

Three Continents Studio: From the Bayou to the Biennale

By Jackson Fox



An aerial perspective of the Three Continents Studio Exhibition on display in the Gerald D. Hines College of Architecture at the University of Houston.

Photo courtesy of Peter Zweig.

*F*rom the Gulf of Mexico to the heart of downtown, the Houston Ship Channel has proved to be a vital piece of the city's growth for one hundred years. Through history, we can trace how Houston's economic ethos has transformed a narrow, winding bayou into an international epicenter of import. Home to nearly 200 international companies and petrochemical plants, the ship channel has literally cemented its place in the city's past, present, and foreseeable future. How is it possible that the Houston Ship Channel, stretching more than fifty-two miles long, generating more than one million jobs, connecting us so crucially to the regional, national, and global economy, remains so detached from our local culture?¹

In the wake of recent water-related disasters around the globe, the Gerald D. Hines College of Architecture at the University of Houston is spearheading an international research effort to explore and elevate these critical questions on a global stage. This consortium, entitled “Three Continents Studio: Living in Dynamic Equilibrium,” is led by Houston architect and educator, Peter Zweig. Together, the students and faculty of Tulane University in New Orleans, the University of Buenos Aires in Argentina, the Delft University of Technology in the Netherlands, and architecture students at the University of Houston embarked on an unprecedented exploration to analyze the urban condition in each of their respective coastal cities. Professor Zweig emphasized the importance of “building a concept around [water and flooding]” to channel the efforts of each school into one, cohesive story.² Though each city brings unique and local challenges to the forefront, they all share a long-established history of systematic flooding issues. As these four schools on three continents combine research, exchange ideas, and conceptualize solutions, they demonstrate innovative approaches to city planning and showcase cooperative values, symbolic and indispensable to architecture in the twenty-first century.

On the outskirts of the University of Houston, in a cramped, cluttered studio on the top floor of the architecture building, the students of Peter Zweig’s Three Continents research program meet daily to discuss the past, present, and perhaps most important, the future of Houston. The studio is littered with city maps, drawings, charts, and models strewn across every available surface. Centered on the wall is a single, circular port window. The only view out, it looks north, framing a panoramic view of downtown Houston and the surrounding urban landscape.

The signature contours of our high-rise cityscape, like the Bank of America Building, Chase Tower, Heritage Center, Pennzoil Place, Wells Fargo Plaza, and the George R. Brown Convention Center, define the spirit of the city’s economic vitality and perseverance—a manifestation built on its entrepreneurial charisma. Gazing out that window, from left to right (west to east), the crowning peaks of downtown descend in scale, becoming less familiar and less significant. The panning view eventually terminates at the low, flat roofs of indiscriminate, box-like buildings that become a collage of grays and browns. This is the East End. Wedged between Houston’s central business district and the ship channel, the East End has been shaped by the city’s rise and decline in an industrial era, a candid chapter in Houston’s history of expansive growth.

Just as sprawling and cumbersome as it appears, Houston is always in a state of transition. From the constant construction to the culture, the city refuses to stop growing, morphing, and evolving. As the city periphery continues to stretch, swallowing up outlying suburbs, Houston’s indigenous wetlands become increasingly threatened. An ecological heart for Houston, the bayou reveals a compelling narrative of how and why Houston, in a long-established heritage of opportunism, has repeatedly cut, shoaled, and dredged the edges of its most celebrated waterway, Buffalo Bayou.

The founding of Houston along Buffalo Bayou is a single



Buffalo Bayou plays an enriching role in Houston’s history not only through its transformation into the ship channel, but also through its social and cultural heritage exemplified by this African American baptism in 1901.

Photo courtesy of Special Collections, M. D. Anderson Library, University of Houston.

piece of a larger puzzle, falling subject to a broader history of settlement on regional rivers of the Gulf of Mexico. The reoccurring conflict between man’s economic drive and nature’s unpredictability has become a local tradition.

Before the ship channel, before Houston, before the Allen Brothers, and even before European settlers descended on the Gulf Coast, the bayous of Southeast Texas were the territory of Native Americans. Tribes like Orcoquiza (or Akokisa) and Bidais roamed the banks of creeks, streams, bayous, and rivers in the region.³

During the eighteenth century, in an attempt to establish a port, Spanish explorers spent decades scouting and mapping a navigable water route inland from the Gulf, trying the Sabine, Neches, Colorado, and Red Rivers. The early nineteenth century settlers of Austin Colony thrived on the fluvial plains of the Brazos River.⁴ Booming agricultural success of cash crops like cotton and sugar, as early as 1825, warranted an immediate commercial interest in establishing a water transportation route in and out of the Brazos River Valley.⁵ Many attempts to build a reliable trade route inland from the Gulf Coast failed in the wake of inconsistent water elevations and the unpredictable flooding of coastal rivers. Nevertheless, establishing a port along Texas’s coast was an experimental enterprise, gaining economic momentum.

Indigenous to Industrial: The Bayou in Dual Contexts

To design a new, compelling portrait of the city, Professor Zweig and his students set out to explore Houston’s waterways for themselves. To gain a more wholesome understanding of Buffalo Bayou’s significance to the city, students sought to experience the bayou from two polar perspectives—a boat tour of the Houston Ship Channel chauffeured by the Port of Houston Authority and a guided boat tour down Buffalo Bayou by the Buffalo Bayou Partnership. These two contexts of the bayou, just a few miles apart, evoke two starkly contrasting experiences and perceptions of Houston’s relationship with the bayou and nature.

From the water, the Houston Ship Channel tells a phenomenal story. Gliding down the center of the channel, the skyline is completely absent and it is surreal to think you are still within the city limits. Like ruinous artifacts, old storage warehouses and office parks pepper the banks of the bayou in the East End. Some stand strong in an aura of timeless antiquity, hailing an age of brute industrial know-how in a young, churning American city. Others less so. Broken glass, dilapidated roofs, crumbling bricks—some structures act more like gravestones in a post-industrial cemetery. The export grain elevator on Clinton Drive, a testament to Houston's industrial prosperity in the early twentieth century, straddles the line between a historic jewel and junk. Built in 1926 to supplement a growing demand, the grain elevator became the cornerstone public project of the newly formed Port Commission.⁶ It sits opposite the Turning Basin, inherently dominating the drab skyline with its towering height.

As the tour moves farther east, the ship channel becomes increasingly animated with more ships, more buildings, and more people. It is an industrial corridor almost reminiscent of some hometown shopping center or marketplace but blown up in scale. Freighters and tankers, like cars, are tugged in and out of parallel parking spots while workers wave from the docked ships and crane towers—a surprisingly human process. Concrete wharfs and terminals line each side of the bayou, elevated to avoid the potential for flooding. The newer petrochemical plants reach out towards the water from mazes of tangled ducts, spherical silos, and spiraling smokestacks. The inherent efficiency engineered into these impressive structures transcends their sheer utility as refineries. From an architectural perspective, they are beautifully complex.

At no point during the tour does the ship channel break its industrial prose. Very little “natural” is left at its edges. As Houston grows, its bayous are dredged, widened, shoaled, and paved for more speculation, more freight tonnage, larger ships, and more money. Self-regulation, obsolete equipment, and haphazard procedures fostered decades of environmental neglect.⁷ With the consideration of the natural environment virtually absent, the edges of the ship channel today are a verse of Houston's resounding mantra, where the entrepreneurial spirit of the private sector overshadows the indigenous nature.⁸

Touring Buffalo Bayou in the midst of downtown describes a completely different experience. Pushing off near Allen's Landing, there is an innate connection to the past. Like speculators themselves, Zweig and his students search for connections, decode relationships, and identify opportunities that will unlock the potential of Buffalo Bayou for their own projects. Sloping down, below the bustling activity of downtown, the surface of the bayou is quiet, insulated from the whirring drone of traffic above. As the water winds through the west end of the city, it slides at a smooth, gentle pace. The harsh slopes on either side are layered in lush, vibrant vegetation that blur the line between land and water.

When the tour moves into downtown, it becomes increasingly difficult to know exactly where you are. Allowing only a series of fleeting, fragmented glimpses of the skyline, the bayou leads you down a snaking path of unpredictable closeness with the city. As the boat carefully maneuvers under low-hanging branches or weaves around mazes of columns under the highways, the city and nature meet in odd ways. The old, antiquated Union Pacific rail lines, overgrown and outdated, spring to life in the rippling wake

Passengers who make their way down the Houston Ship Channel on the tour boat Sam Houston have a chance to observe firsthand the industrial facilities and maritime interests that drive Houston's economy.

Photo by PA2 James Dillard, courtesy of the U.S. Coast Guard.





The author created many maps for the Three Continents Project to show the impact of development on the waterway. This building footprint of Houston, shown in gray, is a map derived from information by the Houston Geographic Information Management System.

Image courtesy of author.

of the water. The edges of Buffalo Bayou here are more riparian, undulating, and natural than the rigid grid of streets and buildings above.

The bayou in this context owes much of its preserved beauty to Terry Hershey, a local icon of environmental activism. Since the forties, in an effort to mitigate flooding and protect the economic investments of our energy industry, the Army Corps of Engineers continually paved portions of Houston's bayou network, destroying much of the vegetation and wildlife below and above the water's surface.⁹ Throughout the sixties, Hershey led the Buffalo Bayou Preservation Association in an unprecedented effort to halt the paving of Houston's bayous. Directing the Save Buffalo Bayou Campaign, from its grass roots to the state congress, Hershey blazed a trail through the political processes that small environmental advocacy groups still use today.¹⁰

Both tours of Buffalo Bayou reveal remarkably polar attitudes of the city. From the water, they both seem to separate you from the expectations of Houston. The hard, utilitarian industrial-scape of the ship channel affirms a history rooted deep in economic vigor and industrial strength. The concrete wharfs, callous with rusty lines from surging waters, command the water's edge. Mere miles upstream, the Buffalo Bayou reverts in part back to its indigenous beginnings, flowing in a sly, natural rhythm. Dwarfed by the scale of downtown high rises, it slithers quietly in from the west, largely overlooked and underestimated by most Houstonians—but not all. Since its renovation in 2010, Buffalo Bayou is being reenergized with recreational trails and public parks, reengaging people with the water, reconnecting a tradition long since detached.¹¹

Experiential to Empirical: Connecting the Dots

To bring the story of Buffalo Bayou to the world, Peter Zweig orchestrated the efforts of his senior architecture

students, professional colleagues, and industry experts with local businesses, artists, and fabricators. Through months of researching, mapping, and modeling, the studio developed an exhibition strategy to translate their experiences on the bayou into something graphic, measurable, and empirical. Using a narrative of maps, diagrams, photographs, and models, the students began to tell *their* story of Houston rather than *the* story of Houston.

Historic cartographies, topographic surveys, demographic studies, public health reports—the scope of research formed a new collage of issues far beyond the discipline of architecture, an ecological atlas synthesized from the physical and emotional experiences with the city.¹² Collecting information already gathered by local, state, and national government agencies, students took existing, documented data and re-layered it in new, innovative ways, revealing complex relationships between geography, flood control, population density, ethnicity, income, commodity flow, toxic superfunds, public health, and infrastructure. Sources like Rice University's Kinder Institute for Urban Research, the Houston Geographic Information Management System, Harris County Flood Control District, and Department of the Interior provide the public with access to isolated issues, but the Three Continents Studio is layering these maps, stratifying these critical issues, and redrawing Houston, scripting a new narrative based on research and their own experiences of Buffalo Bayou.

The silhouette of Buffalo Bayou, matte black on a white background became the flag of the Three Continents Studio and the template from which they show most of the presentation research. Maps that integrate hard and soft science—empirical and experiential data—symbolize a new understanding of Houston in the twenty-first century where it is the quality not quantity of place that holds our prosperous future.



The tour along Buffalo Bayou provides a quiet surrounding, contrasting it with the loud noises of industry at the nearby Port of Houston.

Photo by Tom Fox/SWA Group courtesy of the Buffalo Bayou Partnership.

From Analysis to Architecture

In addition to the research, each student of the Three Continents Studio produced a small project, an architectural proposal for Houston that would turn something “negative” about Buffalo Bayou into a “positive.” Students showcased their proposals on a gleaming, twenty-two-foot-long model, the centerpiece of their exhibition. One by one they tackled issues of run-off, adaptive re-use, urban parks, pedestrian bridges, water and air quality, community farming, even a prison constructed out of storage containers.

Recently, Zweig led a small team of students to Venice, Italy, to present their exhibition *Risky Habit[at]* to the world at the 2014 Architectural Biennale. Displayed in a fifteenth-century palazzo along the Grand Canal, the students curated their proposals along Buffalo Bayou to an international audience of architects and engineers. Since its debut,

the project, which remained on display until November 2014, has received the 2014 Global Art Affairs Foundation Prize. For the students in the Three Continents program, this project has undoubtedly changed their outlook, not only about architecture, but the research and its fundamental role within all design. These students, all in their early twenties, are breathing an inspiring optimism into their city, focused on designing a future balanced between private prosperity and ecological rejuvenation as they carve their own ways in the professional world.

Jackson Fox is a graduate of the Gerald D. Hines College of Architecture at the University of Houston. He is pursuing a career in architectural research and environmental design and continues to work with students and faculty from the Three Continents program.

University of Houston faculty and students from the Gerald D. Hines College of Architecture on opening night of the Risky Habit[at] exhibition in Venice. Pictured left to right: Suresh Khator, Peter Zweig, Jackson Fox, Lacey Richter, Wells Barber, Houston developer Gerald D. Hines, David Regone, UH President Renu Khator, Sam Goulas, Dean Patricia Oliver, Michael Rotondi.

Photo courtesy of author.

