealed to prevent air circulation and thus losing out on passive cooling strategies. The houses' materiality causes the humidity to take over, reducing the quality of the space, creating a breeding ground for diseases.¹ CM's top-down urbanism responds to orthogonality, to the street, which creates limits between what is inside with what is outside, reducing the community spirit typical of Indigenous communities, forgetting that the jungle is not a place for cars but canoes, as a fluvial city. The new development completely obliterates the local people's meaning of "dwelling", as their word for house translates as "forest." As a result, most of the community barely used their new houses, as they were unsuitable for the tropical weather of the Amazon and were situated far from their crops. Therefore, they have returned to the forest where they belong in company of their animals and plants. We can argue that CM has become a multi-million-dollar ghost town. Now it is worth asking, is westernized urbanism appropriate for the Amazonia? Where is the validity of urbanism when the conditions of well-being are reduced in favor of the idea of progress promoted by the state?

The Call

It was impossible for me to ignore how these foreign elements imposed changes in the way of thinking, living, and building the community in CM. Indeed, I realized that some communities have been completely alienated by urban planning models developed by the state in the hands of designers like I used to be, someone with a rational and capitalist mind who was far away from a biophilic or at least a human-centered design approach. As Duran mentioned:

Living ancestral cultures contain some of the keys to the future "sustainable development" of Amazonia, then focusing on how Amazonian communities who have remained relatively isolated from the West (rubber boom notwithstanding), are adapting to a new wave of hyper globalization, is critical. Not just growing archaeological evidence, but also the correlation that has been established between indigenous territories and forest well-being in innumerable studies, have spurred renewed interest in indigenous knowledge. It may sound contradictory, but successful indigenous communities like the Kichwa Añangu of Ecuadorian Amazonia have incorporated themselves or have articulated their world into global capitalist circuits of production and creation through resistance, or through a vindication of their cultural values. This is the key to their success. Those who have passively accepted, for example, the "social contract" of oil corporations in the Ecuadorian Amazon have traded their ancestral cultures for alcohol, weapons and excesses such as useless airstrips.¹

Commune-Based Land System

Indigenous communities, like Anangu, have a commune-based lands system that allows them to collectively manage their natural resources. This means that there is no notion of private space, but a social space shared with other members of the group. This type of system goes beyond the land to economic and tribal organizational principles.

This commune system, in spite of its evident environmental and social benefits, is under threat by policies that leave it out of the provision network of "urban" public services.² This is how new developments sponsored by the State in Indigenous territories, like CM, have created a privatized and rigid city following the colonial guidelines of planning stated in the Law of the Indies.³ This type of

Anangu Community
Self-Built City

- organic distribution
- communal space
- alleys contraction/expansion create gathering areas for pedestrians
- public space is part of the living area
- cultivates integrated to the landscape
- house intertwined
- green areas act like a buffer zone between the river and the settlement
- no hierarchy
- diversity of flows / break monotony

Legend

- | | |
|---|---|
|  Residential units |  Semi-communal zones |
|  Cultivation Area |  Communal areas |
|  Gathering Area |  Flows |
|  Bamboo Crops | |

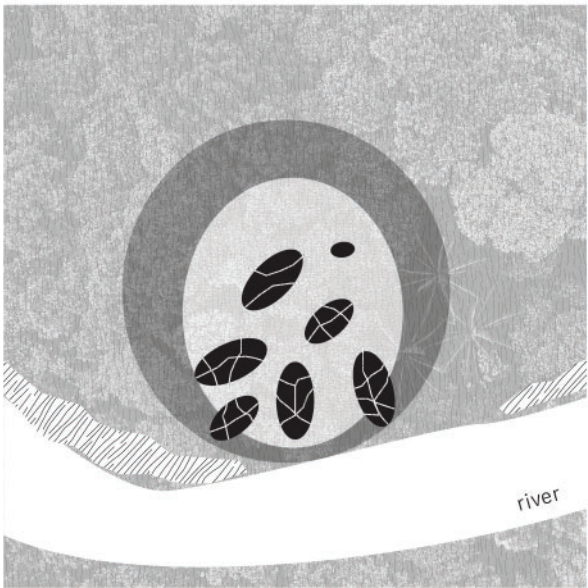


Image Courtesy of Napo Wild Life Center Webpage
Anangu Community Aerial View

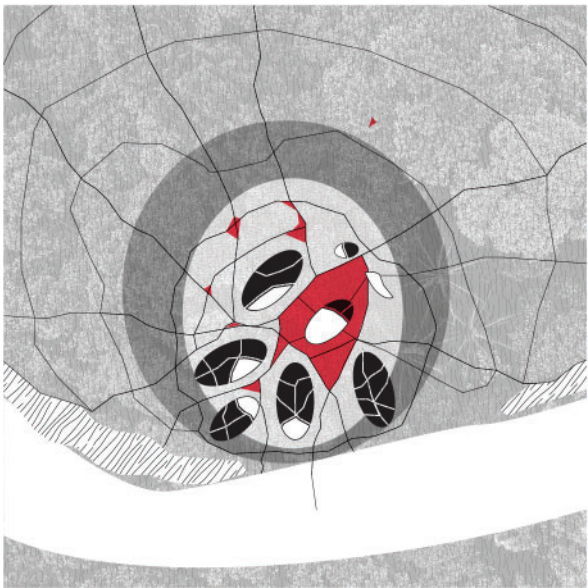
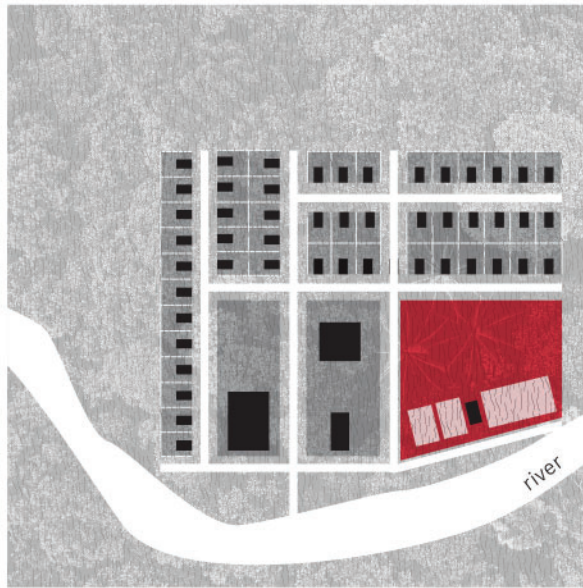


Diagram by Felipe Flores
Anangu Site Diagram



Milenio City Government Intervention

- grid system
- private space
- standard roads for cars
- church/school/park/health center
represent the idea of public
- inside property boundaries
- house isolated
- green areas are decorative
- institutionalized / plaza centered with
governmental infrastructure
- monotonous, rigid

Legend

- | | |
|---------------------|------------------------|
| ■ Residential units | □ Government buildings |
| ■ Private Area | ■ Gathering areas |
| □ Roads | — Flows |

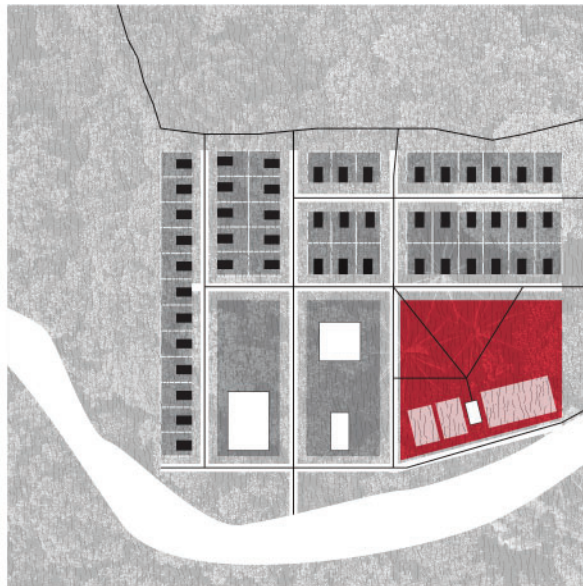


Diagram by Felipe Flores
Ciudad Milenio Site Diagram



Image Courtesy of Ecuadorian Government Webpage
Ciudad Milenio Aerial View

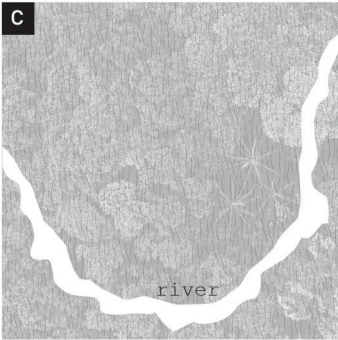
Indigenous Land-Use Systems (3 Types of Settlements)



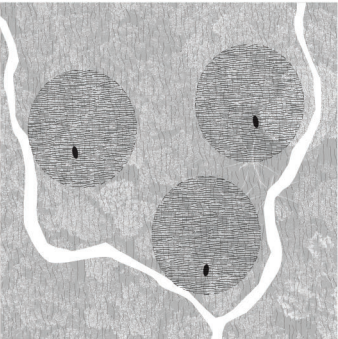
Land-use system in dispersed fluvial



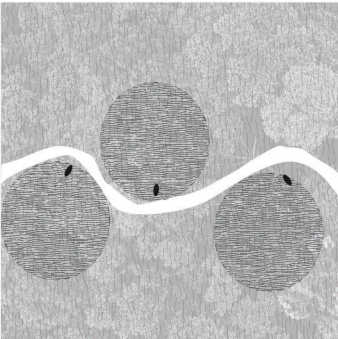
Land-use system in riverine settlement



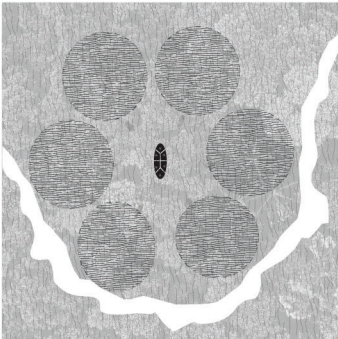
Temporary clustered arrangement during wars



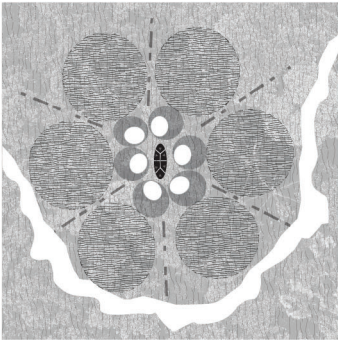
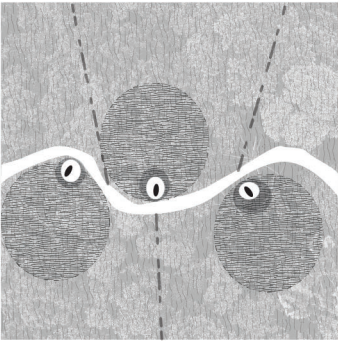
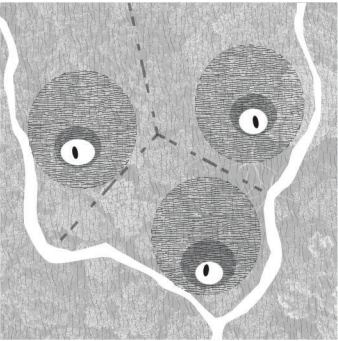
Residential area
Hunting territory
Cultivation area



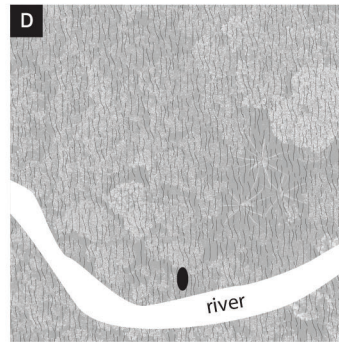
Wild Forest
Gathering area
Fuzzy boundary



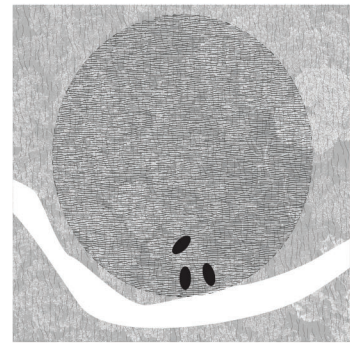
Large house



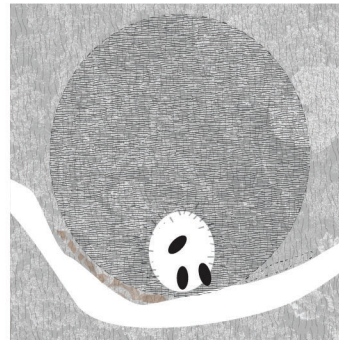
Year 1 (first settlement)



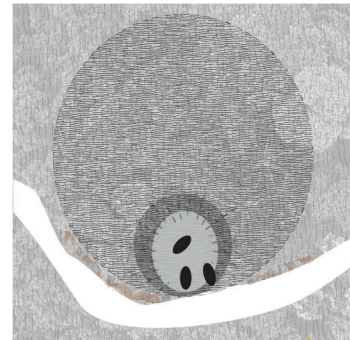
Year 3 (community grows)



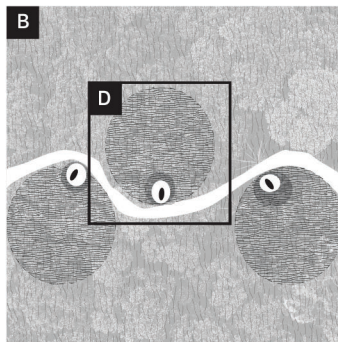
Year 4 (agroforestry)



Year 6 (crop rotation)



Zoom Area



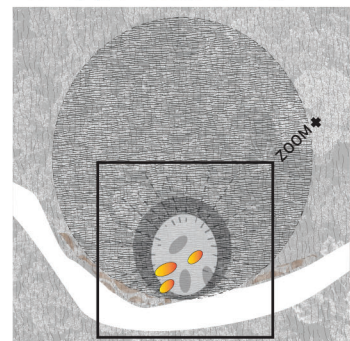
- Residential units
- Burned old units for compost
- New residential units
- Hunting area
- Gathering area
- Bamboo crops
- Rotative cultives
- Agroforestry expansion

Diagrams by Felipe Flores
Zoom area and legend

Year 10 (new bamboo houses)



Year 15 (old houses burned)



planning does not represent by any means an Indigenous epistemology or axiology. Thus, unless we find new ways to reinterpret Indigenous' knowledge in town and country planning strategies, governments will continue to promote the fragmentation and peri-urbanization of Amazonia.

Low-Tech Design

Vernacular architecture, as popularized in Bernard Rudofsky's *Architecture Without Architects* exhibition at MoMA in 1967, is the means to explore the intersection of design and Indigenism.⁴

While the European Enlightenment constructed a mythology of technology—with influence of humanism, colonialism, and racism—the mythology ignored local wisdom and indigenous innovation, deeming it primitive. Guiding this was a perception of technology that feasted on the felling of forests and extraction of resources. The mythology that powered the Age of Industrialization distanced itself from natural systems, favoring fuel by fire.⁴

However, indigenous communities in the Amazon rainforest are striving against extractivist politics by introducing hundreds of different species of plants in an agroforestry system within the rainforest. It doesn't destroy the rainforest but is incredibly productive for food.

On one hand, you have the Amazon on fire because of clearcutting for cattle ranching. On the other hand, in that same rainforest you have a community who lives in the rainforest, obviously at the same scale, but doing a different type of farming that integrates into the canopy of the rainforest and still produces food⁴.

There are these two completely different types of systems, coming up against one another, but no one's learning from one another. There's no adoption of a symbiotic agroforestry productive food system or allowance of the co-benefits of keeping the Amazon rainforest but also producing food, even though you see those types of systems across the globe.⁴

Anangu Community (current condition)



Ciudad Milenio (disrepair)



Photos: Felipe Flores
Site visit to Anangu and Ciudad Milenio

Conclusions

Decisions about how to inhabit a place are taking a very wrong direction in the Amazon. Governments cannot continue to provide the same urban solution for all Indigenous groups that inhabit the region. To what extent are western ideals of progress beneficial when cultures, traditions, and, worse still, the well-being of a population and ecosystem are destroyed by means of it?

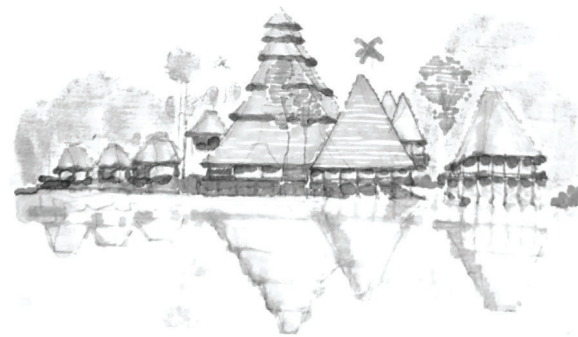
It is time to honor the ancient Indigenous wisdom regarding land use and the construction of space in symbiosis with nature. Indigenous communities, for instance, have been resilient and have not twisted their arms in favor of the preservation of the Amazon. However, in this process many voices have been silenced by force and in favor of an extractivist agenda.

Therefore, this study shows that government decisions on strategic planning must be made from an Indigenous positionality. In order for this to happen, we should be developing micro-level planning theories for each Indigenous group, based on the context on their settlements and their world-view. Basically, we are calling

for an Indigenous perspectivism—where city, land, and nature are intertwined with the cosmos—as suggested by Eduardo Viveiro.³ This type of perspectivism not only articulates forces against top-down urban interventions but contextualizes notions of local and bottom-up order that could be conceived as a tool for future planning practices with Indigenous groups in the region.⁵

Endnotes

- 1 Ana María Durán Calisto, "In the Past, Present and Future Realms of Urban Amazonia," Latin American Studies Association, 2019.
- 2 Santiago Del Hierro, "Indigenous Spatial Planning in the Ecuadorian Amazon: Reflections on the Plan de Vida," *Territorio* 94 (2020): 113–19.
- 3 Fernando Luiz Lara, "Towards a Theory of Space for the Americas," *Modernidad y Vanguardia en América Latina, 1930–1970* (II Jornadas Internacionales de Historia del Arte y Arquitectura, Universidad de Cuenca, 2017), 29–42. <https://dialnet.unirioja.es/servlet/articulo?codigo=7718028>.
- 4 Julia Watson, Avery Robertson, and Felix De Rosen, "Designing by Radical Indigenism," *Landscape Architecture Frontiers* 8, no. 3 (2020): 148–55.
- 5 Teresa Palmieri, Liesbeth Huybrechts, and Oswald Devisch, "Co-producing, Curating and Reconfiguring Dwelling Patterns: A Design Anthropological Approach for Sustainable Dwelling Futures in Residential Suburbs," *Design Studies* 74, no. 4 (2021): 101011.



Drawing by Felipe Flores
Anangu Elevation Drawing

Affordable Housing Lab

61 / 62

OU Affordable Housing Lab + Francesco Cianfarani

Telesis Vol. IV 2021

Housing Design & Research Seminar / Affordable Housing Lab

The seminar ARCH 4970-015/5970-004 Housing Design & Research offers an introduction to current environmental, social, and financing challenges to build housing affordability in the United States, as well as a set of analytical and design resources to inspire innovative approaches to the problem.

Critical topics, research methods, and planning and design ideas related to affordable housing are investigated through talks, readings, and graphical assignments. Such variety of activities aims to connect emerging research questions (climate change, domestic migrations, inclusionary zoning, and new paths to ownership) to

innovative residential solutions, alternative to the single-family house developments in suburban contexts.

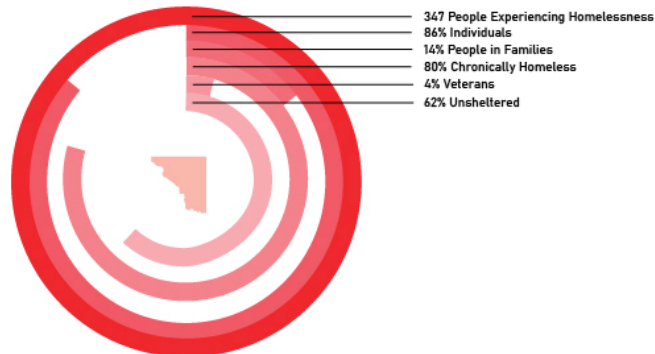
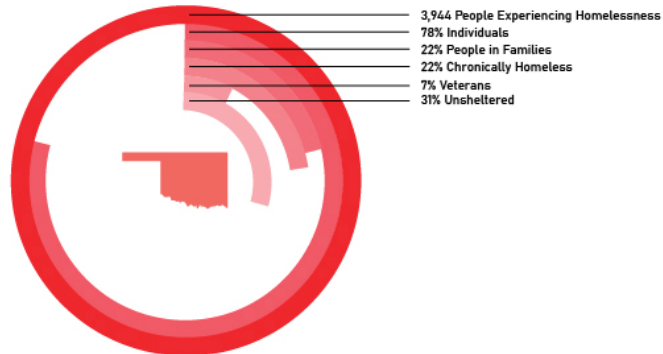
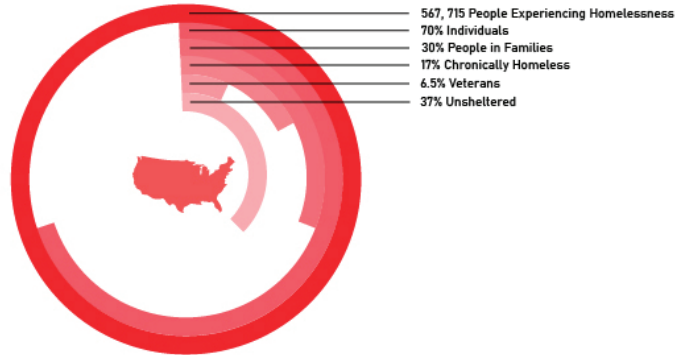
During the first portion of the course, a series of data collecting and mapping assignments on Oklahoma low-income housing communities are proposed. In the second portion, students develop precedent studies on successful housing solutions. Focus is directed toward infill middle housing strategies that densify existing neighborhoods, while improving diversity, resilience, and walkability.

Seminar activities are connected to the initiatives of the Affordable Housing Lab, a cross-disciplinary student team led by Francesco Cianfarani in 2021.

Homelessness Population Demographics

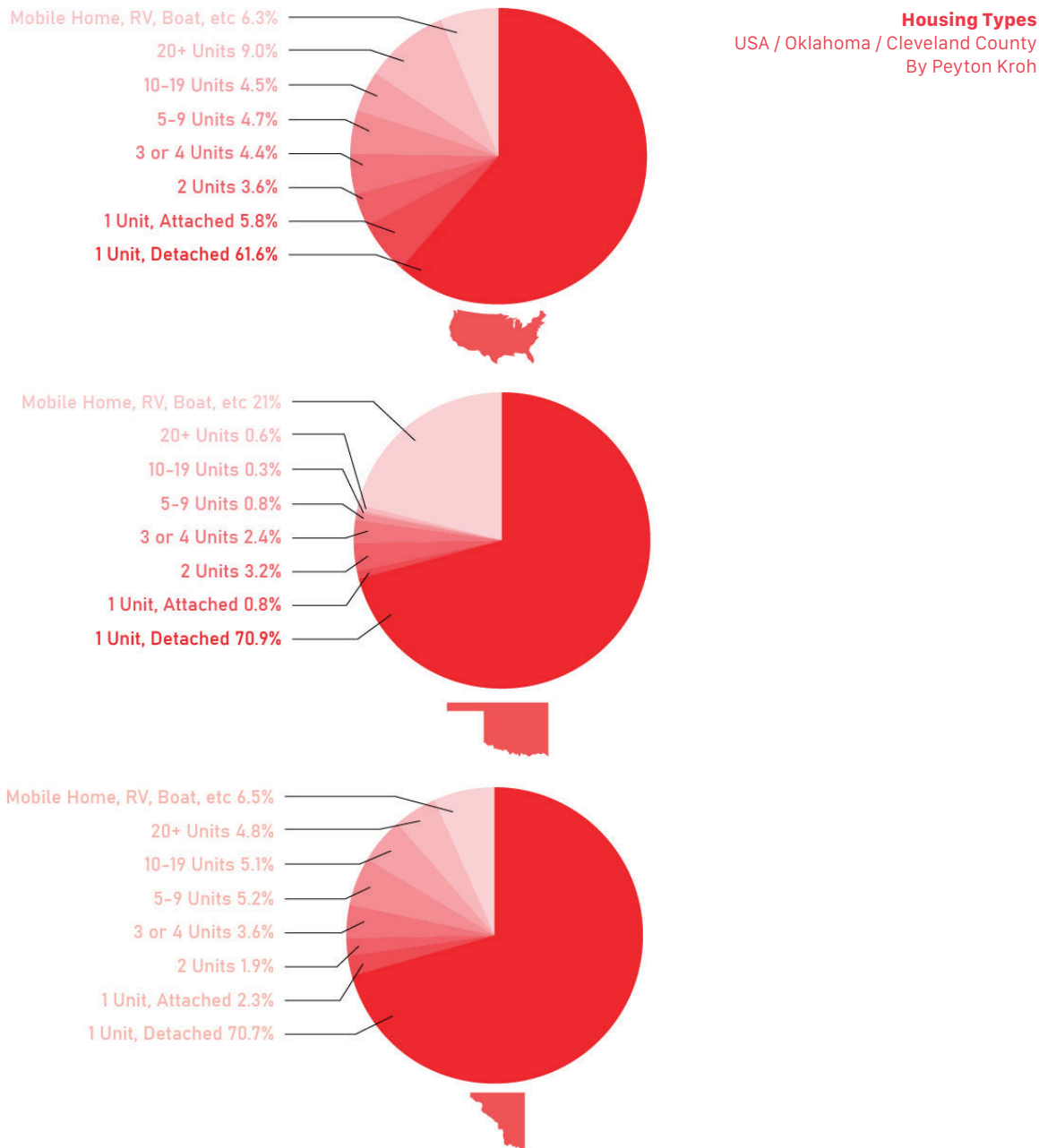
USA / Oklahoma / Cleveland County

By Peyton Kroh



"SOH: State and CoC Dashboards." National Alliance to End Homelessness, 13 May 2020, endhomelessness.org/homelessness-in-america/homelessness-statistics/state-of-homelessness-dashboards/?State=Oklahoma.

"State of Homelessness: 2020 Edition." National Alliance to End Homelessness, 20 May 2020, endhomelessness.org/homelessness-in-america/homelessness-statistics/state-of-homelessness-2020/.



*Selected Housing Characteristics." Data.census.gov, U.S. Census Bureau: American Community Survey, 2018, data.census.gov/-/cedsci/table?d=ACS+5-Year+Estimates+Data+Profiles.

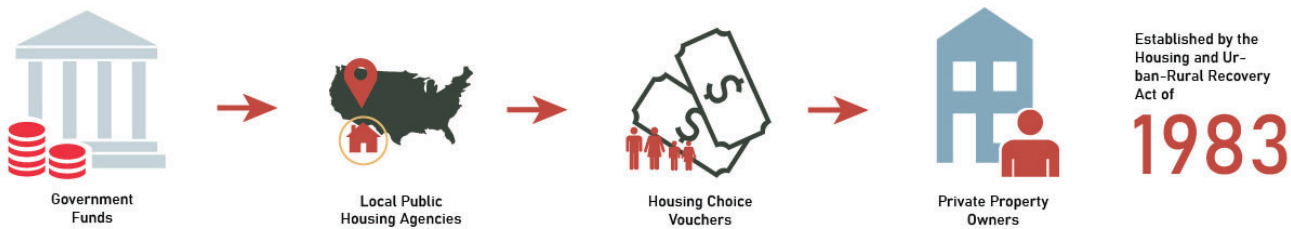
By Peyton Kroh



^aPicture of Subsidized Households: ¹HUD User Office of Policy Development and Research (OPDR), U.S. Department of Housing and Urban Development, www.huduser.com/portal/34333.cfm?ch=34333

Housing Vouchers

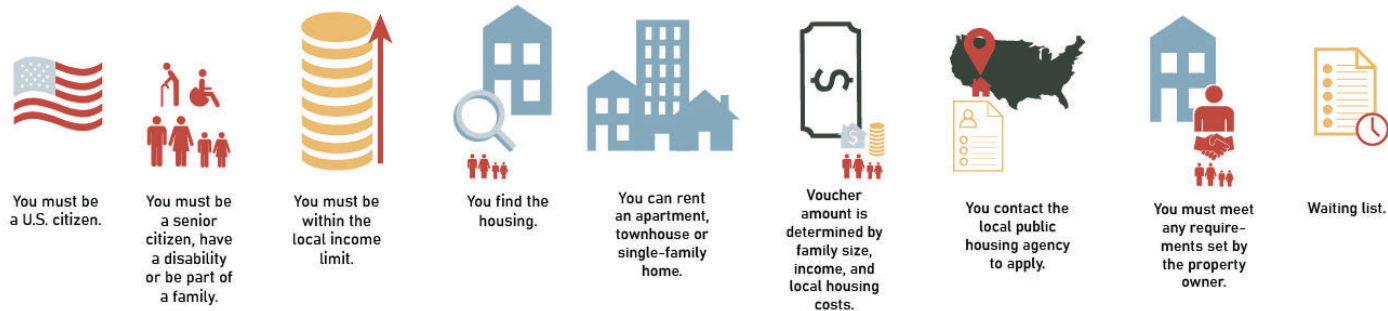
By Peyton Kroh



How They Work



Becoming a Housing Choice Voucher Landlord

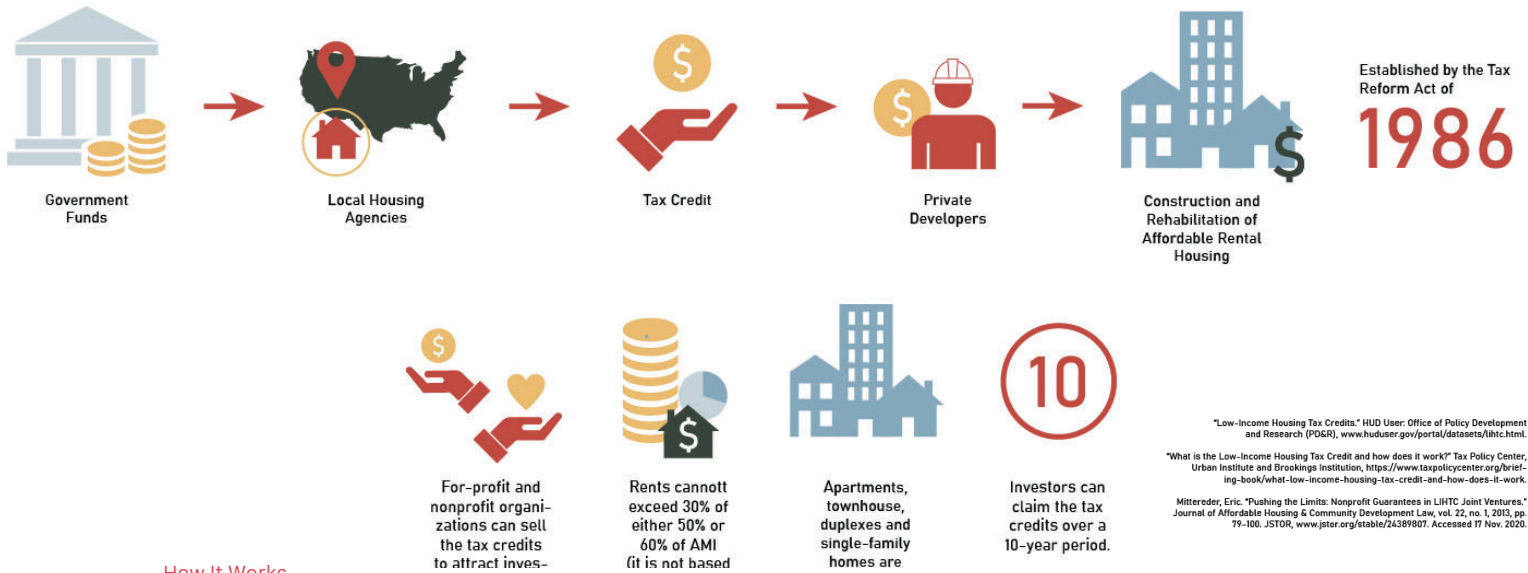


Finding Housing

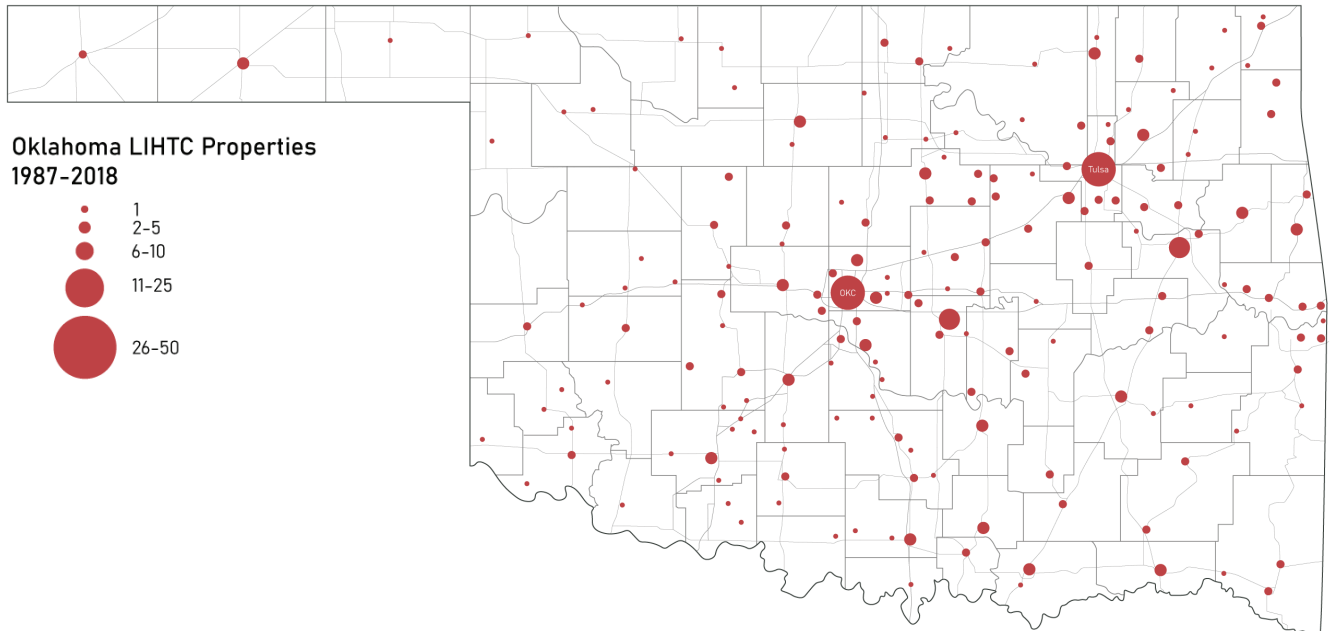
"Find Affordable Rental Housing." USAGov, www.usa.gov/finding-home.
"HUD's Historical Timeline." HUD User: Office of Policy Development and Research, https://www.huduser.gov/portal/hudtimeline_1980.html

Low-Income Housing Tax Credit (LIHTC)

By Peyton Kroh



How It Works



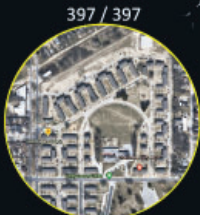
Map of Affordable Housing in OKC

By Liam Dee, Dakota Desai, and Tyler Koehl

Assignment A1:
Mapping Housing
Oklahoma City, OK

Tyler Koehl, Dakota Desai, Liam Dee

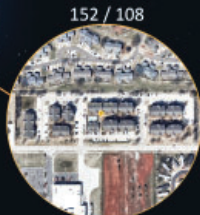
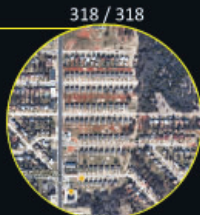
Total Units / Low Income



HUD Families
(Housing & Urban Development)
HUD Seniors
(Housing & Urban Development)
LIHTC
(Low Income Housing Tax Credit)
HTC
(Historical Tax Credit)

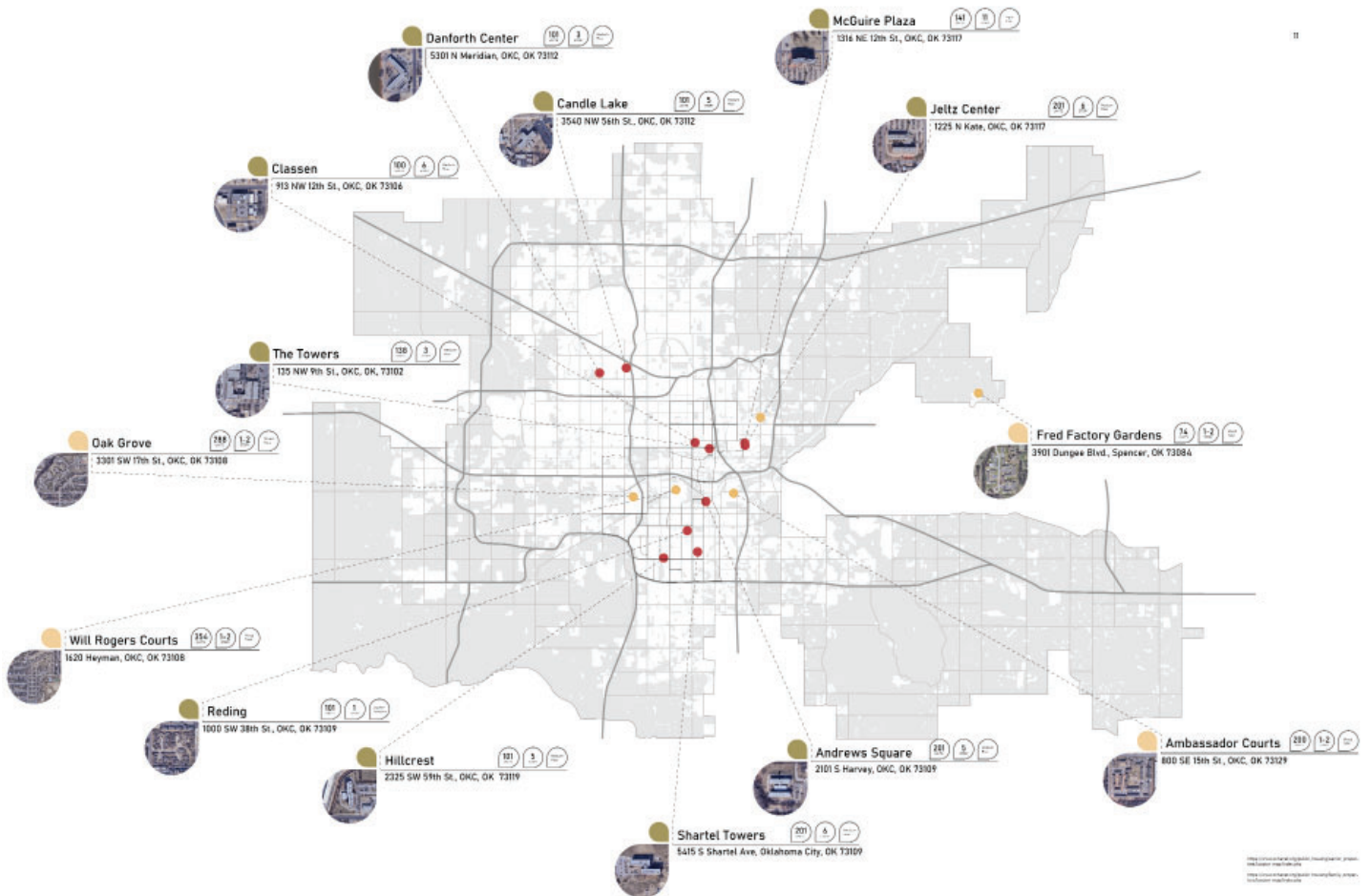


- Cost-Burdened
- Heavily Cost-Burdened
- Not Cost-Burdened



By Peyton Kroh

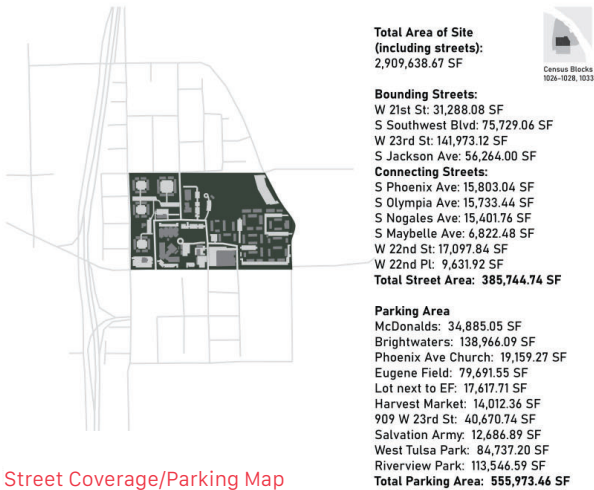
By Peyton Kroh



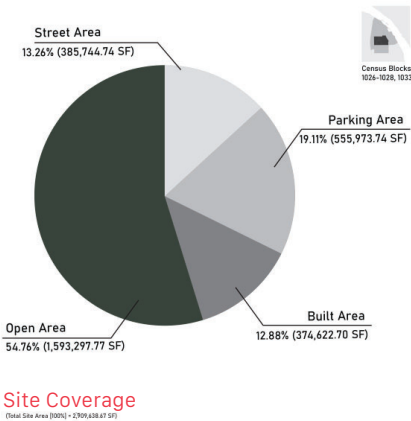
Eugene Field, Tulsa:

Neighborhood Analysis

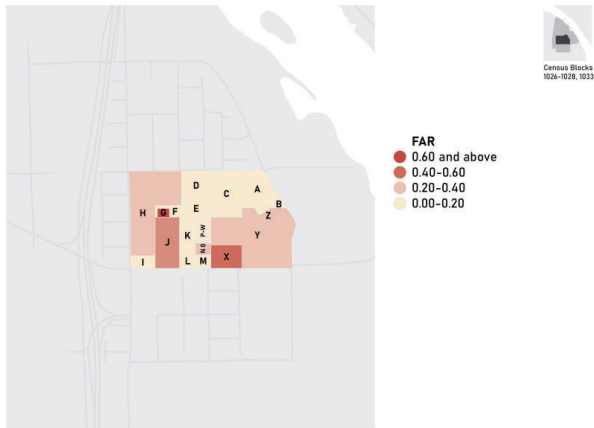
By Autumn Tiller



Street Coverage/Parking Map



Site Coverage



Floor Area Ratio (FAR) Map

(Source: Tulsa County Assessor Office, <https://www.assessor.tulsa-county.org/assessor-map-interactive.php>)

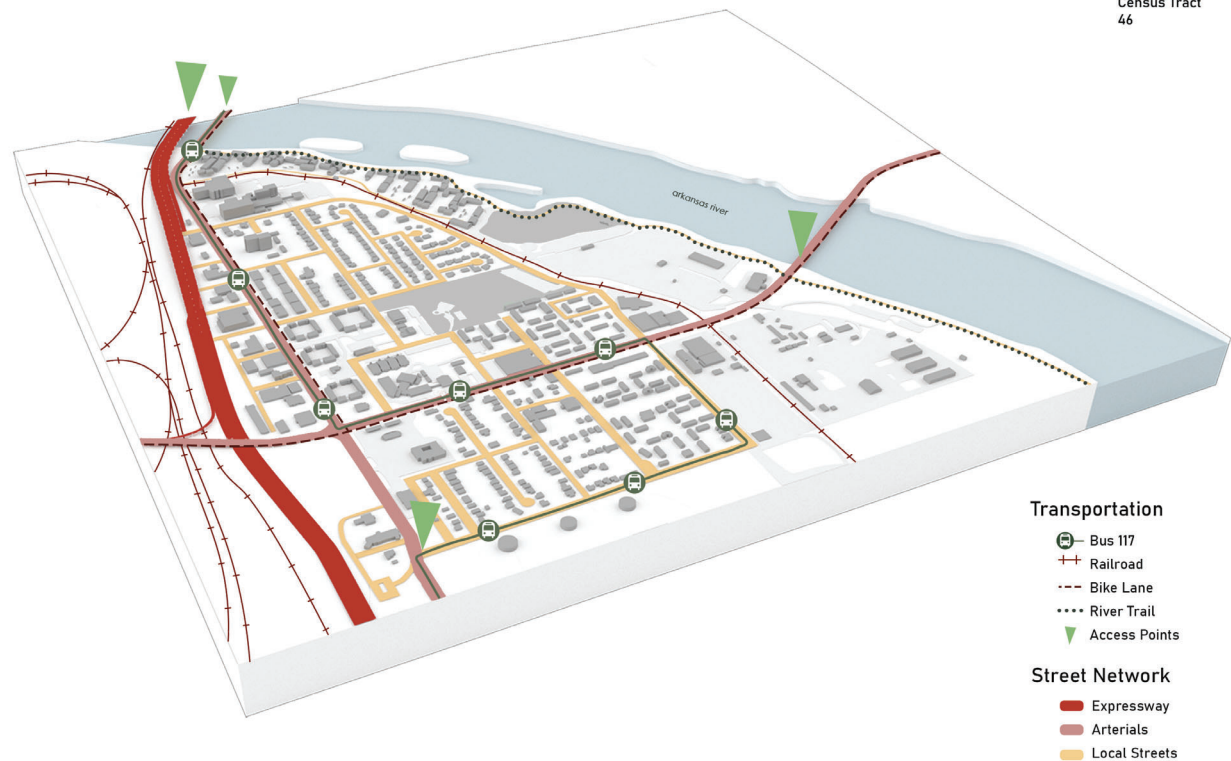


Building Typology Map

(Source: Tulsa County Assessor Office, <https://www.assessor.tulsa-county.org/assessor-map-interactive.php>)

Eugene Field, Tulsa: Transportation + Access Map

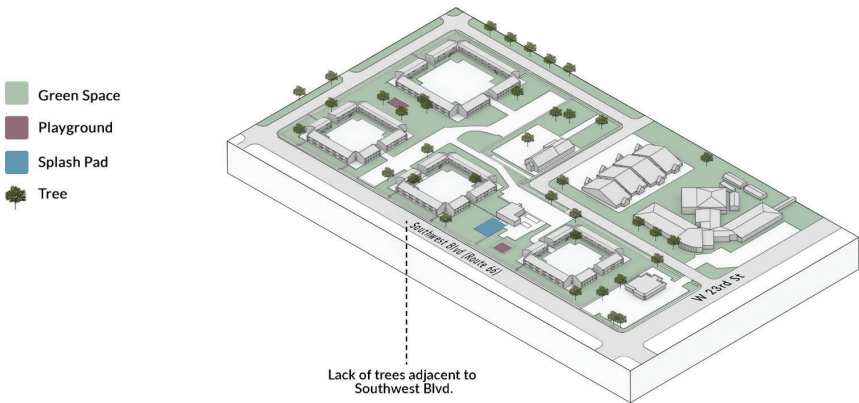
By Audrey Stehsel



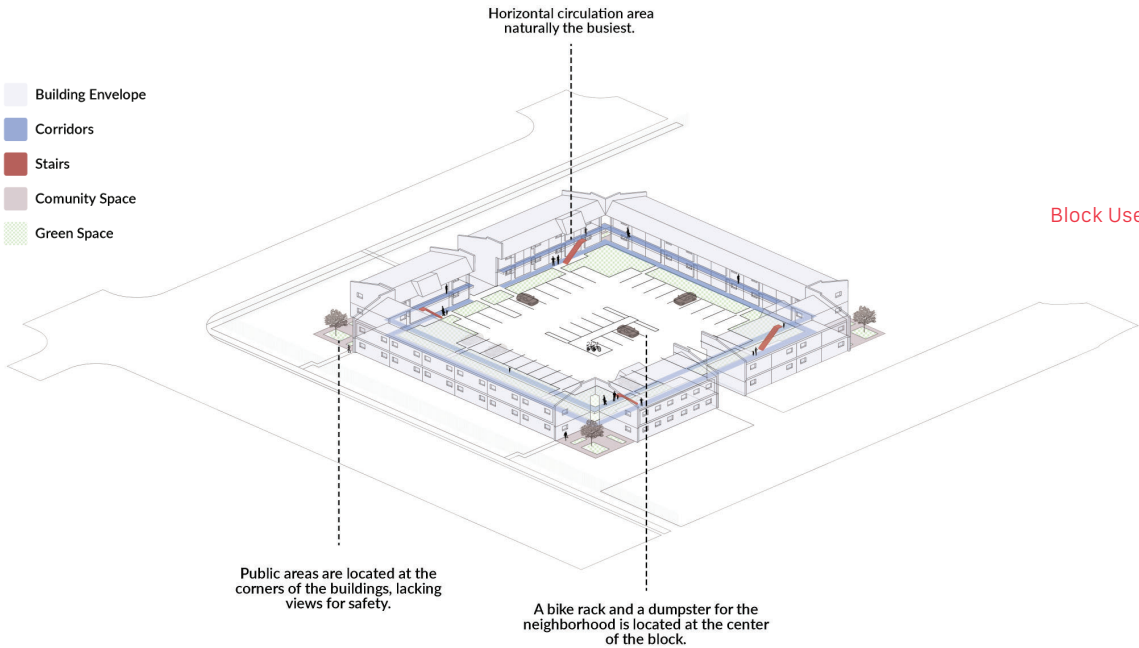
Eugene Field, Brightwaters Apartments, Tulsa:

Relationship with Urban Realm

By Hiroki Mishima

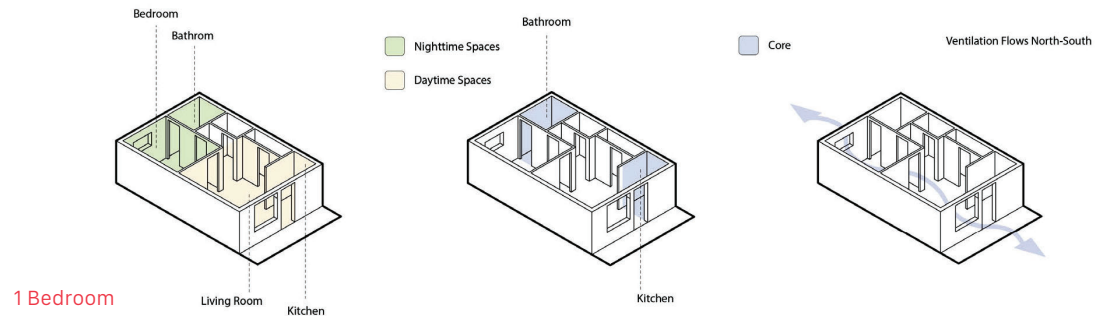
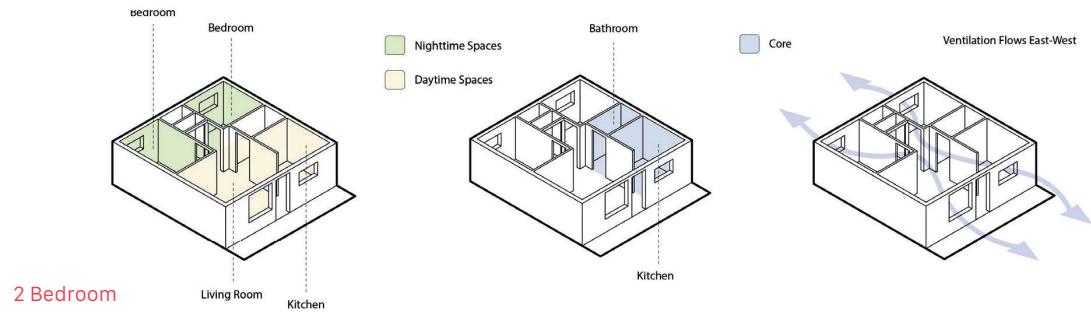
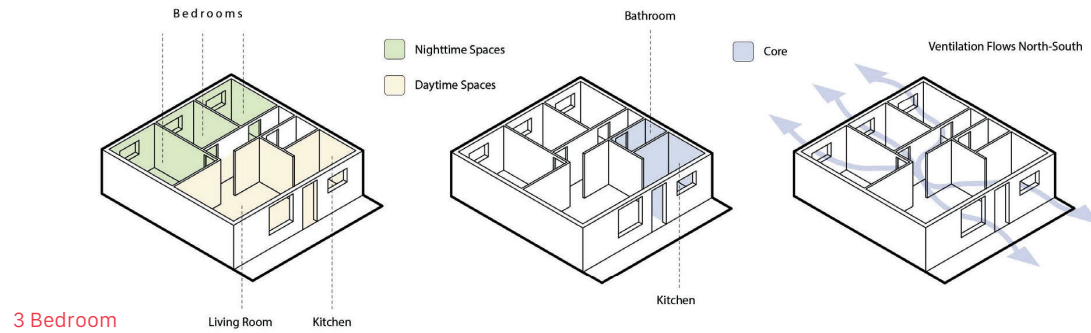


Open Space Map



Block Use Map

Eugene Field, Brightwaters Apartments, Tulsa:
Unit Typologies
By Hiroki Mishima





OKC Scissortail Park

During the fall semester of 2021, T.O. Bowman (Program Planner of Oklahoma City's Office of Sustainability) visited the Telesis seminar to lecture and answer questions prepared by members of the Telesis Team. The following is a transcription of T.O. Bowman's lecture.

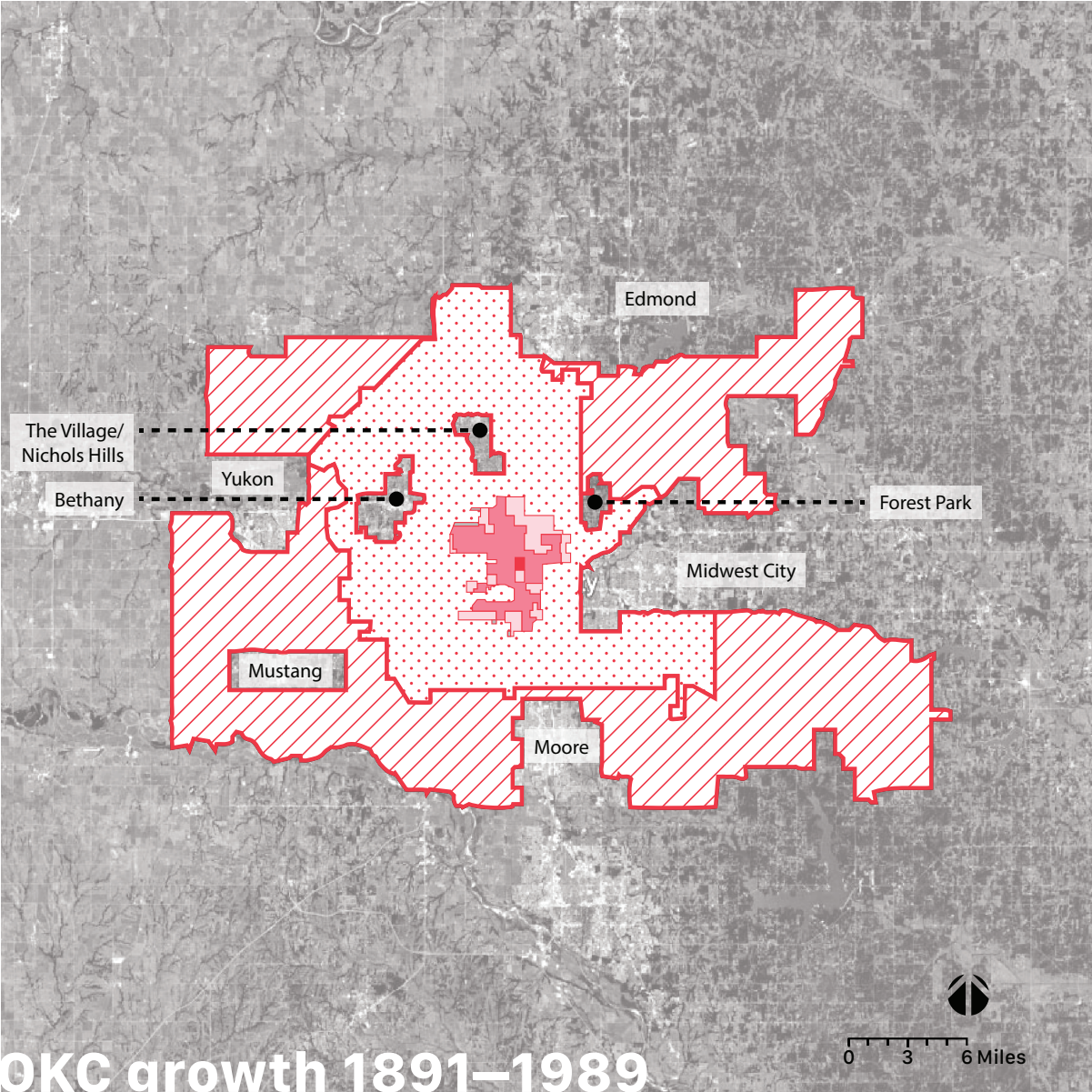
Where Are We + How Did We Get Here?

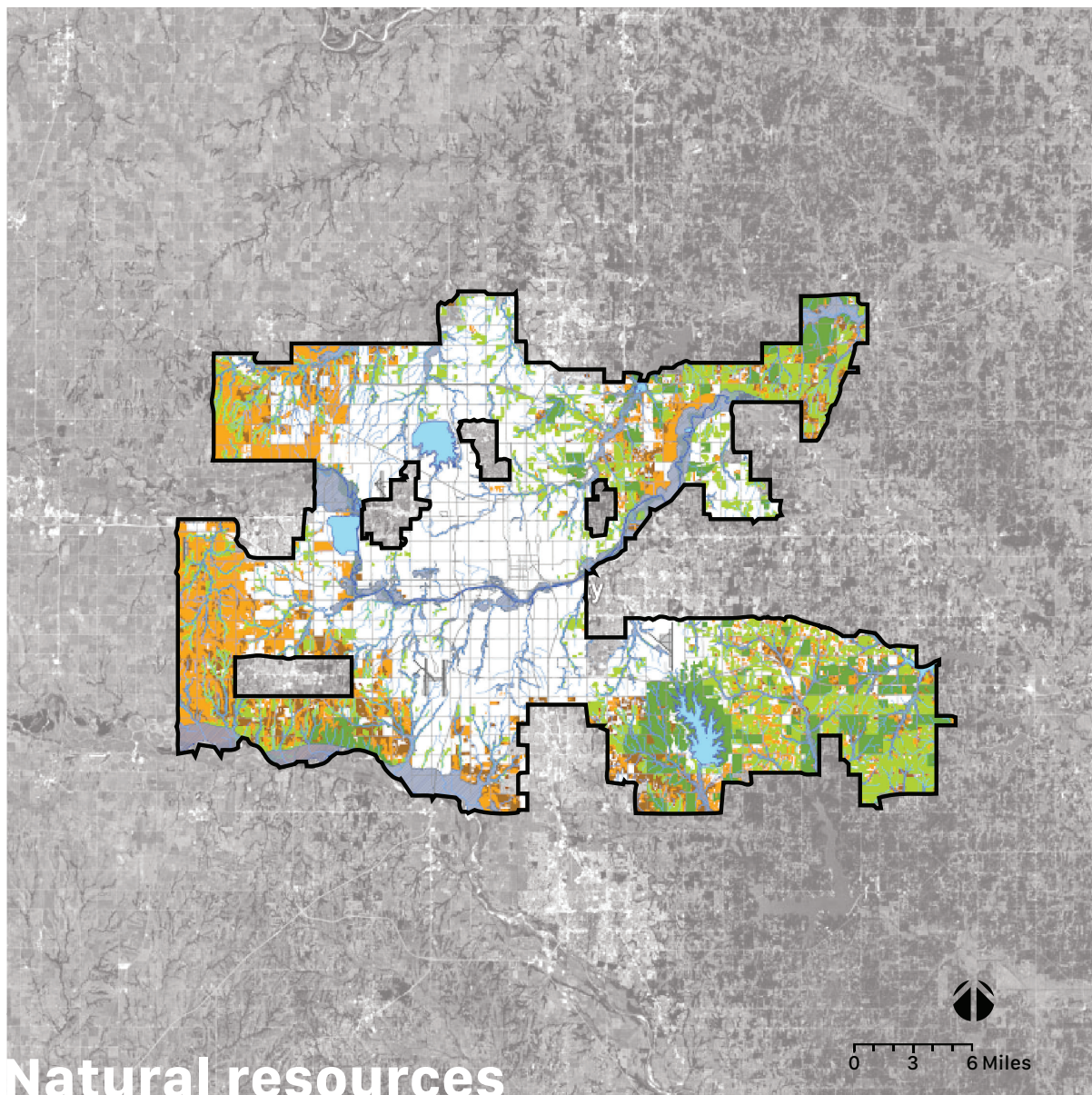
At 621 square miles, Oklahoma City is one of the largest cities by land area in the United States without a combined city-county government. An additional 26 square miles of other municipalities – The Village, Nichols Hills, Forest Park, Bethany, Mustang, Warr Acres, Valley Brook, and Lake Aluma – are completely surrounded by Oklahoma's capital city.

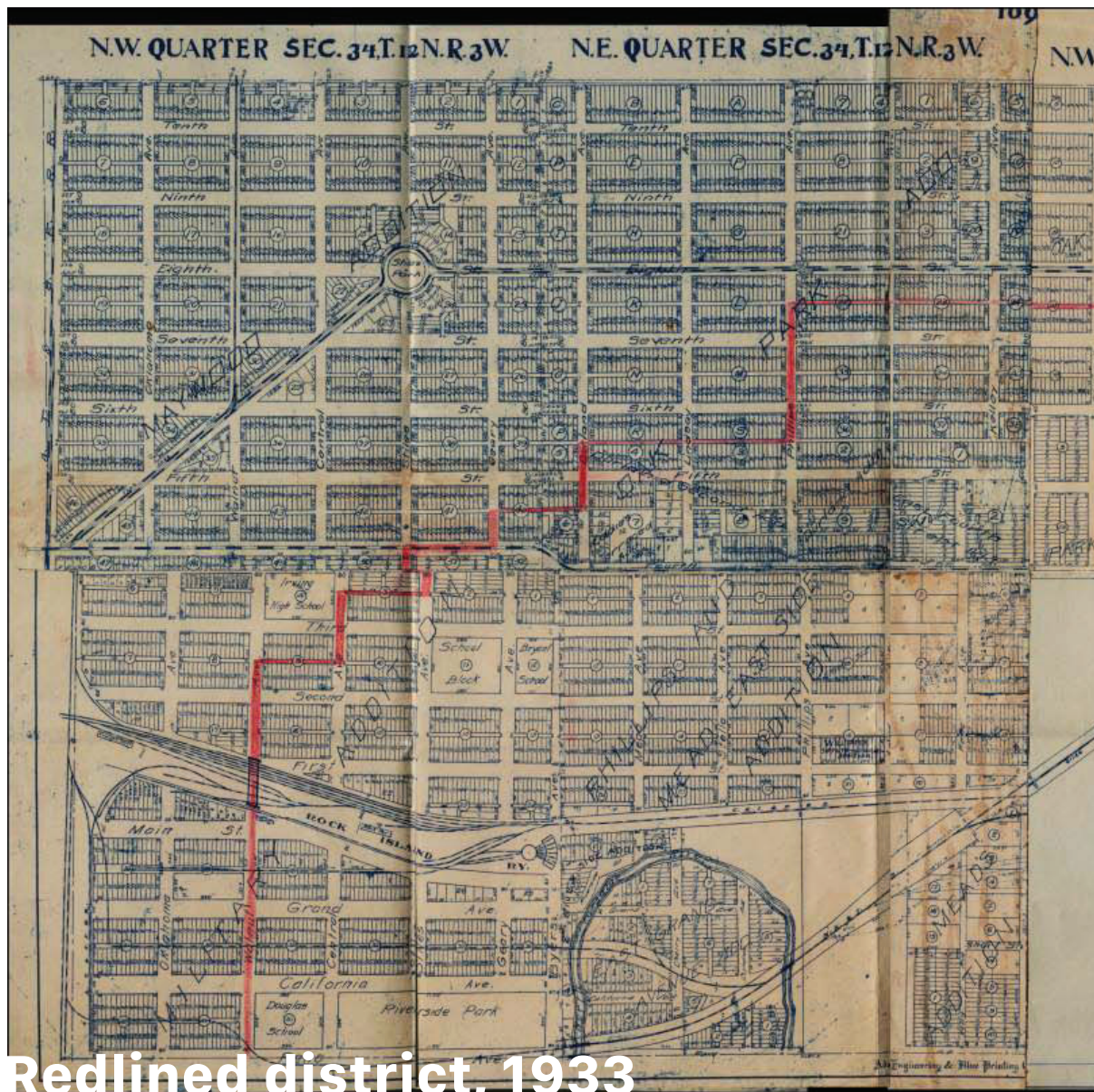
This growth didn't happen overnight, nor did it happen by accident. Oklahoma is the only state in the nation that requires cities and towns to rely on sales tax for operations – that is, cities and towns cannot use property tax collections to provide basic city services like clean drinking water, sewers, and road maintenance. Emphasis on a consumption-based revenue stream has created challenges for sustainable economic growth, equitable long-range planning, and reducing impacts to our environment.

As Oklahoma City's population began to boom in the 1940s and 1950s, city leaders recognized the need to preserve a large area of land to ensure the city could continue to grow and generate enough revenue to support future growth. In addition, thousands of white families

were moving to suburbs as a result of the U.S. District Court ruling in favor of desegregating Oklahoma City schools in 1963. At risk of losing large swathes of taxpayers to burgeoning suburbs, Oklahoma City annexed more than 430 square miles into the city over the course of four years from 1961 to 1965 – an area larger than the entire city of Fort Worth, Texas (355 square miles).







Redlined district, 1933

Where Are We + How Did We Get Here? (*continued*)



Redlining maps were created by the federal government's Home Owner's Loan Corporation to illustrate risk associated with mortgage lending to certain neighborhoods in the city. The assessments included routine property-value-related conditions, such as quality of housing, land quality, sales and rental rates, and most notably population of the neighborhood. The population assessment included race-based judgments that resulted in any neighborhood including persons of color or immigrant communities receiving the lowest grade, most risky loan categories. In Oklahoma City, much of the residential neighborhoods east and south were "redlined," and residents in those areas had to rely on predatory lenders due to being deemed ineligible for mortgages backed by Federal Housing Authority insurance.

The practice of redlining was banned in 1968, but the legacy of these discriminatory policies persists today. The



inability to buy property over the years to generate and pass down wealth led to lower credit scores, unaffordable housing stock, environmental exposures, the siting of pollution-generating sources like landfills and major highways, and lingering borrowing difficulties are all indicators of the damage redlining continues to inflict on our community.

With growing demand for places to live beyond the city center and ample land now "in the city" for developers to stretch their legs, Oklahoma City continued sprawling patterns of urbanization in greenfield areas of the city. What were once rural areas, soon increased in density and began to resemble more urban environs, and with more people, more rooftops, and more cars came more demand for basic city services in areas they had not yet reached.



Why adaptOKC?

In 2015, Oklahoma City adopted planokc, the first new comprehensive plan for the city since 1977. In this plan, city staff studied the effects of past, present, and future growth patterns on the city's ability to provide basic services. Expansions of infrastructure to provide clean drinking water and sewer service are quite expensive and need to be strategically planned to ensure adequate funding to support the investments.

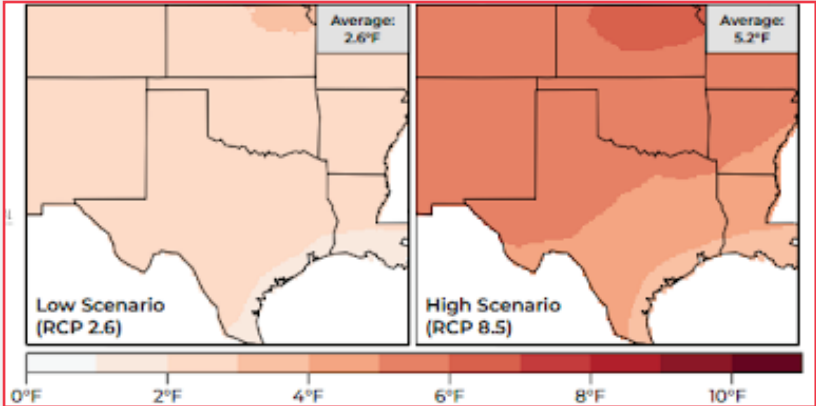
The greenokc element in planokc identified many of the environmental impacts associated with development.

In adaptokc, the city's first sustainability plan, we sought to both broaden the scope of research but also take a

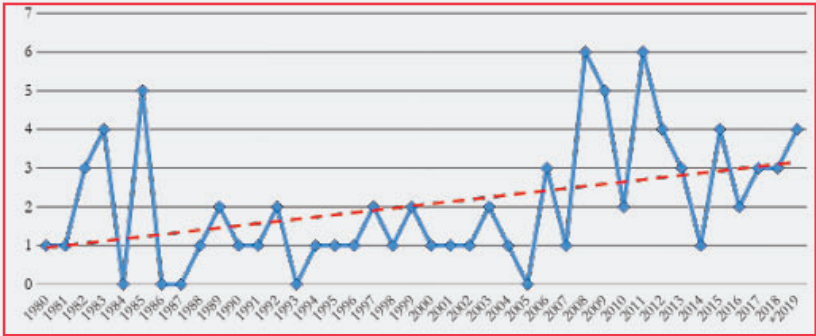
more granular look at economic, environmental, and equity impacts of these issues. AdaptOKC was unanimously adopted as an amendment to the comprehensive plan, planokc, at the June 11, 2020, planning commission meeting and was unanimously received by city council on July 7, 2020.

We deliberately chose to incorporate adaptation into the title of the plan. Instead of simply sustaining the practices of today to ensure some resources are available for future generations, we are seeking to continually improve by engaging in dynamic processes of refinement so future generations can do more than survive — so they can thrive.

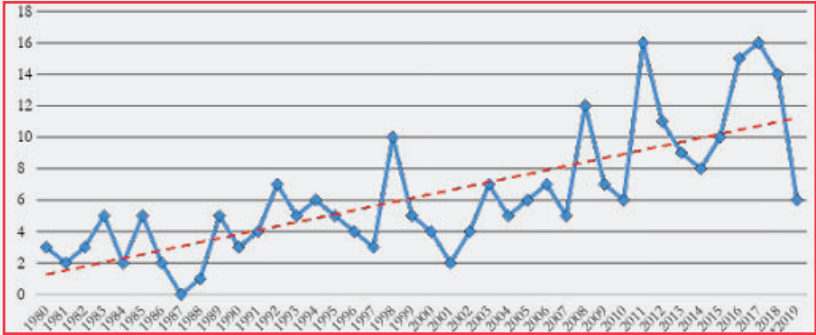
Midcentury projected change of annual average high temperature



Annual billion-dollar climate disasters in Oklahoma



Annual billion-dollar climate disasters in the United States



Why Invest in Adaptive Strategies?

From adaptokc:

One of the most serious threats confronting us is climate change. Characterized by changes in temperature and precipitation, climate change is a threat multiplier, intensifying existing challenges already facing us through infrastructure, safety and security, and public health.

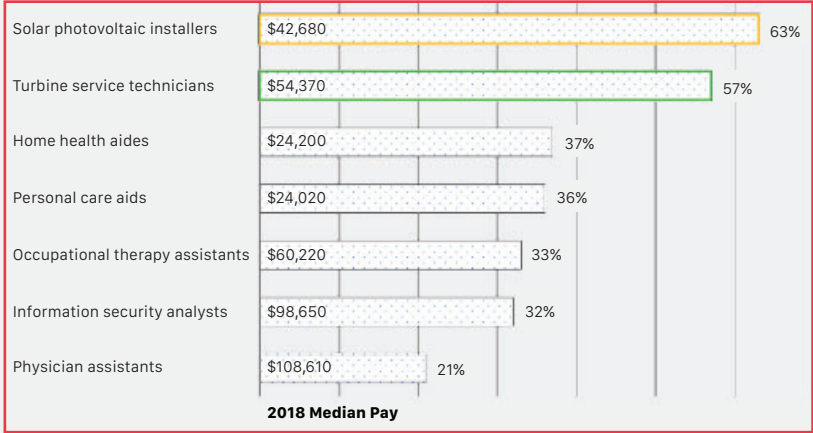
To that end, Moody's Investors Service published a white paper in early 2019 on U.S. cities addressing efforts to mitigate the impact of climate events. Based on the 50 largest Moody's-rated U.S. cities by outstanding debt, 57% have developed sustainability or adaptation plans but, when including those that intend to adopt such plans by the end of 2019, that number jumps to 82%. These plans are seen as "credit positive" as they indicate "how a city manages infrastructure vulnerabilities, current and future capital costs, mitigation of potential economic

impacts and risk of population loss." Moody's notes that while the federal government has "traditionally provided strong support for cities contending with the costs of natural disasters," should those funds wane it will result in greater state and/or municipal debt to finance recovery and adaptation.

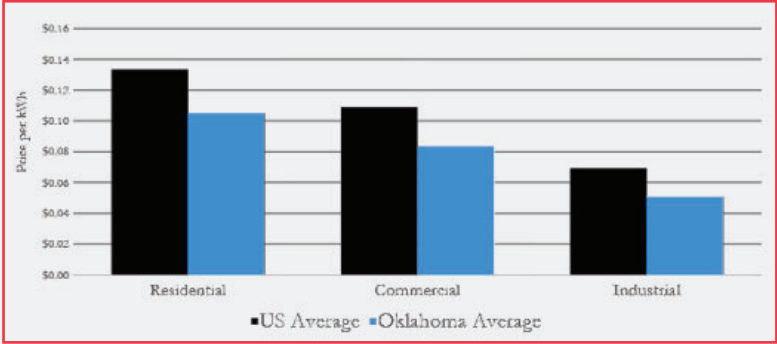
But our changing climate is not the only challenge to which we must adapt. Exponential changes in technology, labor, law and regulation, taxation and revenue, demographics, and development are slowly demanding new perspectives and approaches. Through adaptokc, we can begin to collectively sustain the growth and success Oklahoma City has seen thus far through the resilience that has come to define us.

The city was grateful to receive an updated climate projections report in 2020 from the South Central Climate Adaptation Sciences Center to help decision-makers

2018 Median Salary + Projected 2018–2028 Sector Growth



Oklahoma + United States Average Energy Prices by Sector



Why Invest in Adaptive Strategies? (*continued*)

understand the changes we can expect by midcentury (2036–2065). This report summarized multiple scenarios Oklahoma City could face in the future — high emissions, i.e., “business as usual,” and low emissions, i.e., a drastic reduction in global emissions. These projections indicate Oklahoma City can expect our average annual temperature to increase by about 2.6°F in a low-emissions scenario and around 5.2°F in a high-emissions scenario.

The warming indicated in the projected scenarios means Oklahoma City will experience about 13–28 more days each year considered “very hot,” with temperatures reaching above 100°F. For context, OKC residents presently experience about 9 very hot days each year.

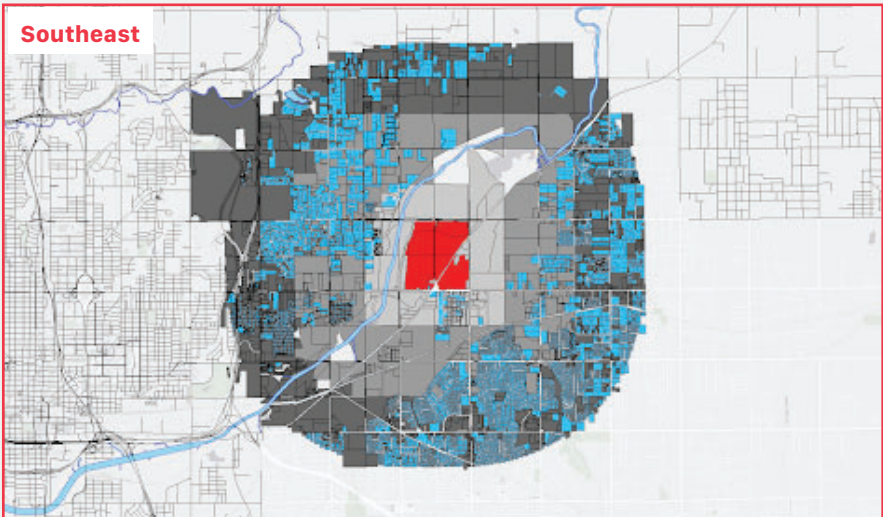
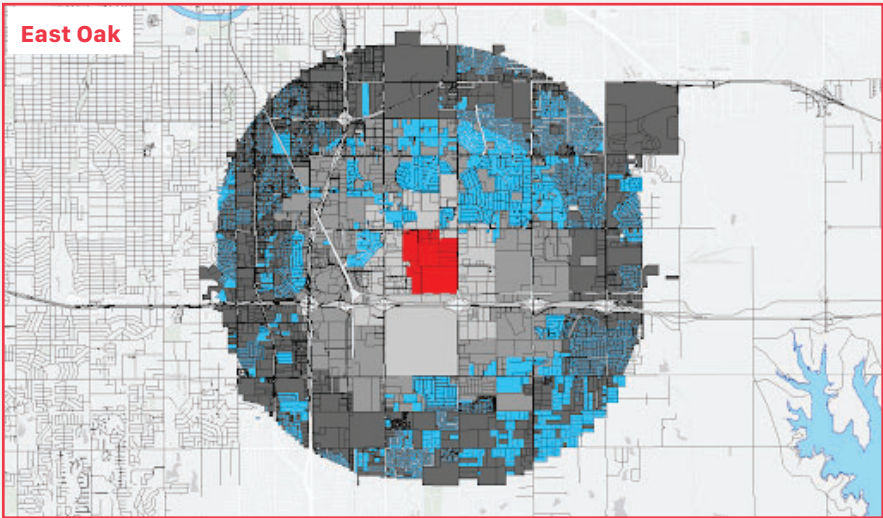
At least 4 percent of Oklahoma City’s area is covered in the impervious land use known as parking lots. That is more than double the square mileage of land area covered by bodies of water (2 percent). Factoring those large swathes of parking lots and an urbanized area larger than the entire city of Fort Worth, the threat of increased extreme heat seems guaranteed to exacerbate the effects of our existing — and growing — urban heat island. The urban heat island effect is a phenomenon where an “island” of ambient heat causes significantly higher temperatures in urban areas compared to nearby rural areas due to the

concentration of buildings, pavement, and infrastructure. This intensified heat increases electricity consumption and associated costs, contributes to poor air quality, and creates dangerous conditions for sensitive populations like the elderly and those who suffer from respiratory illnesses.

One of the key projects included in the American Recovery and Reinvestment Act of 2009 — the same funding that created the Office of Sustainability — was development and adoption of the city’s first energy efficiency code, IECC 2009. An energy conservation code is important to prepare our community for future increases electricity demand and costs. Without updated energy codes, it’s a lot easier for an out-of-state developer to come to Oklahoma City build a home or commercial building cheaply without regard for energy requirements over the life of the structure, then sell, rent, or lease an inefficient building to Oklahoma residents or small businesses who then are stuck with higher utility bills in perpetuity.

With a warmer atmosphere that can hold more moisture for longer periods of time, the projections indicate that Oklahoma City could experience more inundating flash flooding events, despite receiving about the same amount of annual rainfall at midcentury. As the city developed, natural features and green spaces were replaced by the

More than 60,000 residents live within 2.5 miles of a high-volume landfill.



Legend

- | | | |
|--|--|---|
|  Landfill Parcels (LP) |  1.5 to 2.5 Miles from LP |  Residential Parcels |
|  0 to 0.5 Miles from LP |  1.5 to 2.5 Miles from LP | |

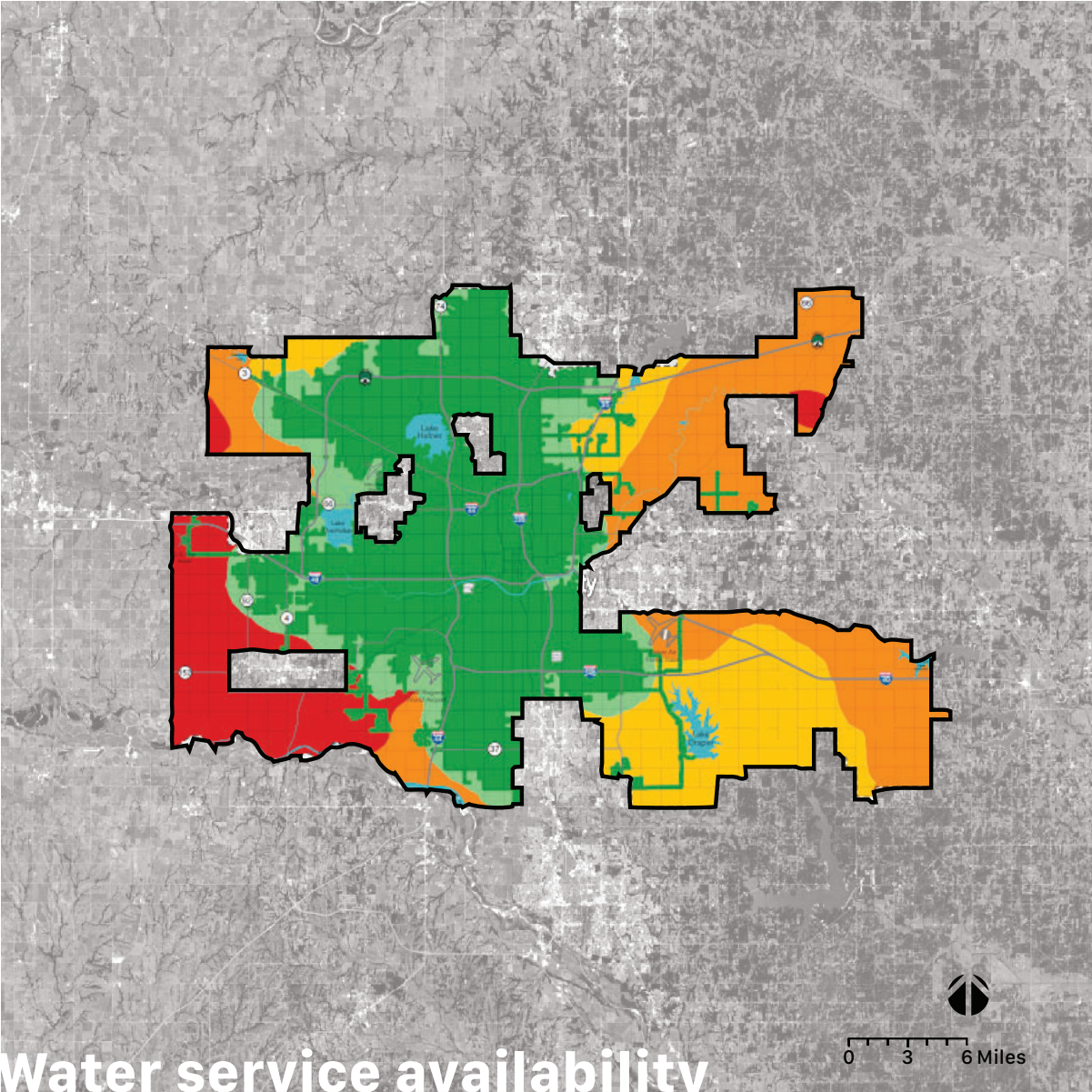
Why Invest in Adaptive Strategies? (*continued*)

built environment, changing the way water behaves on the land and contributing to higher volumes and velocity of stormwater that needs managing. As most of Oklahoma City's impervious surfaces are infrastructure, that is, roads, bridges, parking lots, buildings, and driveways, water quality can be negatively affected from the “first flush” of rainfall where a majority of the various pollutants collected on impervious surfaces are washed down storm drains and into our creeks, streams, and other water bodies. If a higher concentration of pollutants than federal regulations allow are discovered over time in our waters, the city is required to engage in a lengthy and costly planning and remediation process. Warmer water bodies, paired with a high concentration of nutrients, such as fertilizers from lawn treatment, from stormwater or irrigation runoff can lead to harmful blue-green algae (BGA) blooms, typically in late summer or early fall. BGA can produce toxins that may contaminate drinking or recreational water, and some (anatoxin, microcystins, etc.) that can cause illness in humans and animals.

These types of climate change impacts can be costly and will only grow costlier with inaction because we're already seeing the cascading costs add up. The clean-up from the October 2020 ice storm generated — over the

course of three days — nearly half of the annual weight of curbside trash collections including bulk waste collections. Just as City crews were nearing completion of collecting the ice storm debris in February 2021, Winter Storm Uri arrived, causing electricity blackouts in several states and resulting in the deaths of more than two hundred people. With unwinterized compressors freezing, Oklahoma Natural Gas purchased from the dramatically more expensive spot market to keep natural gas available for residents to heat their homes. These costs, more than \$2 billion for both natural gas supplied to homes and for natural gas used by Oklahoma Gas & Electric (OG&E) to generate electricity, will be borne by residents (“rate payers”).

Despite Oklahoma's historically low electricity prices — some of the lowest in the country across all sectors — Oklahoma City residents use more kilowatt-hours per person than the national average. This outsized appetite for electricity that will soon cost residents more and increase their energy burden — that is, the portion of household income required to pay their utility bills.



Providing water services is the city's most energy-intensive function.

What Are adaptOKC's Goals?

Energy Productivity

From adaptokc:

There is no foreseeable circumstance where the cost of electricity declines. Even less foreseeable is a circumstance where City operations, residents, businesses, and institutions see a reduced need for electricity. Right now, however, we cannot conflate low price point with low cost. Fossil fuel dependency guarantees exposure to commodity price volatility while shifting the burden of degraded environmental and public health to ratepayers. That same dependency bolsters barriers to renewable energy deployment, which compound costs by curtailing economic growth. We must work through every means possible to realize the full potential of a thriving renewable energy sector, especially our emerging solar market.

The energy efficiency of City operations should

be a priority. Residents pay for electricity twice: once for their homes or businesses through monthly bills and again for the City's via taxes. Be it avoided costs in new facilities or return on investment in renovations and remodels, energy efficiency must be an inseparable and essential operating principle of City projects.

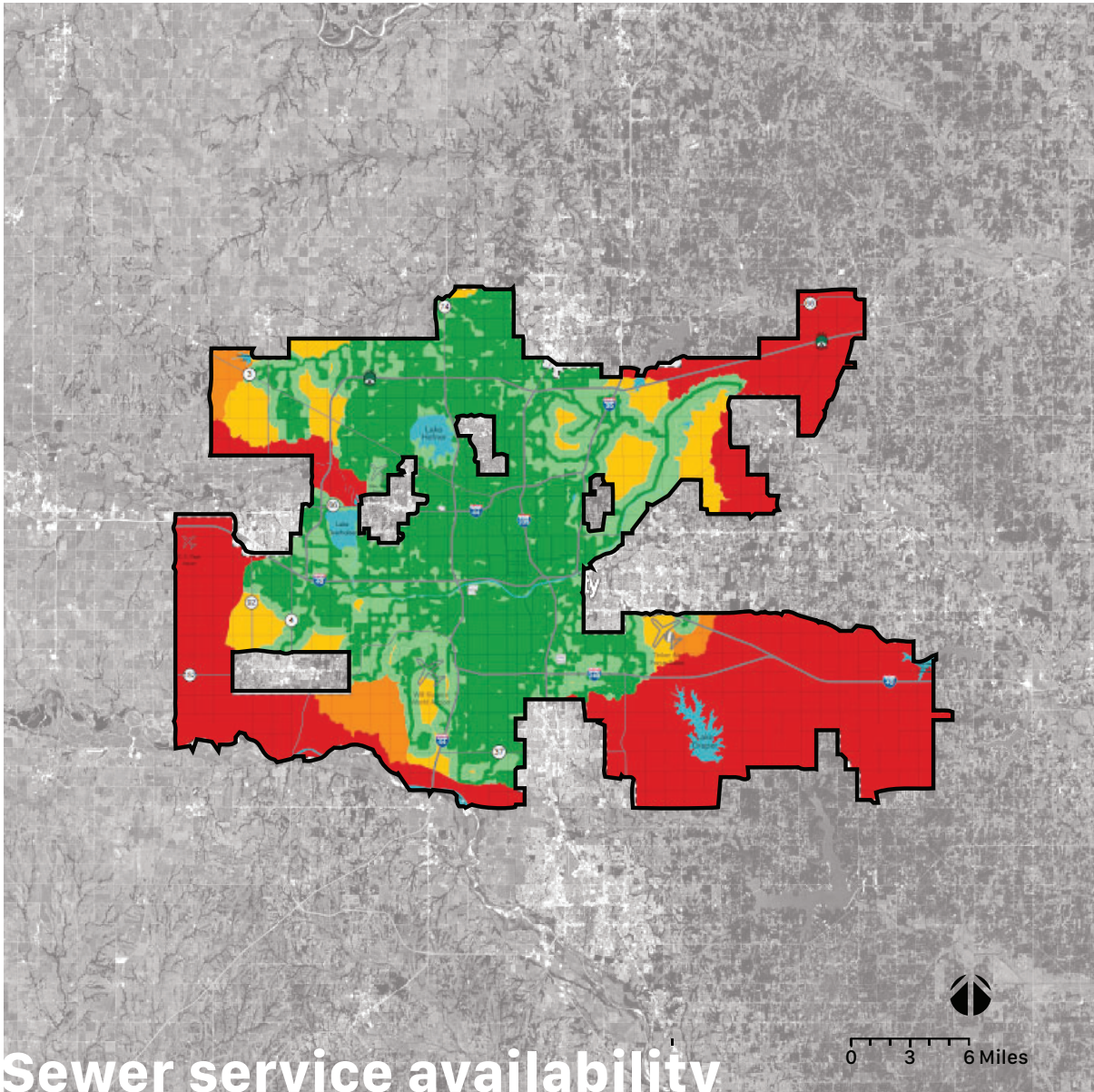
As the years grow increasingly hotter, we must be proactive with policies and programs to support affordability for residents, businesses, and institutions through efficiency, enforcement, and modern building requirements.

Goals

- 1) Reduce emissions associated with energy consumption.
- 2) Diversify local and state energy economies.
- 3) Reduce cost of municipal operations.

Natural & Built Environment

From adaptokc:



What Are adaptOKC's Goals? (*continued*)

For a modern city to remain globally competitive, it is critical to expand existing industries, attract new businesses, and accommodate more residents. Oklahoma City can distinguish itself by developing in a sustainable, efficient way as it grows that does not leave even greater challenges for future generations. Visitors and residents alike recognize the need to ensure local waterbodies are protected from contamination and vulnerable populations can find relief from the financial and physical effects of extreme heat.

Our plan seeks to ensure Oklahoma City realizes the benefits of the efficient growth pattern advanced by planokc, while encouraging proactive solutions to maintain a complimentary relationship between the natural and built environments. This complimentary relationship will strengthen the economy and sustain residents' high quality of life for many generations. Inaction addressing current and future vulnerabilities will affect our ability to deliver on existing commitments and lead to higher costs in the future.

By increasing tree and vegetation cover, making roofs and hardscapes cooler, and implementing the development and conservation strategies outlined in planokc, we can limit the negative impacts of urbanization on public

health, local watersheds, and sustainable economic growth. Today's action (or inaction) will shape tomorrow's economic, social, and environmental vulnerabilities.

Goals:

- 1) Protect water quality
- 2) Prevent damage caused by flooding.
- 3) Mitigate effects of extreme heat.
- 4) Ensure residents have access to healthy food.

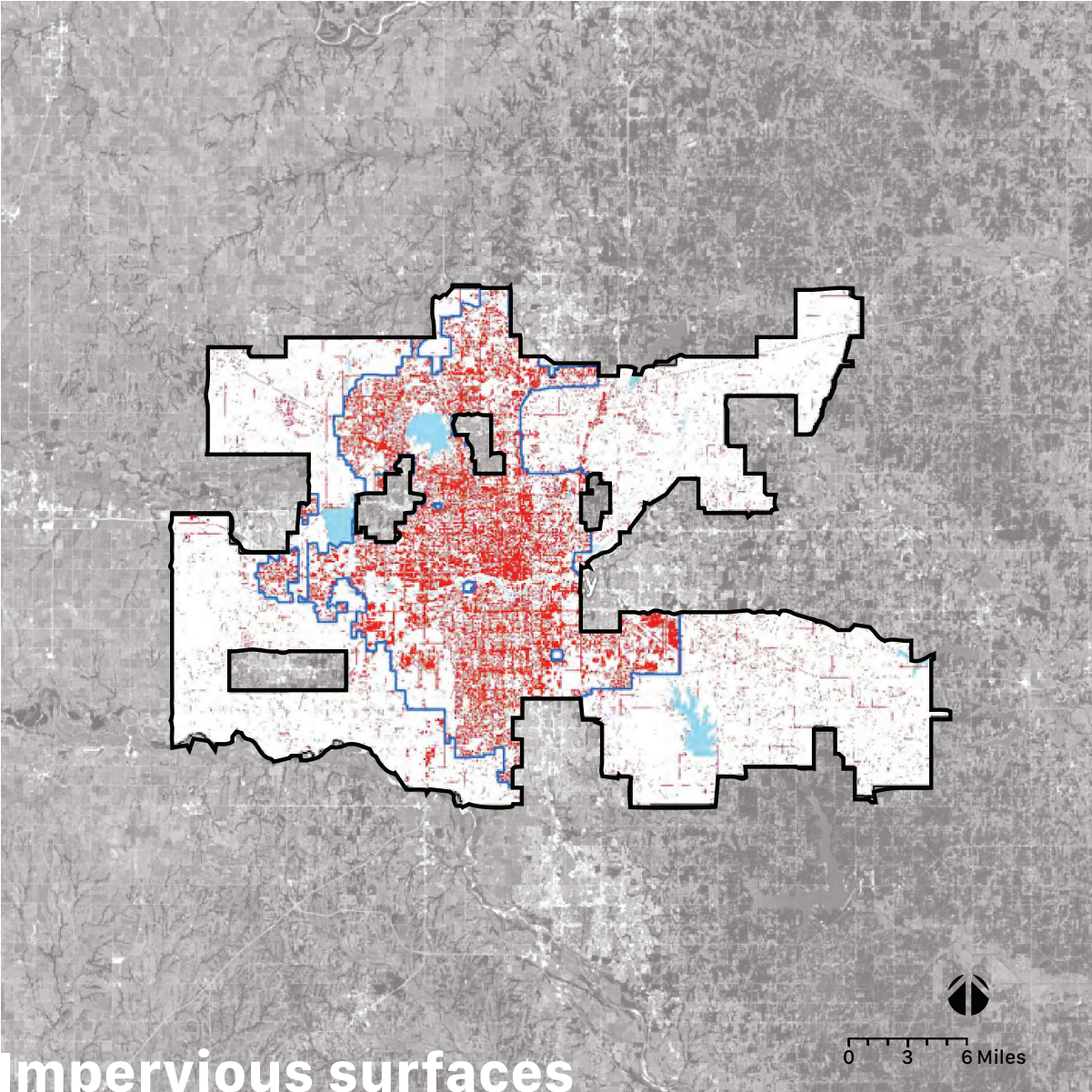
Air quality

From adaptokc:

Without strong efforts to reduce our emissions — both of carbon dioxide and ground-level ozone and its precursors — not only will the quality of our air degrade but so will the health of the public and the health of our economy.

Rather than suffer the burden of a federal nonattainment designation or a prospective emissions tax, Oklahoma City can work to proactively and responsibly curb emissions through more expanded bicycle and pedestrian infrastructure as well as expanded transit service.

Determining a role in the expansion of alternative fuels is also necessary as helping that market develop in Oklahoma City can help replace existing, high-emissions VMT with



Impervious surfaces

Legend



Impervious Surfaces



Body of Water



Urban Area



City Limits

What Are adaptOKC's Goals? (*continued*)

low-to-no emissions commutes. We also cannot ignore the fiscal limitations we face in sustaining our transportation infrastructure and the increasingly outdated approach through which we receive street and road funding.

Safe, healthy air is a fundamental signifier of quality of life. As part of a transportation system that works for all users, eliminating emissions and pollutants must be part of the equation and at this crucial point in time we have the option of doing it ourselves or doing so under federal requirements.

Goals:

- 1) Safeguard Oklahoma City's attainment designation.
- 2) Secure funding for transportation infrastructure.

Waste Reduction

From adaptokc:

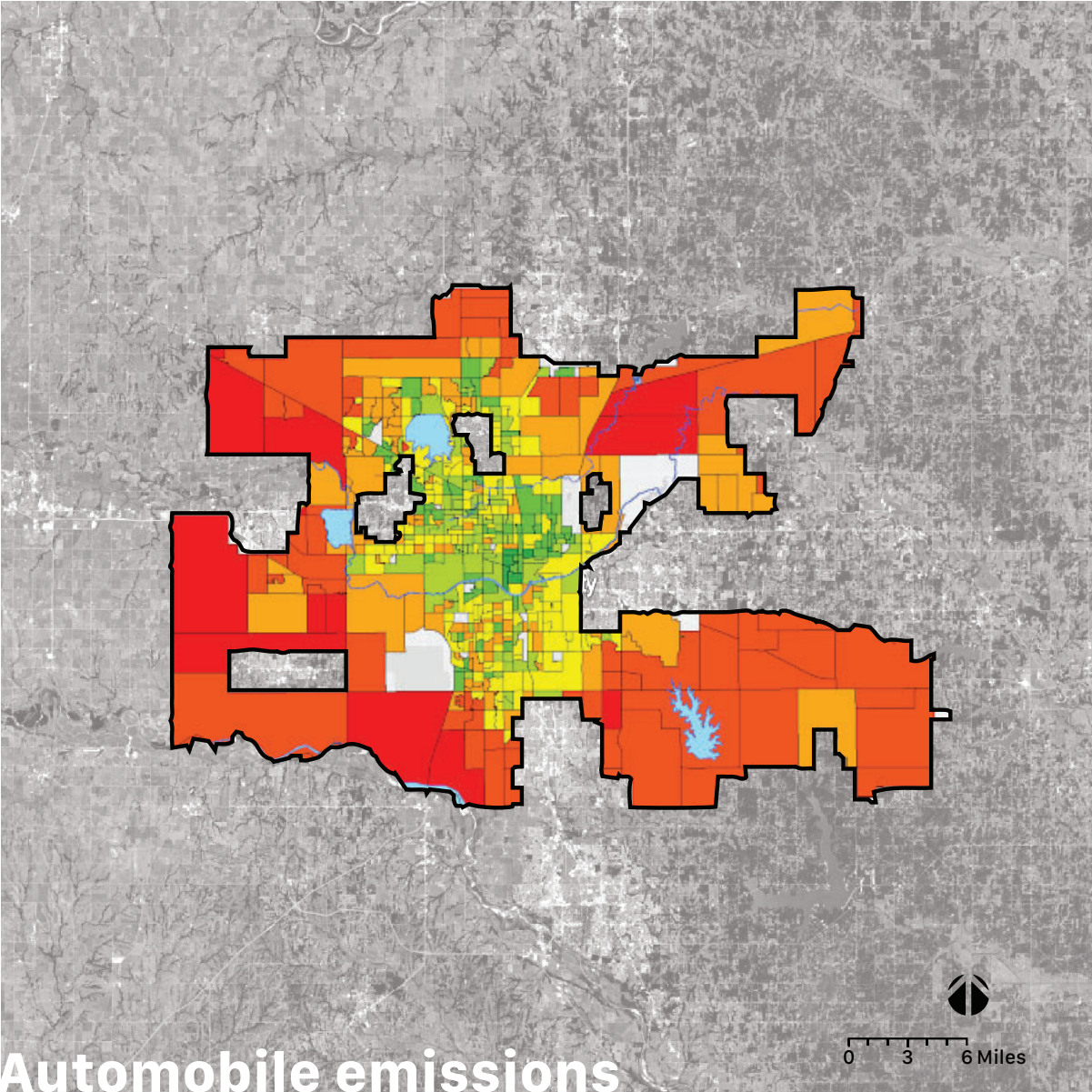
The economic, environmental, and social costs of traditional waste disposal will continue to grow without a combination of practical and innovative solutions including greater recycling, composting, materials reuse, anaerobic digestion, and source reduction. The success of the expanded curbside recycling program illustrates that residents place a high priority on public investments that reap both near- and long-

term benefits.

Our plan will implement the vision of planokc by supporting the growth of materials recovery industries, protecting valuable land for future growth, and integrating life-cycle considerations to purchasing decisions. It acknowledges Oklahoma City's status as a primary stakeholder in the disposal practices of the metro and proposes purchase power aggregation to increase waste diversion from commercial properties and construction/demolition activities. With control of a portion of the MSW stream (residential curbside, hazardous waste) and influence over others (commercial, office, retail, industrial), Oklahoma City is positioned to affect how and where the metro manages waste materials for the next century.

Goals:

- 1) Recycle or reuse recoverable material.
- 2) Increase demand for products made with recycled content.
- 3) Prevent exposure to hazardous waste.



Any Progress?

There are many vehicles carrying forward the implementation of adaptokc concepts. Guided by bikewalkokc, the city's first bicycle and pedestrian master plan, funding sources like MAPS (Metropolitan Area Projects) penny sales tax capital investment program, General Obligation Bonds, and the Better Streets, Safer City one-cent sales tax extension are working toward constructing important connections for biking and walking to address the gaps created by fifty years of not building pedestrian infrastructure.

Scissortail Park, a major green space in the heart of our urban center, provides respite from the urban heat island effect and captures rainwater through a multitude of strategically designed swales and rain gardens. Further, strategic efforts and partnerships with the Parks and Recreation Department and Public Works Storm Water Quality have expanded low-impact development educational opportunities through demonstration projects, including an AARP Community Challenge grant award, to add two rain gardens to the parking lot of Memorial Park in central Oklahoma City.

The Planning Department is managing a multi-phase project to update the City's development-related codes, including the Zoning and Planning Code, Sign Code, and Subdivision Regulations. Through this major update, issues identified in adaptokc, such as minimum parking requirements, green roofs, rooftop solar as-of-right, landscaping standards, tree preservation, and more will be considered for updates.

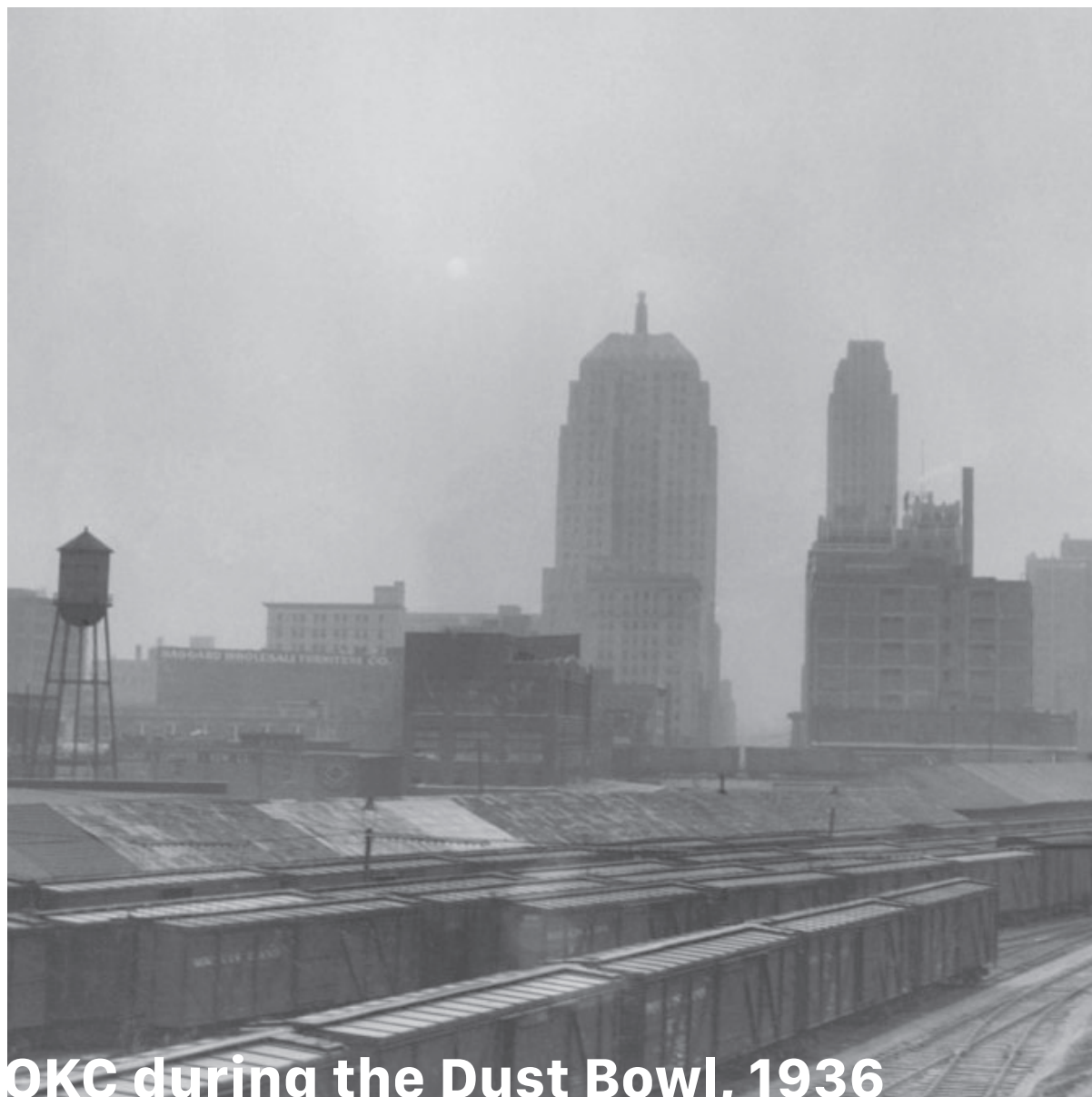
Other agencies are also helping advance the goals of adaptokc, for example, Oklahoma County recently established a Commercial Property Assessed Clean Energy (C-PACE) program that will allow commercial property owners to invest in energy efficiency, renewable energy, and resilience measures using long-term, stable borrowing power of a property tax assessment. The Association of

Central Oklahoma Governments completed a study of the potential costs of a non-attainment air quality designation for the metropolitan area. The summary estimates we could see costs over twenty-eight years totaling between \$9.6 billion to \$15.2 billion.

The Oklahoma Department of Transportation is responsible for developing and implementing a statewide carbon reduction strategy through the Infrastructure Investment and Jobs Act; EPA data reflects that Oklahoma County represents the largest share of carbon emissions from the transportation sector in the state. Tremendous opportunity to further explore carbon markets and greenhouse gas emissions reductions as part of this Carbon Reduction Strategy.

University partnerships are always a vital part of municipal sustainability. Through an informal partnership with Dr. Kevin Gurney at Northern Arizona University, the Office of Sustainability has received preliminary, county-level greenhouse gas emissions data extracted from The Vulcan Project databases. The Vulcan Project was created by the research team of Dr. Kevin Robert Gurney and quantifies all fossil fuel CO₂ emissions for the entire United States at high space- and time-resolution with details on economic sector, fuel, and combustion process. Locally, partnerships with the University of Oklahoma are seeking to support research proposals to create a heat vulnerability Index and associated tool to assess hotspots where the urban heat island effect can be particularly dangerous or costly to residents.

The public transit agency for Central Oklahoma — EMBARK — began air quality investments in 2016 through a plan by the Central Oklahoma Transportation and Parking Authority that would replace its entire bus fleet with compressed natural gas (CNG) or electric buses by 2025. Since then, EMBARK has added 21 CNG-fueled buses to its fleet: six through a Federal Transportation Administration



OKC during the Dust Bowl, 1936

Any Progress? (*continued*)

(FTA) grant, plans for eight more through a federal sustainability grant from the FTA, and has been awarded five additional grants for sustainability efforts.

The Oklahoma City Water Utilities Trust is in the process of seeking professional services to provide composting services for trees, limbs, and leaf debris generated from storms that would not be collected during the city's normal monthly bulky waste collection schedule to determine cost-effectiveness of the service.

The Office of Sustainability is one of nine community-based organizations participating in the Solarize OKC coalition to help bring trustworthy information about solar contracting and consumer protections to Oklahoma City in the spring and summer of 2022. The Solarize OKC campaign isn't just about sharing information, however, as the coalition will competitively hire one or more solar installers who can offer bulk purchasing discounts that increase based on the number of residents who sign up.

Reasons to Be Hopeful

The image of downtown Oklahoma City during the Dust Bowl of the 1930s stands as a reminder that we have faced major environmental and economic crises before and responded to and recovered from those by recognizing the cause and effect of human activities, introducing sound public policy interventions, and just changing the way we were doing things.

Inhabiting Border Spaces

97 / 98

René Peralta

Telesís Vol. IV 2021



While the border between the nations grows taller and harsher, much abetted by the ill will of global guerrillas, the civil population grow more intimate. Bruce Sterling

In this essay, I argue that the twenty-first-century border is both a physical infrastructure imposed by the state, as well as a social infrastructure re-coded by its citizens. The border is a contested region that can breed new forms of cultural convergence between human and nonhuman actors, leading to the emergence of new forms of sovereignty.

Post-apocalyptic border landscapes

Sleep Dealer is a dystopic sci-fi film, directed by Alex Rivera that depicts an impenetrable border between the United States and Mexico built with concrete and digital military-grade surveillance technology. Rivera's storyline relies on familiar tropes from the borderlands such as political injustice, labor exploitation, migrant civil rights violations, and other contemporary conditions exacerbated by future economic inequalities and planetary climate change. The film's locale is Tijuana (TJ), the largest border city in Mexico, and its urban neighbor San Diego, California (SD).

The city appears primarily at night because Tijuana is at its best when nobody is looking. It takes an avid townie to meander through this twenty-first-century street-smart city. TJ is not Mexico, as Raymond Chandler alluded in his novel *The Long Goodbye*. However, Tijuana's border-ness has always appealed to creatives searching for a post-apocalyptic urban setting and despite the federal government efforts to "mexicanize" the city, it remains subjugated to globalization's deprivations.

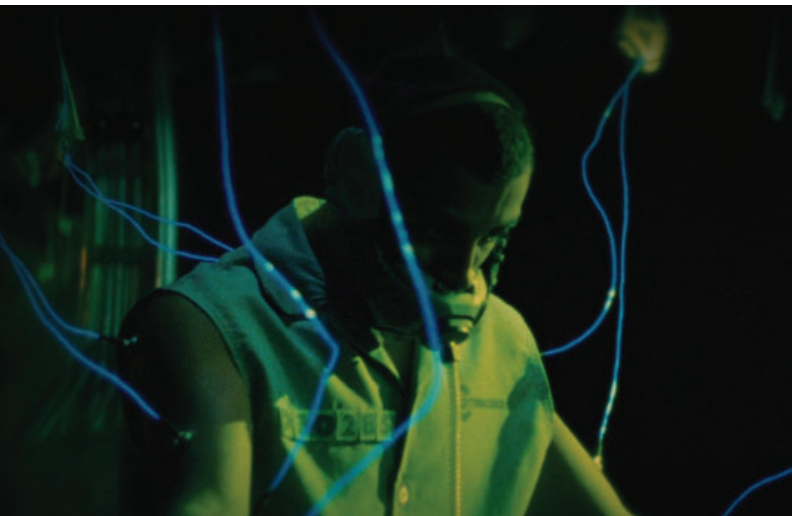
As the film's setting, the TJ-SD urban border is a futuristic and dichotomous area inhabited by both informal industrial (maquiladora) settlements and urban enclaves of the post-industrial age. OU professor Carolina Rueda observes, "When representing Tijuana, the film aesthetically delineates a strangely rational environment that seems all too close to the reality of the maquiladora industry" (Rueda, 2017). In an alternate location, another

dialectical condition arises between the rural life of the global south and the urban hegemony of the north, where the latter's corporate communication and military infrastructure has control over the former's water resources. The film's protagonist, Memo, lives with his family near a U.S.-built water reservoir in southern Mexico. Memo is a hacker and tinkerer who repairs old-tech gizmos and listens to world radio and satellite feeds. One day his undeliberate intrusion into the global communication system gets him noticed by the U.S. federal government. As the plot becomes more elaborate, unmanned aerial vehicles (UAVs) are sent across the border to terminate the aggressor, wrecking Memo's modest house and killing his father.

After his loss, Memo decides to leave for Tijuana in search of work in info-maquilas known in the film as "Sleep Dealers." These companies outsource human labor through neurotransmitter implants known as "nodes." Rambling most of his time in the dilapidated areas of downtown Tijuana, Memo searches for a coyote who could graft a set of counterfeit nodes. The city appears abused and exhausted as Memo seeks to be a cyber-laborer.

Sleep Dealer transforms the maquiladora worker's body into a virtual infrastructural gateway, an interface between the Tijuana manufacturing system and a network of construction robots working in San Diego. The human body is a border where the cybernetic-human hybrid is the cyborg proletariat of late capitalism's futurity—the relation between organism and machine became a border war (Haraway 2016).

The film's Marxist sentiment, capitalism techno-objectification of the laborer, transforms the maquila worker into a trans-human entity. Although, the film also depicts erotic experiences and recreational uses for the nodes through haptic technology. By blurring the lines between technology and human relations, *Sleep Dealer* seeks to renew our sense of humanity in a post-human world. As Rosi Briadotti explains, modernity's machinery imitated embodied human capacities; today, a complex



Still from *Sleep Dealer* by Alex Rivera

political economy has connected the body with machines in a more intimate form through simulation and mutual modification (Briadotti, 2013).

Sleep Dealer lacks a local gaze. As Tijuana writer Rafa Saavedra has expressed in many blogs posts, an endogenous desire to live the city and accept it as a perpetual shifting metaphor, beyond the residue of murky legends and the cold outlooks of those who identify Tijuana as San Diego’s backyard (Saavedra, 2012). However, Rivera is Peruvian, and according to an interview, his motivation for the film was the migratory journey of his father to the U.S. from Peru (Rivera 2010). The film is critical of the globalization forces in both Mexico and the global south as Carolina Rueda writes, “concerning dystopian impulses, *Sleep Dealer’s* affinity with classic dystopian narratives relates to the anti-utopian reality of Mexico and its modernization and warnings of possible ‘nightmarish’ events in the near future” (Rueda 2017).

The film’s development proposes a quadrant of possibilities, yet the worst-case scenarios vectors seem to intersect. One where the border future is a benign smart city promises a technological utopia of efficiency and convenience. And a malignant one transforms the landscape via urban power, politics, and authority while transcending social debate (Green 2019). However, according to geographer Michael Dear, there is the possibility of a futurity involving a borderless region that happens to be bisected by a metal boundary. A syncretic post-border paradigm, multicenter, multicultural, and multilingual single metropolis (Dear and Leclerc 2003).

Rather than revisiting *Sleep Dealer* for its particular tropes of the US-MX border, this essay examines the Tijuana-San Diego border through a techno-social approach and the imaginary capacity of border urbanism to produce an endogenous cultural praxis at a metropolitan scale, allowing diverse connections between objects, spaces, and bodies (Farias, 2010). In *Sleep Dealer*, various possible futures are shown in different forms. The dystopian conditions portrayed in the film, such as a

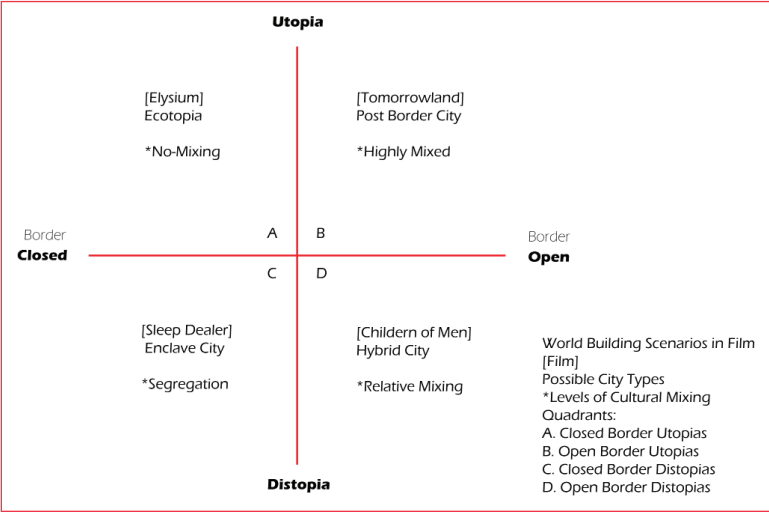


Diagram by René Peralta
Border world-building scenarios in film.

fortified and militarized border between the United States and Mexico, appeared as a possibility during President Donald Trump's presidency (2017—2021). A series of thirty-foot-tall concrete and steel prototypes were built in 2017, just a few meters across the Tijuana border. These artifacts incited a series of artistic responses that included on-site performance pieces and video art projections across the border fence onto the prototypes. Donald Trump's proposed wall failed to gain traction because the design did not deter people from climbing it. However, the impetus to build a "new" wall is worrisome. As Rick van Schoick writes, "The construction of the prototype border wall in San Diego is demonstrative of possible eventualities. They remain symbolic, if not symptomatic, and even a harbinger of things to come" (van Schoick 2020). It is in defiance of this that the city and its artists have adopted the wall as part of their cultural expression infrastructure.

Memo triumphs over the far-reaching techno-state that killed his father at the end of the film. Water access is restored in his town, and he, like many migrants anticipating a brighter future, stays in Tijuana. Through blurring the body-machine connection, *Sleep Dealer* imagines the future struggle of the migrant worker and late capitalism's continued control of the global economic system. The digital age failed to produce a twenty-first-century Copernican revolution as promised. In *Sleep Dealer*, technology aggregates, the past persists. The Metaverse turns on the migrant. However, Rivera is correct in that technological reckoning should take place in the borderlands, where the visceral spark of human agency remains.

Entering and Exiting: A Short History of a Permeable Border.

The national limit was defined by a barbed wire fence after the Mexican-American War of 1846, which also prevented cattle from crossing it. By the 1900s, it remained a barbed wire fence with a series of concrete boundary monuments that marked the three-thousand-kilometer border. During World



Photo by Jill Marie Holslin. Projected light graffiti across the international border into the United States, and onto the eight prototypes of President Donald Trump's newly envisioned thirty-foot-high border wall.

By Jill Marie Holslin of San Diego State University, San Diego's Overpass Light Brigade, Andrew Sturm of University of California, San Diego. November 2017.



Photo by René Peralta
Border wall between Tijuana (right) and San Diego (left).



Photo by René Peralta
Vendors at the border.

War II the border underwent a second transformation, when the barbed wire fence was replaced by a chain link fence. The fence was replaced in the 1980s with corrugated metal mats that had been used in Vietnam as helicopter landing pads, turning it into a symbol of global hegemony. In the northern region of Mexico, the material transformation of the wall has paralleled the process of economic exploitation and globalization.

In the end of the nineteenth century, the United States began expanding and settling into newly acquired territory along the west coast of California. Rail infrastructure became the preferred way to transport goods to the new frontier. In 1909, the San Diego Arizona Railway Company (SD&A) built a 148-mile railway that crossed the border into Tijuana, traveled to the neighboring city of Tecate, before it crossed the border again to El Centro, California (Metropolitan Transit System, 2013). Rail transported supplies that supported the growth of cities such as Los Angeles and San Diego, and by the end of the twentieth

century, regional and global trade had successfully breached the border. Initially the wall was a permeable gate facilitating the flow of goods and resources, but it became solid barrier when people attempted to travel through it. Currently, the railway infrastructure continues in its original place, and freight trains use it to transport natural gas across the border into the U.S. In San Diego, part of the railway was converted into an urban trolley system, and Tijuana plans to do the same with its track sections. A border crossing railway could integrate multimodal transportation into an international integrated network (McDonald 2015).

Similarly, airport infrastructure between the two cities also pierced the border. The San Diego Cross Border Express terminal (CBX) breached the border wall in 2015, allowing access to the Tijuana International Airport. Passengers from the United States traveling to Mexico or Latin America do not have to wait in long lines at the border or navigate Tijuana traffic on their way back to San Diego; they simply cross a pedestrian bridge to access the CBX parking lot. Infrastructure that spans the border is regarded as major international global ports, and is a part of official ports of entry (POE) between the United States and Mexico, where approximately 135,000 people cross daily.

The manufacturing sector assembles goods and ships them into the United States through the special customs areas of the POEs. However, the opportunity for Mexican citizens to cross the border is not reciprocal. United States immigration laws and procedures are extremely strict, and obtaining documentation to travel into the country is tedious. This is what Kate McDonald (2015) calls asymmetrical integration, “facilitated transportation along certain pathways while impeding traffic in others, the uneven consequences of global network building.”

In the aftermath of 9/11 and during the global pandemic beginning in 2020 cross-border laborers were subject to long delays, while goods were routed through special zones and citizens with global pass cards enjoyed preference. While there is a formality to binational

economic integration, there is an extreme informality in the commitment to ease flows for transnational citizens. As Norma Iglesias-Prieto (2011) reflects, “the high level of exchange and economic interdependence does not necessarily translate into levels of awareness, understanding acceptance or commitment towards the neighboring city and its inhabitants.”

Formal economic trade is, however, not the only form of market exchange associated with border infrastructure. At the POEs, pseudo-informal vendors take advantage of the long hours that cross-border commuters spend waiting in their vehicles. Small pushcarts that fit between lanes are designed to display all types of trinkets or prepared food on the go. While the design of these mobile units makes them appear informal, they are all part of a legitimate business that has permits to operate and pays taxes. In the same location, informal vendors, panhandlers, and religious charities form an economic community that the state has not been able to disband. This market represents the “fragility” of the border on the Mexican side, emphasizing that the interpretations and utility of the border as a socio-economic infrastructure is not entirely shaped by the state (Boyle and Rahman, 2019).

Border Paradoxical Effects

Analyzing urban maps and growth patterns of the last one hundred years, we see that Tijuana developed adjacent to the wall, a testimony of San Diego’s economic influence on the city. The border wall has always played a role in Tijuana’s urban imaginary; culturally the wall is a porous infrastructure that allows flows of people and ideas. These flows produce the many ways of inhabiting the border and appear in the city’s neighborhoods and socio-cultural manifestations. In 2006, along with Fiamma Montezemolo and Heriberto Yépez, we set out to produce *Here is Tijuana*, a 196-page book illustrating the city’s diverse literary and visual culture. It is this publication that formed the basis of a more “open” urban study approach of the city and its transformation associated with the border, urbanism,

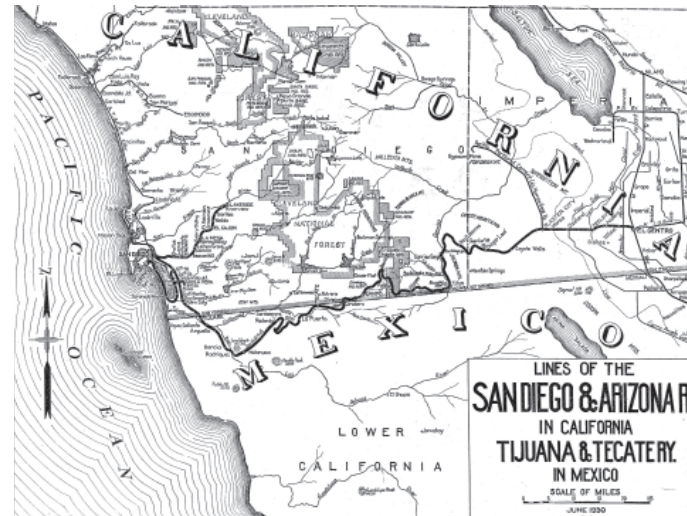


Image courtesy of sunnycv.com
Map of San Diego and Tijuana border.

culture, and architecture. As we explain in the introduction, “Tijuana, by de-codifying and re-codifying itself as sign and city, city-sign, functions in the daily adjustment of its space and multifarious or chaotic self-comprehension. Whoever wants to understand Tijuana must realize that its history, its meanings, and its forms are part of popular culture discussion of the city. Tijuana is a passion shared by its citizens, Tijuana is discussed while watching television and eating tacos; waiting in line to cross to the other side” (Fiamma Montezemolo 2006).

There is a distinct literary and artistic practice that has grown up along the border, sometimes as a representation of resistance or acceptance, initiating as independent projects via internet blogs to be absorbed by official institutions. Taken but never transformed (Ponce 2021).

Two notable local projects have embodied the paradoxical border aftereffects at the end of the twentieth century and the beginning of the twenty-first century. Operating from a framework of installation art, law, and

visual narrative, the work of Tijuana artist Marcos Ramirez “Erre” develops a critical view of the border wall as an object of power, specifically amid late capitalism effects in the global south. The Nortec electronic music collective fused folk music and urban images that created a distinct border sound.

Erre uses the wall in its literal material capacity across various projects, de-territorializing and re-creating it for different contexts across the globe. Throughout this work, narratives play a large role, especially those that illuminate the contradictions and inequities of political injustice that are prevalent in the borderlands. The installations are site-specific and engage the historical and contemporary narratives of place and context. An example is the ten-meter-high double-headed Trojan horse positioned at the San Ysidro Port of Entry over the metal markers defining the international boundary as part of the binational art initiative Insite 97. According to the artist, “the purpose of the project was to use the narrative symbolism of the Trojan horse to stimulate discussion about the border, invasion, cultural exchange, and dependency” (Installation Gallery 2019). In a different installation, Erre built a small house similar to the ones constructed informally around the city on the central plaza of the brutalist Tijuana Cultural Center designed by Mexico’s leading modernist architect Pedro Ramirez Vasquez. The modest house and the brutalist architecture referenced the liminal conditions between modernity and postmodernity, national perceptions of periphery and the realities of the urban global south at the onset of the twenty-first century. Borders can be paradoxical. Artists seldom escape the enticement of the border wall; it is an object and space waiting to be de-codified, as Saskia Sassen (2013) explains, “—an empty space that can be filled with memories. And it is where activists and artists find a space for their projects.”

The musical collective Nortec founded in the late 1990s by a group of Tijuana musicians, designers, and video artists. By employing the same paradox in what may appear to be an incompatible manner to Erre’s emphasis

on place and politics, Nortec operated as a collective. Influenced by the urban landscape shaped by NAFTA, globalization, and theories of hybridity. The techno beats of their drum machines and synthesizers are electronically fused with sounds of Mexican norteño country music. The project incorporated images and sounds of Tijuana’s urban landscape and the neighborhoods built by migrants who came to the borderland in search of a better life on either side of the fence. Nortec was an identity transaction between Tijuana’s youth and the paradoxical space of the U.S.-Mexico border. The differentiation between the site-specificity of Erre’s work and Nortec is that there are none; however, multiple sites exist for the latter. As a collective, their modus operandi permeated the spaces that would create opportunities for performances, critical mass of fans, and economic sustainability. This dialogic relationship with the city challenges the ontological meaning of social and economic creative space as a fixed location. The type of praxis by which Nor-Tec operated was oriented towards collaborations and horizontal assemblages. For Manuel Tironi (2010), “the result is a liquid spatiality, a network of spaces that moves and emerges or disappears without a bounded framing.” In Nortec, the city served as muse, stage, and infrastructure.

Happy Hybrids

The border has produced an area of historical, cultural, and economic overlap called borderlands (Herzog 1999). As a result, the border is no longer merely a physical boundary, but a movable one. Moreover, it extends to places where the effects and notions of identity are altered; the border is expanded past Tijuana-San Diego by developing a soft periphery resulting in a new cosmopolitanism (Dear 2003). We should therefore modify our view of borders as merely a limit or limitation. “In most cases, a border is simplified to a mechanism of division and exclusion, but rarely both simultaneously” (Sohn 2016). At first, the border was regarded as political infrastructure, a boundary, with dialectical opinions and theories forming the only

framework for understanding it.

By the end of the twentieth century, hybridity and reterritorialization theory became a fundamental component of how cultural symbols transcended the border and defined its postmodern urban landscape. Néstor García Canclini (1995) was its principal proponent, explains, "The recent installation of factories, modern hotels, cultural centers, and access to wide-ranging international information has made it into a modern, contradictory, cosmopolitan city with a strong definition of itself." Tijuana was a space considered the "biggest laboratory of postmodernity."

Heriberto Yépez critiqued the theory of the hybridity as a polarized "happy Hegelian synthesis" (Montezemolo 2009). Hybridity, according to Yépez (2020), eliminates the specter of colonialism and violence in the process of cultural fusion." During the 1990s, the notion of a cultural border between Mexico and the United States gave rise to the theory of the happy hybrid: this archive of aesthetic artifacts and cultural subjectivities illustrated the fusion between cultures, with a relaxation of tensions, frictions, faults, contradictions, inequities, fissures, and incompatibilities."

The question then arises: How can we study this urban mix-tape beyond the notion of hybridity? Do we refer to it as assemblages, thereby softening the violent and colonial process of the collision? Can we break the historiographical tendency of border studies for a teleological one? If a border is infrastructure, it cannot be neutral, and its history matters as a consequence of globalization and imperialism. Is it possible for border regions to serve as sites for renegotiating such histories (Schipper & Schot 2011)? Rather than Latour's anti-realist version, of "happy" assemblage where power is relocated to the back seat, we might explore Delanda's definition as alliances instead of filiations or relations of interiority, where the parts are non-constituted by the process that connects them (DeLanda 2016). A softer assemblage, where power structures still exist and consequentially engenders different practices. The question remains, however, as to whether or not



Photo by René Peralta



Photo by Marcos Ramirez and inSITE
Century 21, 1994. Installation by Marcos Ramirez "Erre."

contemporary models of our built environment are by definition post-critical in nature. The post-critical is heterological and serves as a resource for more critical rhetoric in the academic market. As Heriberto Yépez states, today, the critical exist outside the formal and traditional mechanism and appears in digital media. Everybody is a (post)critic (Yépez 2021).

The border identity has been shaped by film. *Sleep Dealer* is one of many movies depicting "futureless science fiction" in San Diego—Tijuana and containing tropes that display urban chaos that is binary and opposing. In spite of this, decades of cultural production and persistence have proven that the border and the spaces it encompasses are resiliently being recontextualized by their own inhabitants. In the near future, we may witness the emergence of new forms of sovereignty based on new forms of cultural convergence between humans and non-humans that emerge from the border.



Image Courtesy of www.last.fm
Nortec Collective poster by Vector Emotion.

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Interview w/ René Peralta

Telesis Vol. IV 2021

Luis Felipe Flores Garzon (F):

René, welcome to this interview. We are very pleased to have you here because we have been following your work, especially in relationship with “borders” and how this idea of borders is connected with the topic of our current volume of *Telesis*, *Habitation*.

We would like first of all to know a little bit about you. Where do you come from? How did you end up in Oklahoma?

René Peralta (R):

Thank you. And thanks to everyone for including me in Telesis. I am from the U.S.-Mexico border region between the cities of Tijuana and San Diego. It's strange because I usually consider myself from this region rather than from a specific city. However, I was born on the Mexican side and lived experiencing both cities. The first years of my architectural education were done in San Diego and later I went to study in London. I came back to the region and began working in San Diego. I started teaching as well. I've been teaching for a while now, mostly at Woodbury University. Its main campus is in LA, and it

is one of the oldest private universities in California. Woodbury also has an architecture school in San Diego, where I taught design-theory and directed a master's program in landscape urbanism for three years. I was an adjunct faculty at SCI Arc for a while, where I taught Latin American urbanism. I taught at UCLA as an invited professor and directed a Latin American urbanism summer studio with the University of Washington in St. Louis, which was really wonderful. Then I decided that I needed to move away from the border. To experience it or think about it from far away. When I was looking for somewhere to go, I came across the Herb Greene Fellowship at OU and applied. I got the fellowship, which began in 2019 and lasted through 2021.

F: You mentioned that you were actually the first Greene Fellow at OU?

R: Yes. So this is a recent fellowship, and I was the first recipient. My stay at OU has extended because of the COVID situation. As you know, I got here in 2019 and in 2020, COVID happened. A lot of the things that I wanted to do with the fellowship were affected. So I've extended my stay and that's why I'm still working here at OU, which I really enjoy. I was the first fellow, and now Marco Piscitelli is our second fellow. However, I still have my headquarters in Tijuana. My wife is living in Tijuana. I have two daughters. One finished her degree in industrial design from the Baja California State University and the other is about to finish film school at Cal State Northridge in Los Angeles.

F: When I was reading your essay for "Habitation," I couldn't stop thinking: what brought you to study this specific topic of borders? I guess it is because of your relationship with the place where you grew up and the tension between Mexico and the U.S. Is this what interests you in the concept of borders?

R: Well, you're right. I mean, it did start because I'm from there. Growing up, I was never far away from the border. I was always living near the border. It felt natural. When I went to study in London, I was exposed to many interesting ideas, methodologies, and theories of architecture. But when I returned I realized that the methods and ideas were not yet ready to be implemented in a city like Tijuana. I needed another lens to look at the city differently from a European view. I started to research the city and the border in a different way. My journey from an academic viewpoint of the border began. I began observing the ways in which both cities interacted. I studied the relationship between culture, architecture and urbanism. Then I began studying the shared environmental issues between both cities. I was learning from friends and colleagues, about the conceptual views of what makes the border work and what doesn't. What constitutes a border today?

F: When we talk about borders, we are also talking about habitation or habitats. A habitat is an area which contains all the resources a given species requires to survive. For this reason, one can assume habitats have edges. Some of them are more visible than others or overlapped. How do the edges of habitats differ from the borders drawn by governments?

R: Well, first of all, connecting this concept of the border into the theme of habitation, that the journal is considering, was really important. Sometimes we think of borders as just a political line on a map or a threshold that you cross back and forth; however, this border has actually created a space. It has created a city and its culture, along with an environment that you can inhabit. Yet the border also crossed or demarcated spaces that were already there, including Indigenous territories. People who inhabited the

region extensively from the ocean to the mountains and from north to south of, what we now consider, the border. Then there is the pristine environment that is also divided by the border. Watersheds that are part of the shared environmental system. Thirty percent of the shared watershed is in the United States (San Diego) and Seventy percent of it is in Mexico (Tijuana). It's a bisected coastal ecology and geography that is politicized. Tijuana is in that watershed. Therefore, most of the city is built on canyons and valleys. The urbanization hasn't been kind to the existing environmental systems. We also have rivers that cross the border going back and forth creating crossborder waterways and binational water management challenges. Therefore, the space of the border expands and contracts depending on the different scales that you look at and they all mix together: political systems, natural systems, urban systems, economic systems, and of course, people.

F: The movie *Sleep Dealer* by Alex Rivera that you discuss in your essay depicts a future where people will fight for water if they are not already doing so, and how these natural resources that should be available for all become off-limits depending on their location relative to, or relationship with, the border. You state in your essay the different relationships borders have with trade goods and people. In short, borders are often more porous for trade goods as opposed to people who are often prohibited from crossing. Since a habitat contains all the resources a given species requires to survive, what side effects might this disconnect between people and the resources they rely on have on habitat and community? Have humans transcended habitation?

R: That's a great question. There's something about this, a kind of transcendence, an artificiality at play. Once

the border was introduced at the end of the nineteenth century, the two cities became urban centers really quickly for different reasons. San Diego became an important naval base. There was a lot of terraforming involved to have one of the biggest navy fleets in the pacific. Therefore, San Diego always grew, and stayed close to the water. Tijuana never really acknowledged its coast until fifty or sixty years later. The city developed next to the border because its economic prosperity depended on the San Diego economy, more than on the Mexican one. Then by the 1950s border cities began growing quickly, and Mexico made, or tried to make, its border a productive region. Border cities became manufacturing hubs because we had the biggest market in the world next to us. It became an important trade corridor. Products are still being assembled and fabricated on the Mexican side and sold on the U.S. side. Today, the corridor has expanded with global companies producing goods for everybody on the planet. But the local conditions come back to remind us that we're sharing an ecosystem, that we're sharing a geography. Also, it's an interesting place because it's a semi-arid region. We are living in the desert. This of course affects the region's economy because it requires importing a lot of resources. For instance, the water for the city of Tijuana does not come from the ground. It gets piped all the way from the Colorado River. The Colorado River not only provides water to Tijuana, but there are many cities in the United States which also get water from the Colorado River, including San Diego and parts of Los Angeles. Therefore, millions and millions of people use the water from that one source. A lot of things in this region come from afar. Even people, right? People who migrate to this area, looking for life-changing opportunities.

F: Similar to Memo in the movie, right?

R: Just like in *Sleep Dealer*. Exactly.

F: I must ask, you're an architect and you have knowledge of urban planning, but when you approach the idea of the border, you go beyond those limits. You reference different types of art mediums including sculpture, like the trojan horse by Marcos Ramirez, and the film by Rivera, or even Nortec, a group of musicians. So I'm wondering, what brings you to go beyond the limits of architecture to understand the border? What caused you to choose exactly those precedents to understand this topic?

R: I think it's part of who I am and the way I experienced the border. For instance, Marcos Ramirez is a good friend of mine. I've known him most of his career. I've seen him become the artist that he is now and I've spoken to him about these issues. We've talked about what the city means in his work. The Nortec guys are my age. They weave and pull a lot of their imagery and ideas from the city into their music. I also have friends who are writers, critical of the border, trying to create a particular voice from this part of Mexico, with a particular writing style. As an architect, I think you have to understand that the city is a coalescence of different areas of knowledge. I don't think we're going to find one line manifestos about cities any more. We need to look at cities from the point of view of culture, art, music, human rights, economy, feminism, etc. Because that's how the city is produced. I've always been interested in worldviews, rather than in specific topics. I operate more as a cultural critic, from within the architecture and urbanism discipline. But to do that, I really have to try to understand all the pieces. What I've tried to do in my essay is formulate a story about bodies and technology. And define what are the specificities about the border. The basic question is, "Is the border a place where cultures just come

together or a place where there is a mix, but both sides keep their identity?" This question is important to me in understanding the place where I live, where I grew up. It might not be relevant in another city. It might not be as relevant in other border regions, but I believe Tijuana has helped me to understand how border regions operate. This is why I've chosen to incorporate art and cultural precedents and I think in the end it makes the essay fun to read.

F: I was not aware of these groups, but the more I read, the more I wanted to go and check them out. Nortec, for example, is a really interesting group because it's like techno plus local sounds from local regions of the city. So I can feel this combination, or input, of the North American culture, but also strong feelings of what Tijuana means to them. However, I am still wondering, what type of music are they trying to create?

R: Their sounds point to the concept of hybridization. Hybridity was really important in the 1990s as a way to describe border regions and border culture. Nortec is a good example of how something hybridizes and of actors, like in Latour, and their use of space to inhabit the border. It is interesting how these musicians use the urban environment, its images, symbols, and culture when creating their music, their art. However, there's not a specific sector in the city where you would say "this is the Nortec space. This is where it happened," right? No, it happens everywhere. It happened downtown as in the suburbs. They disappear and reorganize and make a comeback. It's really interesting how they use the city and how the city allows them to be ephemeral and operate in an expedient way. I find those things fascinating.

F: Talking about this brings to mind Manuel Tironi, who talks about the concept of liquid spatiality as

"a network of spaces that moves and emerges or disappears without a bounded framing." Can you tell us a little more about the relationship between the music collective Nor-Tec and the concept of liquid spatiality experienced at the border between Tijuana and San Diego?

R: Nortec is a classic example of what Tironi is talking about. He even writes about an electronic music movement in Chile, which is similar to the Nortec collective. However, Nortec began with young guys who were operating from their houses. They had their computers and used the internet to learn how to produce music at an intimate level. The border was a very important aspect because they would travel across to San Diego, buy records, go to concerts, and talk to other musicians, thus creating a network. Once their network was in place, it became a collective. This collective included musicians, graphic artists, and video artists spread around the city. They would come together and assemble. They became an "assemblage" that came together when they needed to play in a venue, produce a record, or just make music. They assembled in different places: somebody's home, a bar, different parts of the city, etc. That is an example of liquid spatiality. It's interesting because they are not fixed to a physical spatial location. We often think of creative spaces in the city as a location. When we read about gentrification, we understand that artists come into bleak urban spaces and eventually are displaced because they made that space really valuable. But in the Nortec case, that did not happen; there wasn't a reference point. They were all over the place. I think Tijuana operates in that way. Not only in culture but also through its economy. In Latin America, you have many of these movable or liquid systems that appear and disappear depending on different situations. In my essay, I also write about informal commerce in the border regions. People who get up in

the morning, or late in the evening, and go to sell stuff at the border point of entry. Their economic success is based on the time it takes other people to cross the border. So the longer the wait, there's more cars, meaning they're going to sell more stuff. They set up along the vehicle lanes in a way that allows them to reach their customers. This isn't the kind of thing that is regulated in spatial terms by anyone. I mean, it's regulated by supply and demand, but it's not regulated by the government. It's very liquid.

F: In Spanish we call them *vendedores informales*. You refer to them in your essay as "pseudo informal vendors." You mentioned that they are waiting in lines. This happens everywhere in the border with the U.S. but also in South America. I'm wondering why these people cannot assemble in a park or similar concentrated area where they operate more urbanistically. Do you think it is because of the presence of the border and its connection points that causes them to operate in this way?

R: Yeah, I think the network is already set up for them.

F: You cannot push them away from that, I guess, right?

R: No, you cannot disrupt it or move them. Then it won't work, right? Let's say a person goes to the border to sell burritos in a cooler, right? The day before, they make all the burritos to sell the following morning to commuters crossing the border to work in San Diego. They already have the people who cook the meat, make the tortillas, and help take the product to the border. They have a spot to set up in the morning, versus in the afternoon. All the logistics are already figured out by the system, the network itself. Let's say they sell about five-hundred burritos every day at

a dollar each. Do the math, that's \$500 a day \$2,500 a week. However, the system is still "pseudo formal," like I write in my essay, because the only thing that the government can do is approach them and say, "look, I know you come here in the morning to sell X. All I need is for you to register and pay your taxes." Eventually they end up becoming semiformal economies. They participate in the economy somehow and are able to receive benefits like medical care because they are paying into the system. However, their way of operating is "informal".

F: Do you think an investment made by the state will be required to reduce the border's fragility? What might these investments entail?

R: In the 1950s, the Mexican government tried to create a robust border infrastructure, however, it was for goods and not for people. That's where the fragility lies. The San Diego-Tijuana border is one of the most crossed borders in the world, but most of those crossings are for trade or by the same actors. For instance, there's a statistic that 50 percent of the population of Tijuana cannot cross the border. The border is a paradox. The San Diego-Tijuana border is one of the most crossed borders in the world, but half of the population cannot cross. That contributes to the fragility of the border. How do you fix that? I don't know. It's something that needs to be really rethought. That includes not only political policy, economic policy, but also urban planning. The border is planned and designed for cars and goods to go across efficiently, but it is not very efficient for the movement of people.

F: Talking about this fragility and architecture, could you please elaborate on the ways in which architecture may play a role in reversing the fragility of the border? Will architecture, at best, join the physical infrastructure, such as the border

wall itself, as palimpsest acted upon in one's pursuit of re-codifying the borderlands?

R: I am a person who was born on the border. I am a border citizen, like I said at the beginning. Therefore, I look at the border in a very different way. However, I realize that there are issues, some are dumb political issues like making another barrier, right? Yet, I believe the differences between both sides make this border work. If we wanted to create a post-border space like my friend Michael Dear, a geographer, implies; I think those differences might disappear. However, I don't think that will ever happen but I imagine that would be the result of such a strategy. It's the differences that really make this place real and interesting. When I talk about differences, I'm referring to cultural differences, economic differences that make this space function. It's another way of looking at borders, entities interact yet they keep their identity, right? As I mentioned earlier, it's an assemblage. In a sense, it's like a flower and a bee. They come together to do a certain task, to pollinate and feed off each other. When they separate, the flower is still a flower and the bee is still a bee. These two cities touch and share commonalities, but the border allows them to keep their identities. I find that important. What is the future of borders like, I don't know. That's what I was bringing to the discussion in the essay. However I don't think I'm going to see, at least in my lifetime, a post-border condition.

F: When we were talking before about this concept of liquid spatiality, I was reminded of all the technology we have now, such as virtual reality. This also brings to mind Rivera's movie. How will borders work, or will they evolve, in a virtual world when you are somehow interconnected? I'm wondering if you think there may be a virtual border of some kind?

R: Yes. I think it's going to segregate people who cross the border physically and those who cross the border in a virtual way. For instance, a few years ago I worked on a project for Hyperloop. This transportation technology uses vacuum tubes to push a train on magnetic rails at very high speeds. We made a proposal to Hyperloop One, now Virgin Hyperloop, to design a system with this technology to cross the border. It traveled from Los Angeles, across to Tijuana, and all the way down to the port of Ensenada, which is about two hours from Tijuana. The idea was to transport goods and people across the border quickly and in a much more environmentally responsible way. Because it would have solar powered linear motors and it would not emit greenhouse gasses.

When we were thinking about it, we were asking, in the near future who is going to continue crossing the border? We realized that there is a population, composed mostly of working-class citizens, who would continue to cross regularly, if not every day. No matter how virtual our existence becomes, there will still be a need for workers who go at night and clean office buildings and hotels, etc. I have family members in Tijuana who cross the border at night and are part of a crew that clean entire office buildings. I'm sure that day office workers in those buildings don't realize how that happens. They are bodies crossing the border at night to sustain the global economy. Therefore those ways of habitating and physically crossing the border are still going to happen. Even if other sectors of society use virtual ways of communicating, border night workers are still going to be needed.

F: I understand, René. I'd like to quote Memo from the movie in Spanish because the meaning will remain intact. In the middle of the movie, when Memo is talking with the main actress, he says, "Me están

robando la energía y mandándola lejos. Lo que le pasó al río me estaba pasando a mí. Yo no sé lo que estoy haciendo. Trabajo en un lugar que nunca veré. Veo a mi familia y no la puedo tocar." This happens when he moves from his *natal*, or from his hometown, to the border, to Tijuana. So first of all, think about this when answering the following question: when discussing the Nortec, you mentioned migrants come to the borderlands in search of a better life on either side of the fence. Is a border a land of opportunity? If so, what unique opportunities arise that are absent elsewhere? What are the side effects of these interconnected lands of opportunities?

R: The opportunity I find most intriguing is the opportunity of starting over. There's a fundamental change in why people migrate to the border region. First of all, a few decades ago, people were coming to the border because they were looking for that American dream. Therefore, people would migrate to the city happily because they knew if they crossed the border, or stayed in Tijuana, their life was going to improve. That sentiment influenced immigration for quite awhile because of the unfortunate economic conditions in the countries of origin. However, the whole thing shifted. Later, people were coming to the border to escape violence. Rather than migrating to the border on their own terms, they were forced to escape violence.

F: From the interior of Mexico?

R: Yes, from the interior of Mexico and beyond. People would come to the shelters sad and depressed. They felt lucky to get out. Tijuana has migrants from the interior of Mexico, and from South America, including the Caribbean, and currently from the Ukraine who are trying to find asylum in the U.S. People are

fleeing their countries. Interestingly, it used to be that families would often cross the border together. Now it's only one family member. For instance in a four-unit family, husband, wife, and kids, the husband crosses the border and goes to work in a kitchen somewhere in Chicago. Or come to teach architecture in Oklahoma! Anyway, he crosses the border but cannot cross back because his migratory situation is not legal yet. The family is separated. So the member who was able to cross travels from Chicago to San Diego and tries to get as close to the border as physically as possible. The rest of the family travels to that same point at the other side of the border. They meet in a neighborhood of Tijuana that is very well known for these encounters. They meet and talk for hours looking at each other through the border fence without physical contact. This is common because immigration policies started to separate families.

F: It is reasonable to think of Memo as a trans-border citizen, or someone who lives across the borders between two or more nation states. It sounds as though the border is most frequented by transborder citizens, right? So how might border infrastructure serve as a refuge for these migratory citizens? Because right now it seems they don't have the support they need when they arrive at the frontier between both nations, right?

R: I could say that the border between San Diego and Tijuana is a territory of migrants. A city made by migrants. However, we still don't have the infrastructure to offer certainty or a decent existence to migrants. If you have money, you can probably live in a great place at the border and your chances are better of getting a visa to cross the border and participate in life as a cross-border citizen. But if you're poor, that is not going to happen and you're going to struggle. Systems are not in place to help

people in those situations and so they end up clustering together in different parts of the city to help one another. Recently there were a couple of thousand Haitian immigrants that arrived in the city and camped together. They were in tarps, in small camping structures next to the border. However, they created a community and an impromptu village because nobody told them where to go and relocate to a safer place. Later, the government did try to deal with it, but it was just a late response to the situation. The city should be ready for these scenarios because they are going to occur more frequently.

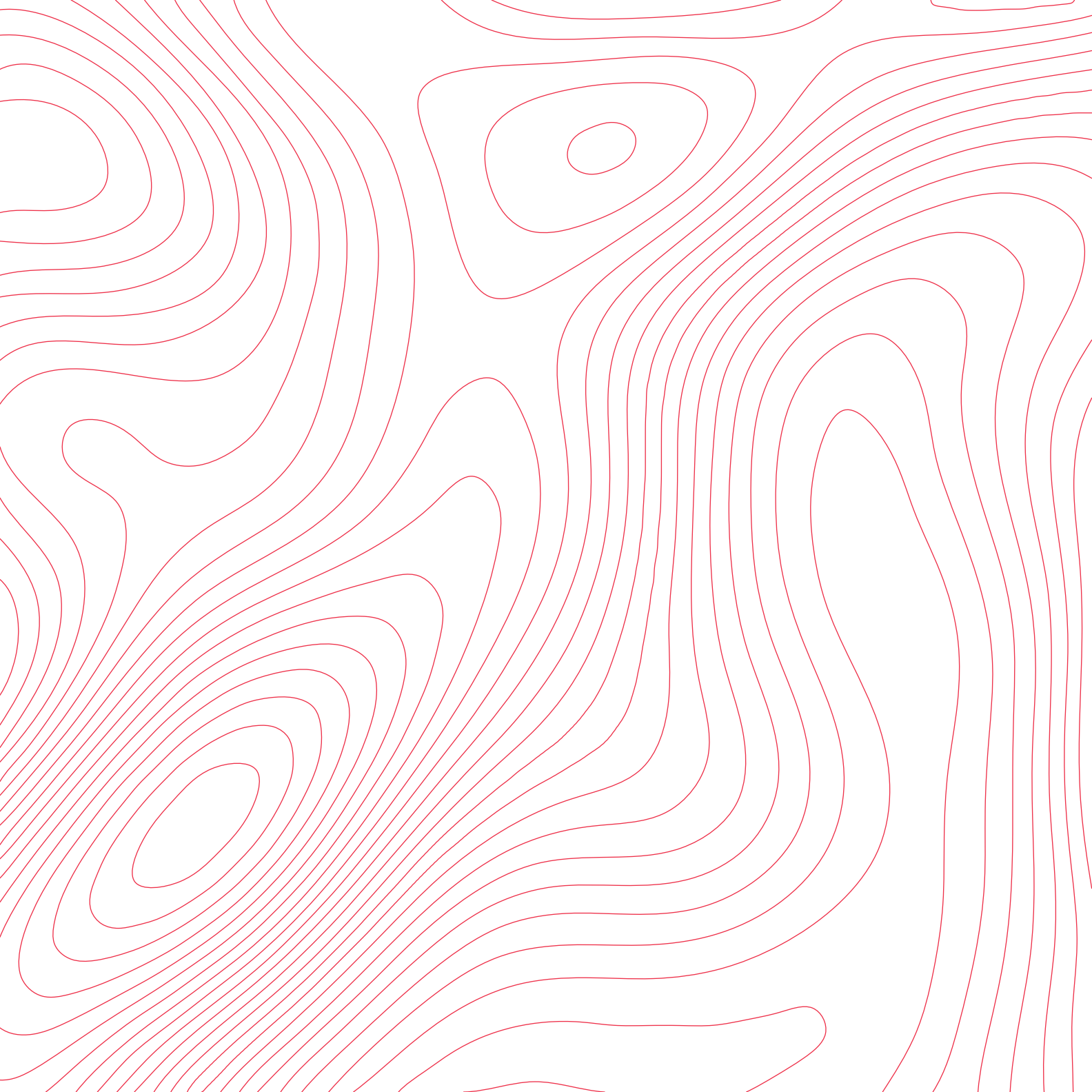
F: As a way to conclude this very interesting interview, I would like to ask you, do you have any other suggestions or comments to make about this idea of border and inhabitation?

R: What I'd suggest is that anybody interested in this topic should research the literature on border culture and urbanism. The U.S.-Mexico border is one of the most studied borders in the world — in particular the border between San Diego and Tijuana. It's the only urban border from the two sides. Maybe El Paso and Juárez are similar to San Diego and Tijuana in a spatial way. This urban border is an interesting space, first of all, because of its shared urban history. Second, there's a small Mexican city next to the fifth-largest economy in the world. California alone is richer than many countries in South America and Central America. There is a disparity there. Again, it's the differences between the two places that make the situation so interesting. There is a lot of literature and theories on the border. However, there isn't a holistic view of the border; you have to navigate different perspectives and concepts that include migratory realities, bi-national policies, environmental issues, urban and architectural development. As an architect, what I always tell people when I tour them around the city

is, "We're not going to go see a particular building." I mean, as an architect when you take a tour in a city, you want to go see buildings so-and-so. You get in a car and then you see a building and then you get back in the car again to move on to the next building. Well, in Tijuana, you don't see buildings. You see the in-between. It's the journey across the city that's really interesting. That is where you get to see how the city operates, how the architecture is part of the daily economic and cultural mood of the city. You also notice interesting combinations of architectural forms and structures. As architects, we need a more sophisticated lens and perspective to understand the border urbanism.

F: Thank you so much, René. This has been a very, very interesting and unique experience talking with you. I came to know your work recently and I have been amazingly surprised by the way you not only understand space, but cultures in general. Also how architecture actually can create better spaces for people if we go beyond the limits of the physical space, focusing on how social interactions happen within the space. I am honored to tell this audience that we have been talking with René Peralta, a Herb Greene Teaching Fellow at the University of Oklahoma Gibb's College of Architecture. We hope you extend your stay even longer because it is really nice work that you're doing, in different nations, not only in the U.S.

R: Yes, and thank you. OU has encouraged me in many ways to continue my research.





Telesis: Habitation Vol. IV 2021

Gibbs College of Architecture

The University of Oklahoma



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