URBANbuild: Architectural Networks of Real Urbanism

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Abstract

Tulane URBANbuild is a comprehensive community outreach program that the author initiated to provide urban design and innovative, sustainable prototypical housing solutions to actively support the rehabilitation of New Orleans' neighborhoods subject to damage in the aftermath of Hurricane Katrina and to revitalize areas of the city historically dominated by blight and abandonment. This article describes the issues and challenges of promoting real urban intervention within this context and elaborates the research agenda and complex taxonomy of urban and architectural tactics generated within this program. Field, network, and topographic design strategies constitute the generative and methodological terrain for proposed urban transformations within these neighborhoods. These strategies focus on promoting the densification, diversity, and environmental sustainability of critical core urban territories within the city by recuperating and consolidating their eroded urban tissue, while advancing innovative proposals for new forms of aggregated housing, infrastructural mixed-use environments, and multiscaled, site-specific urban interventions.

Architectural Speculations on Real Urbanism

The terrain between research and practice and between design speculation and reality is difficult to traverse. In New Orleans, the reality of this terrain became known through the magnitude of devastation and the extent of the need for recovery after Hurricane Katrina. This reality, however, is by definition not limited to the immediacy of the physical and material world that makes up this city—its "artifacture." This reality also includes the limits of knowledge, experience, and imagination as they relate to the boundaries of physical objects.

This reality is in fact paradoxically immaterial, because it consists of cultural representations that constitute a collective reality that dominates individuals, communities, and cities. Collective reali-

ties are the dominant myths and sets of representations shared by a group through which the "real" is approached, understood, and reinstantiated.[1]

New Orleans certainly has its own local reality. This statement is a simplification, however, because this city is not one reality but a composite of many local realities, each with its own historical and cultural lexicon, and each with a set of rules and values defining the framework for its urban reality and the terms of its local knowledge and experience.

Since Hurricane Katrina made landfall in this city, the representations of these realities are continuously being rewritten—both from within and without—representations that either reaffirm or challenge the status quo and that either reduce or expand the possibilities for this city's future. Now, post-Hurricane Katrina, the *urban realities* of New Orleans in many ways have become substantially limited—yet, because of the storm's environmental, socioeconomic, and political outcomes—the city's *real urbanism*, in every sense of the expression, has not.

Real urbanism may be happening on two very different fronts in New Orleans. One front is embodied in the real events—the urban realities—that daily inject life back into this city and that have been operating with all means possible since the hurricane; the other front constitutes a very different idea of real urbanism—urban propositions currently outside what we believe to be the limits of possibility in relation to the city's rebuilding. As a physical crisis, the hurricane produced enormous fissures in the day-to-day realities of the citizens of New Orleans, exposing forms of environmental and economic realities that had become hidden either deep within or far beyond its urban fabric. The disaster also revealed a form of the real that might hold a different promise for this city—the real from which all future urbanisms for this city might emerge. The necessity to rebuild has, in a sense, shifted the trajectory of the city's urban and architectural practices, which traditionally had remained blind to environmental vulnerability and consumption, infrastructural need, urban blight, and the growing concentrations of poverty within its inner city core, toward something that can challenge such practices and promote a better urban future based on the principles of sustainability, density, diversity, and connectivity.

This idea of the real is at once highly material and yet not, because it refers to a world that is not yet known, potentially imaginable although not yet made. As architects and urbanists, we are aware that the act of making is always one of projection, which moves from the potential of the real toward reality. In this process, we not only have to imagine virtual possibilities beyond those with which we are familiar, including ideas and images that occupy the realms of the unrecognizable and unknown, but we also have to materialize and actualize these possibilities—make them evident in the world—by grafting them onto, or inserting them within, existing realities so they can be substantiated. Indeed, New Orleans' future reality might be understood in precisely this way— that it will reside, not simply in the repetition of its past, but in the positive transformation and revitalization of its existing reality, by unlimiting its potential through interdisciplinary networks and community partnerships that support innovative thought and intensified action.

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[1] This distinction between the "real" and "reality" is elaborated in the writings of Jacques Lacan in the *Ecrits* (Lacan, 1977, 1989). According to Lacan, the *real* is a term that refers to the presignifying world of immanent matter, whereas *reality* refers to its dominant set of representations that govern the acculturated world of the symbolic.

It is from this perspective of real urbanism that URBANbuild was formed. URBANbuild is a collaborative urban and architectural design, housing prototype, and design-build program at the Tulane School of Architecture in New Orleans. Its comprehensive 2-year program, composed of an integrated network of 12 urban and architectural design studios and 4 design-build studios, was launched to act as a laboratory for city research and a generator of innovative design strategies for the city's future. URBANbuild, established with the support of a $300,000 U.S. Department of Housing and Urban Development grant, was founded on the premise that the resources of an academic institution dedicated to architecture and urbanism might be applied to this city as an object of study and speculation to engender positive urban and architectural scenarios for its rehabilitation and future development. In addition, through its community partnerships, URBANbuild's design-build program sought to directly contribute to the material process of the city's reconstruction by developing and constructing housing prototypes to seed the immediate rebuilding of communities.

One initial objective of URBANbuild was to creatively address the problematic "wounds" existing at the core of the city, areas that had been emptied out, not just by Hurricane Katrina, but by a long history of abandonment, blight, crime, and urban decay. URBANbuild directed its research and proposals toward supporting the urban revitalization of four contiguous target areas in New Orleans, moving from Central City to the Tulane/Gravier district and the Sixth and Seventh Wards, defining a circumferential band of urban space that runs parallel to the Mississippi River (see exhibit 1). Target areas for research and immediate intervention were determined based on cultural, demographic, topographic, and infrastructural urban research.

Historically, these neighborhoods have deep cultural significance as the site of former plantations. They contain some of the oldest historic structures of the mid- to late 19th century, which have been occupied by multiple generations of African-American and Creole families and many diverse immigrant populations, including Irish, German, Italian, French, Spanish, and Jewish, who settled this region at different times in history. The Faubourg Treme (Sixth Ward), in particular, is celebrated for its rich diversity as the historic home of the black Creole community and is claimed to be one of the oldest African-American neighborhoods in America.[2] Although these

Exhibit 1

URBANbuild Objective: Address the Wounds at the Core of the City

Left: Urban blight in Central City. Photo credit: Mona El Khafif. Right: Target areas.

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[2] For an indepth overview of the historic cultural geographies of New Orleans, see Campanella (2006). Also see Lewis (1976).

neighborhoods were once thriving communities located at the core of the city, now they are far less diverse, inhabited predominantly by an African-American, economically depressed population. Of the population of these target areas, more than 50 percent of households earn an income below the poverty line, compared with 28 percent of households in the city, 20 percent in the state, and 12 percent in the nation.[3] Although these neighborhoods represent the highest concentration of households living below the poverty line in New Orleans, they are directly bordering some of the wealthiest areas of the city.

Mayor Ray Nagin's Bring New Orleans Back Commission report of January 2006 identified these neighborhoods as "Infill Development Areas," located directly adjacent to those neighborhoods determined as "Immediate Opportunity Areas." These destinations were identified in part by the number of empty lots readily available within their boundaries, in combination with the fact that these areas were not subject to the same level of destruction by the hurricane as were other areas in the city (as a result of their higher elevation). In New Orleans, the strong collusion of history and topography reveals the ways historic urban development corresponded to, and closely followed, geography. Economically, however, these neighborhoods were in severe decline before Hurricane Katrina came ashore, representing a substantial portion of blighted and abandoned properties and the highest percentages of underutilized property existing within the urban center of the city.[4] Post-Hurricane Katrina, this condition has been amplified through increases in vacancy rates and the resulting intensification of urban blight and debris—conditions that will worsen if strategies, including social, economic, infrastructural, and architectural, are not developed for the reoccupation and densification of these neighborhoods and the consolidation of their eroded urban tissue. Geographically, these neighborhoods are located within a zone with elevations determined to be close to or at sea level and, therefore, are subject to minimal flooding, in contrast to many other lower lying areas of the city that have been rebuilding far more rapidly, despite their environmental risks, because of the economic resources available to them. In addition, because these target areas are directly adjacent to more developed and stable urban communities, they can draw from the infrastructural support of these adjacent territories, provided methods are generated to stitch across the boundaries that separate these neighborhoods. This band of urban space, like that along the river's edge, represents prime real estate within the city's historic center that is currently underutilized and in serious need of reconstruction. The city of New Orleans as a whole is dependent on rehabilitating these areas, which are deeply wounded at their core.

In the URBANbuild program, these identified core target areas were the subject of both research and design. Urban and architectural studios within the program moved through several scales:

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[3] These statistics are based on URBANbuild demographic research. See U.S. Census Bureau (2005, 2002).

[4] Statistical and mapped information documenting blighted properties in the target areas investigated were culled from the following city agency sources: (1) the list of adjudicated properties organized by ZIP code; (2) the city website's records of tax and ownership status; (3) the blighted property list issued by the New Orleans Redevelopment Authority; and (4) the "Blighted and Abandoned Property and Poverty Status for New Orleans, LA" maps prepared for the city of New Orleans, May 2004, based on data sources from the U.S. Bureau of the Census, 2000, and the city of New Orleans. Additional sources include a project initiated by the Tulane City Center and supported by the Fannie Mae Foundation, which developed a detailed document mapping the extensive inventory of adjudicated properties post-Hurricane Katrina in the Sixth and Seventh Wards, and Central City and Tulane/Gravier districts, published in July 2006. This research was supplemented by extensive field documentation and assessments of property conditions in these districts by URBANbuild.

from the scale of each neighborhood and its relationship to the surrounding district and city to the architectural scale while traversing a spectrum defined at one end by extensive macro-architectural projects thought in relation to either large-scale infrastructural elements or housing for the urban megablock to, at the other extreme, small-scale interventions intended as incremental design strategies. These studios included developing aggregative portable and mobile dwelling units, as well as prototypical design-build houses as innovative low-cost models for seeding neighborhoods dominated by blight and abandonment. This program is an attempt to work across scales and disciplines, producing much-needed continuities as a counter to the traditional segregation of disciplines, studios, and projects. The process requires collaboration within an academic institutional system that historically has advanced the individual project over the collective effort and segregated rather than integrated the disciplines of architecture, urbanism, and landscape. Terms such as landscape urbanism emerged from the realization that the design professions needed to move toward a shared and more integrated form of practice that engaged both large- and small-scale processes and artificial and natural ecologies.

Urban Mappings: Fabric, Infrastructure, Landscape

The integration of research strategies with applicable design practices is another critical part of this process to ensure that these strategies and practices remain continuous and mutually defining. Here, the importance of empirical research is not simply in the culling and investigation of urban, environmental, and demographic data, but also in the specificity of the information collected—its selection and framing—and in the ways it is mapped, analyzed, and graphically transposed to be reinserted into the design process. Below the surface of every map is its hidden logic and representational method. The intention of these mappings is both to expose what is unseen within the normal parameters of urban experience and to advance different ways of understanding the urban and architectural layers and the deeply buried genetic code of this city. The aim is to be precise, yet interpretive, in order to displace the illustrative and signifying map with one that is an operational instrument in the design process. In this way, the mapping and diagramming of information is more than a method by which the density of statistical or other forms of information about these neighborhoods is condensed and rendered visible. These layered urban inscriptions are also intended to be critical tools in the evolutionary process of design. They can be considered procedures for the mediation and synthesis of vast amounts of urban, environmental, topographic, and programmatic data that become operational as they are integrated with new material in the generation of informed configurative design strategies.

These mappings and diagrams are therefore understood to be evolutionary rather than simply innovative, in that they follow the principles of transformation intrinsic to the development of both natural species and indigenous cultural ecologies. Each act of mapping also involves transferring knowledge across distinct disciplines and establishing varying forms of congruence and differentiation. Each map is also spatial and political, operating from the bottom up and top down—simultaneously an act of recording and an act of invention. In addition, each act of mapping is specific to the material that it encounters, furnishing methods of mediating the real that allow for, and proceed toward, informed intervention, whereby internal consistency is both derived from, and integrated with, the phenomena investigated.

Urban Structure and Morphology

In the research phase, one of the most dominant conditions of New Orleans' urban history to be graphically elaborated was the organization and morphology of its urban fabric. The structure is understood as a negotiation between the stasis of the regular 300-by-300-foot typical gridded block structure—a derivative of the original 200-by-200-meter urban grid of the early 18th century Vieux Carré—that is repeated throughout the city's historic neighborhoods and the mobile shifts and overlaps in this system resulting from larger geographical influences, as this grid is reoriented to follow the tangents of the Mississippi River's undulating curvature. The archetypal configurative imprint of the early agricultural plantations is the hidden organization underlying the placement of all major boulevards as well as radial and circumferential patterns at the base of the city's urban field. Dominant radial boulevards, oriented perpendicular to the river's edge, originated as the boundaries or centralizing axes of these plantations, whereas the shifting yet continuous circumferential primary road networks running parallel to the river emerged from the evolution of the plantation's agricultural zones, as a series of layered bands moving away from the river. The process of urbanization continued by dividing these sites according to an externally applied gridded logic, generally locking onto the centralizing axes of the plantations and generating a series of layered and colliding itinerant grids that organize the urban fabric (see exhibit 2a). Despite the apparent stasis of this urban block grid, the structure of the city is dominated by directional rather than dimensional attributes, locally evidenced by the convergence and divergence of streets as one moves closer to the edges of these shifting gridded plates, and by the directional grain of radial and circumferential avenues that define the global structure of the city's infrastructural organization.

Exhibit 2a

Central City Urban Mappings: Urban Fabric/Grain

CIRCUMFERENTIAL ORIENTATION   RADIAL ORIENTATION

L   S

Mappings that further delaminate the internal divisions within these blocks employ line drawings to expose the directional pattern of this finer radial and circumferential field, defined by both the orientation of land parcels and the rhythmic distribution of long linear buildings within each block. This woven pattern of linear parcels, which defines yet challenges the shifting yet dense perimeter of the typical block, supports a similar grain of low-rise housing stock, characterized as much by its chaotic spatial and material differentiation as its dimensional and typological consistency. These mappings reveal the insistent striations of the urban structure hidden below the eroded fabric of these neighborhoods. In addition, intense rhythmic patterns define the distribution of open and built space, made evident through abstract solid and void planimetric drawings of sampled sections cut through the edges and centers of a series of contiguous blocks to expose the shifting scales and densities, as well as the variable spatial and material rhythms that characterize the streetscapes and internal blocks of the historic neighborhoods of this city.
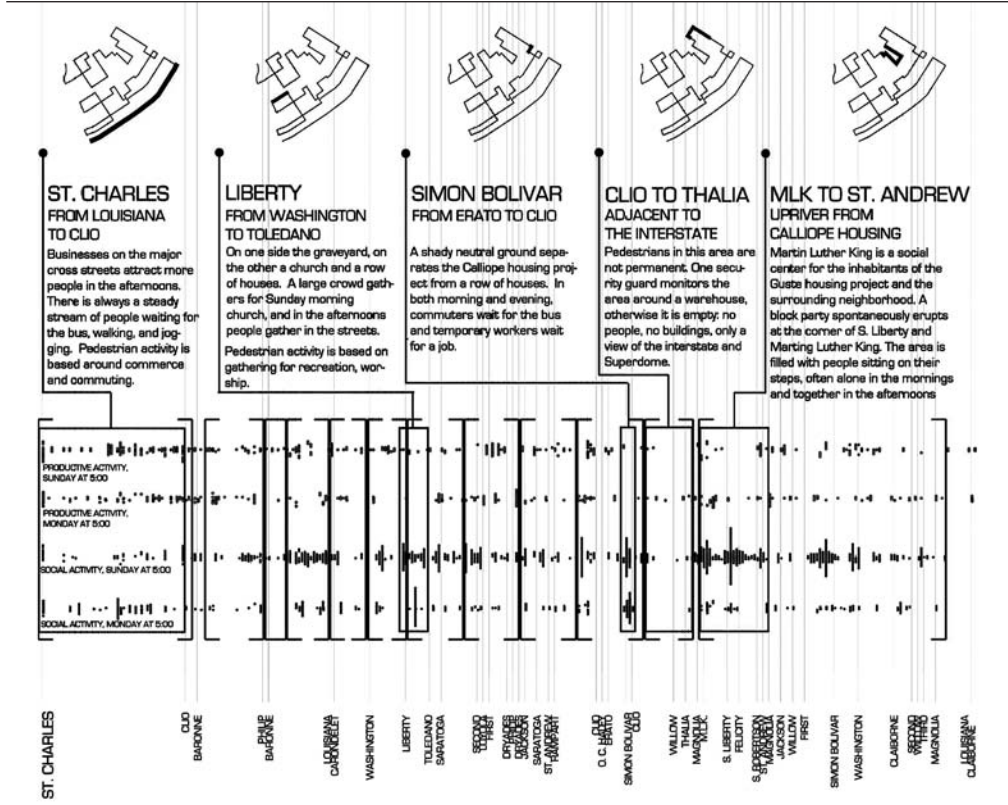
Urban Infrastructure

Despite the evenness and density of the city's organizational structure, the actual built fabric of these neighborhoods is far less dense. It consists primarily of small, single- or two-story multifamily houses, threaded through by small-scale public buildings along commercial corridors and punctuated by sparsely distributed fields of large institutional or industrial buildings, which have locally colonized individual blocks. The commercial corridors within these neighborhoods, such as Oretha Castle Haley and Martin Luther King Boulevards in Central City and Broad Street and Claiborne Avenue within the upper Treme, are comprised of primarily abandoned buildings and eroded spaces, so that their programmatic function within the infrastructural system has been minimized, if not almost entirely eliminated. Claiborne Avenue is one of the most important larger commercial corridors and east-west infrastructural conduits linking all target areas. Despite this geographical importance, Claiborne lacks the urban density and sufficient public transit systems needed to support residents in these neighborhoods, most of whom have no access to private vehicles, and to permit easy access to other parts of the city. Similar to the modern highway systems that collide with and bifurcate these neighborhoods, streets such as Claiborne and Broad have become major traffic routes that slice through these neighborhoods dividing them from adjacent parts of the city.

Highways, unlike streets, are directional vectors that interrupt urban space rather than edges that dimension, define and organize it. These highways are unconcerned with the territories that they bifurcate, given that the primary role of highways is to connect distant locations via a high-speed attenuated network. These highways and other infrastructural conduits, as well as the erasures produced by industrial occupations and multiblock social housing projects, are responsible for most anomalies within the intricacies of the urban mesh, creating insurmountable boundaries and divisive gaps that cut into the consistency of the older fabric. Urban infrastructure in these neighborhoods therefore functions far less as a working network of connectivity than a dimensional organizational structure that allocates space and defines the edges and internal territories of the urban field. Because these communities lack adequate access to transportation systems and suffer from the overdetermination of social, economic, and spatial boundaries that divide their neighborhoods from adjacent areas, they become far more insular. Connectivity within these areas therefore happens through local networks of mainly pedestrian activity—informal and fluid patterns of

movement that traverse these neighborhoods at entirely different scales and speeds than that of the surrounding city (see exhibit 2b). These informal networks were spatially and temporally mapped at different times over a period of days, across a range of aggregated smaller scaled vicinities, to understand the local patterns of pedestrian movement and types of informal social activity that dominate these areas. These networks have come to compensate for the lack of adequate public transit systems and institutionalized community networks within each of these neighborhoods.

Exhibit 2b

Central City Urban Mappings: Pedestrian Routes/Occupations

ST. CHARLES
FROM LOUISIANA TO CLIO

Businesses on the major cross streets attract more people in the afternoons. There is always a steady stream of people waiting for the bus, walking, and jogging. Pedestrian activity is based around commerce and commuting.

LIBERTY
FROM WASHINGTON TO TOLEDANO

On one side the graveyard, on the other a church and a row of houses. A large crowd gathers for Sunday morning church, and in the afternoons people gather in the streets.

Pedestrian activity is based on gathering for recreation, worship.

SIMON BOLIVAR
FROM ERATO TO CLIO

A shady neutral ground separates the Calliope housing project from a row of houses. In both morning and evening, commuters wait for the bus and temporary workers wait for a job.

CLIO TO THALIA
ADJACENT TO THE INTERSTATE

Pedestrians in this area are not permanent. One security guard monitors the area around a warehouse, otherwise it is empty: no people, no buildings, only a view of the interstate and Superdome.

MLK TO ST. ANDREW
UPRIVER FROM CALLIOPE HOUSING

Martin Luther King is a social center for the inhabitants of the Guste housing project and the surrounding neighborhood. A block party spontaneously erupts at the corner of S. Liberty and Marting Luther King. The area is filled with people sitting on their steps, often alone in the mornings and together in the afternoons

Urban Landscape

The planimetric mappings of the urban fabric contained within this research are supplemented by the equal emphasis placed on an orographic reading of this city through a series of topographies studying the layers of natural landscape and built form. In the past, *orography*, the branch of physical geography dealing with the sectional variability of the surface of the earth, seldom would have been discussed within the context of this very flat terrain. After Hurricane Katrina, however, topography is precisely what redefined the value of inhabitable neighborhoods, because the city's inhabitants, insurance companies, and regulatory agencies are now assessing the relationship of

these areas to sea level and to the unpredictability, yet regularity, of rising flood waters caused by the influx of potential hurricanes and other tropical storm systems (see exhibit 2c). In addition, if the lack of sectional variation and quantity of low-rise structures built below sea level, in combination with the extensiveness of the urban footprint of this city, contributed to the degree of devastation brought about by the flood, rethinking the urban map through the topographical section would enable a new understanding of the geographic parameters required for the city's future development.

The return to geography as a critical instigator of urban form is, at minimum, a necessity in a city historically defined by its relationship to water and landscape. Shifting elevations within these neighborhoods (a range of 7.5 feet above sea level to 5 feet below), mapped in relation to the elevations of the surrounding river and lake, as well as the higher flood line of Hurricane Katrina,

Exhibit 2c

Central City Urban Mappings: Topography
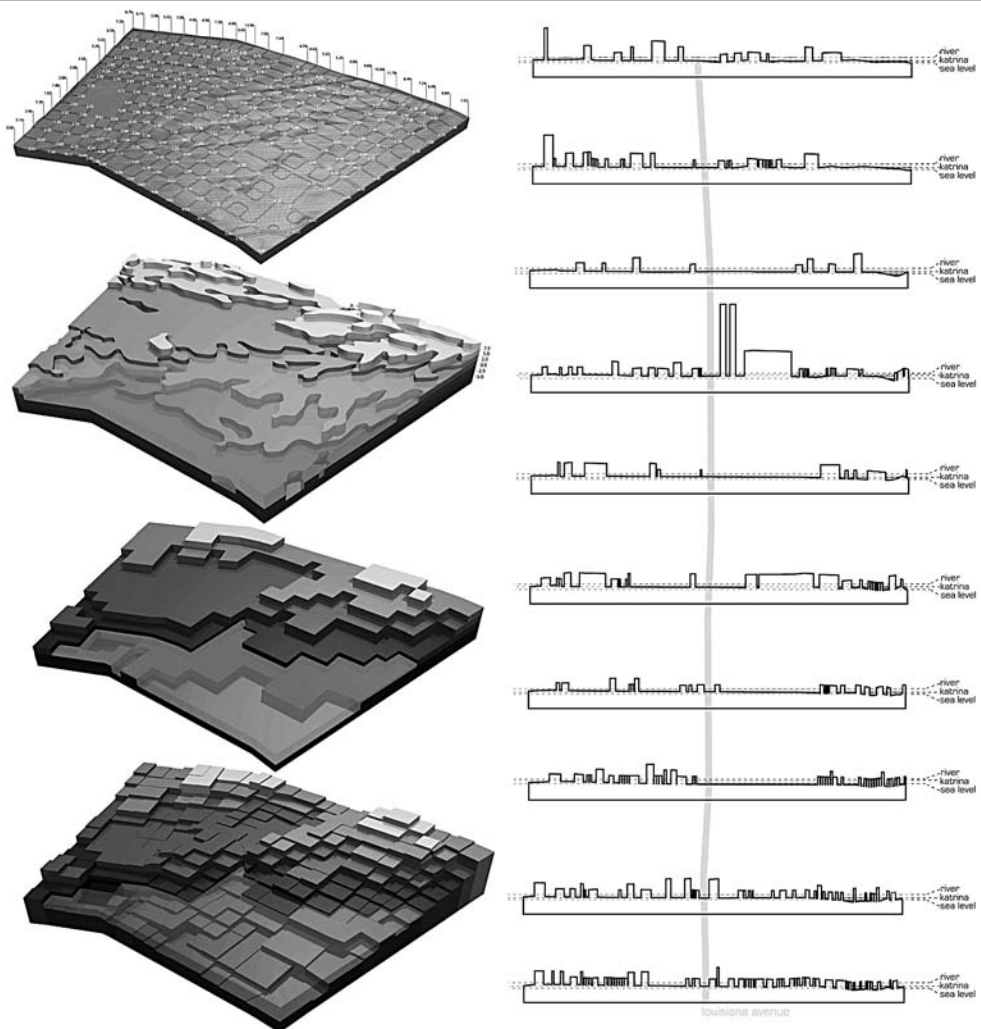
render explicit the quantity of built fabric remaining at risk within neighborhoods deemed to be on relatively "high ground" in contrast to other parts of the city. A matrix of elevational altitudes, laid out according to the urban block structure, produced a continuous series of layered vertical sections. Each layer corresponds to the topographies of ground, built fabric, and greenscape within each neighborhood, which were then spatially modeled in relation to sea level and the fluctuations of the water line. These topographies facilitated the layering and comparison of multiple systems, rendered visible and measurable through the precision of the section, and coordinated through their planimetric alignment with the urban grid. If the simple act of drawing a single continuous sectional line that connects the surface of the ground to the outside edges of buildings enables us to understand what we create as cultural and material extensions of the landscape—a continuous artificial terrain that we might traverse, rather than simply a collection of aggregated objects—the structuring of this system in relation to the urban plan ensures the inverse—the acculturation of this landscape within the parameters of an orthogonal urban structure. Combining the continuities that are intrinsic to the mappings of landscape with the planimetric structure and vertical and sectional emphasis given to built form, these topographies document, expose, and generate new potential relationships between the city's urban fabric and the other natural and artificial topographies—static and fluid, urban and "green"—that constitute the true ground of this city. The result is a new, thickened artificial landscape that might now be conceptualized in both environmental and infrastructural terms, while also being integrated with the discrete architectural and urban components of the system. This new synthetic system negotiates between different types of information without assuming the dominance of one over the other to create a viable form of landscape or infrastructural urbanism thought through continuous multilayered surfaces, interconnected networks, and aggregations of built form, rather than the compilation of discrete individuated buildings.

Urban Ecology and the Productive Greenscape

The URBANbuild program participants also generated environmental mappings and topographies focused on revealing the multiple, existing ecologies and green networks within these neighborhoods. These mappings invested attention not only in the domesticated and programmed green spaces, but also in the residual green wilderness of unprogrammed landscapes and overgrown abandoned spaces common to this city. Flowing green carpets, that, 2 years post-Hurricane Katrina, have entirely covered the archeological traces of recent urban history, no matter how disturbing from a cultural and historical perspective, indicate other ecological possibilities for the productive transformation and saturation of derelict urban spaces by means of environmental insertions and green infill strategies.

To think the "eco-centric" we have to warrant its emphasis in the initial stages of research and intervention. The equation of architecture and landscape within the urban matrix was ensured through mappings that articulated the qualities of greenscapes, in the formal, spatial, and material terms generally reserved for architectural analysis. We wanted to understand the relationship and reciprocity of natural and cultural systems and to ensure the integration of green systems and the scaling and continuity of components within future design strategies. This conflation of systems, which engendered abstract planimetric and sectional readings of environmental typologies (tree canopies, domesticated planted gardens, ground cover, lawns and other recreational green surfaces)

in terms of species, size, type, history and location, was then overlaid with urban interpretations of this green matrix understood through its densities, rhythms, programmatic differentiations, and spatial topographies.

Urban Strategies: Fields, Networks, Topographies

A critical goal of URBANbuild was to develop new interpretations of density to generate new forms of urbanity. We developed speculative strategies for a future form of urbanism which sought to be responsive to the need for intensive transformation within each target area, addressing the integration of the urban and the environmental, as well as the individual and collective. These strategies focused on the need for future cultural and economic diversity, the potential redensification of populations, and the attraction of residents back to the city's core (both from outside the city and from adjacent suburban vicinities). Urban and architectural proposals sought to achieve the reparation, saturation, and consolidation of existing urban territories and their cellular framework, the limiting of residential expansion, and the shrinking of urban footprints both within these neighborhoods and across the city as a whole. Our strategies encourage the city to explore many ideas to halt urban decay, including urban redistributions, the intensification of new forms of dynamic urban environmentalism, urban agriculture, and the introduction of dense recreational and ecological zones within the city's core. Such strategies for the city's redevelopment must be able to create the capacity to manage these changes over time and negotiate between the specificity of past incremental growth patterns and potential rhythms of future forms of architectural occupation and distribution.

Strategies for Urban Transformation

URBANbuild studios focused on a series of issues as conceptual directives in generating both a framework and taxonomy of operative urban strategies. The need for increases in density—of built form, infrastructural networks, and green space, for example—was responded to in multiple ways. These ways included local densities produced by infill strategies, such as the incremental insertion of small-scaled housing units or design-build houses into the residual spaces of existing blocks; the intense rhythmic stacking of hybridized programs in the rehabilitation of urban corridors; and the formation of variable configurations of high- and medium-density housing strategies for the new urban megablock.

Generating new strategies for multiple scales and forms of housing was the focus of the mid-scaled studios and one of the dominant issues explored by URBANbuild. The need for protection from flooding through environmentally adaptive strategies in lower lying zones was accomplished by creating artificial topographies responsive to the scale, systems, and historic rhythms of the existing built fabric. Design strategies furnished adaptations of the concept of landscape urbanism, for example, through densely programmed raised "piers" of housing, cultural, commercial, and recreational programs while simultaneously shrinking the urban footprint to support ecological initiatives.

Finally, the need to rehabilitate primary and secondary infrastructural networks and to expand the connective tissue within and across neighborhoods was achieved at multiple speeds and scales. We suggested new types of hybrid mixed-use programming applied to the restoration of commercial urban corridors; the development of important cultural, communal, and institutional nodes and networks; and the provision of diverse recreational landscapes operating as interconnected fields

within each neighborhood. At the larger urban scale, transformative mega-architectural projects are also advanced as a form of infrastructural urbanism to reinterpret and revitalize dead zones produced by the agglomeration of highway networks and their lack of integration in the city and to become new internal generators of activity for programs and amenities whose scales exceed those typical of the historic urban fabric. These responses can be classified as distinct types of strategies—distributed urban fields, layered urban topographies, and arrayed infrastructural networks—each of which is dominated by its relationship to fabric, landscape, or infrastructure. The responses also offer multiple urban solutions to aid in the rehabilitation and future development of each neighborhood.

Distributed Urban Fields

At the urban scale, URBANbuild proposed three types of field strategies to increase density, consolidate the urban fabric, and insert additional housing and supplemental programs in these neighborhoods. These strategies consisted of incremental distribution of variably sized built elements operating at the scale of the individual or aggregated residential lot, the typical urban block, and the large consolidated land parcel composed of multiple blocks. These urban typologies compose relatively dense or dispersed fields of differently scaled elements that form a larger multiplicity composed of individuated units of housing and additional support programs. As urban interventions and renewal strategies, field strategies often have the greatest potential for viability because their incremental and additive nature parallels the gradual growth and flexible distribution patterns of communities. They also embody the collective condition intrinsic to cities and can ensure the participation of multiple authors—urbanists, architects, designers, community leaders, and citizens—while establishing directives and limits for the development of a neighborhood or urban area. Their success as an urban strategy, however, is at the scale of the larger field—the territory that this field stabilizes and within which it intervenes, and the implied network that is generated through the interaction of elements within the field rather than through individuated buildings. Differences at the urban scale are determined by the pattern and density of the field, the scale and number of different typologies of elements inserted into the existing urban fabric, and the degree or intensity of intervention determined by the density of the field produced. Field strategies also operate both within and against the existing urban fabric, because their local insertions are determined by the structure of urban blocks and their parcelization, as well as by the existing opportunities for development in each neighborhood. Their logic as a distributed field, however, is open and flexible in nature, illustrating the way occupations, like markers on a game board, are able to transform the rigid organizational structures that define their possible positions. (See exhibit 3a.)

A key objective of URBANbuild was to establish new interpretations of prototypical multifamily housing types that might be inserted within existing neighborhoods as field conditions at the scale of the individual or aggregated lot (small grain) and at the scale of the urban megablock (large grain). (See exhibit 3b.) These multifamily housing proposals are intended to be alternatives to the single-family house on the one hand and the existing large-scale housing projects on the other—those housing models that dominate neighborhoods in the center of the city. These proposed small- and large-grain field strategies are advanced to increase urban densities, shrink the currently occupied footprint of the city, consolidate the urban tissue and the community it supports, saturate

Exhibit 3a

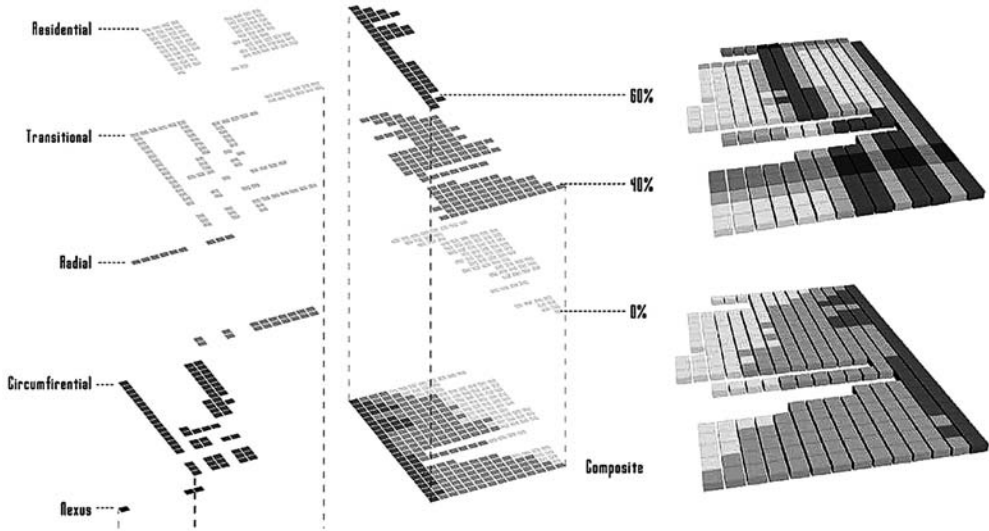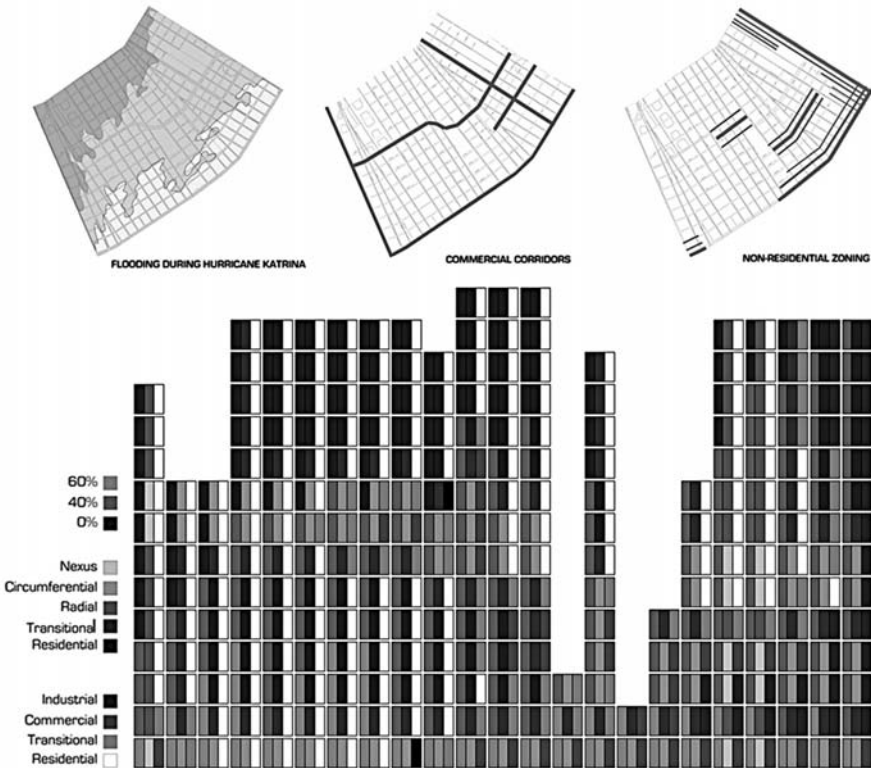Megablock Zoning Strategy

Exhibit 3b

Megablock Zoning Strategy

existing urban cells that have been eroded because of blight and abandonment, and provide aggregations of manageably sized units for mixed- and low-income communities. These strategies also furnish additional social, cultural, commercial, and recreational amenities to support these neighborhoods, offering strong links between places of inhabitation and the facilities and supplementary programs necessary to vitalize and sustain them.

At the larger scale, the urban megablock proposal sets out to establish a "rule set" defining the type of zoning or "genetic code" for different block types within each neighborhood. This rule set defines densities for housing and housing types, as well as percentages to be dedicated for green space and different combinations of commercial, cultural, and recreational programs to support the housing to be developed on each block site, representing at least 20 percent of the total programmatic volume. Blocks were also coded according to their relationship to the larger field, to dominant streets and arteries, and to neighborhood zones, determining both influences for block orientation as well as the types of amenities to be provided. By using site influences as codes for zoning, a genealogy of flexible block types was created, each of which could be individually defined and developed and which provided the site zoning for the HOUSING+ studio. This coded rule set also incorporates flood zones as dynamic but relevant levels for the sectional development of both program and topography, determining the elevations or levels of artificial high ground for different blocks—a new urban shelf or artificial landscape for occupation above sea level supporting increased density while allowing for more sustainable recreational landscapes below. The aim is to increase density in the vicinity of urban blocks where little risk of flooding exists, while designating high-risk, no-building zones in low-lying areas, with the intention that these be redeveloped over time as recreational territories, environmentally sustainable wetlands, and water reservoirs within the city.

Arrayed Infrastructural Networks

URBANbuild studios proposed multiple urban network strategies. Each network strategy built on existing pedestrian, vehicular, and other infrastructural systems that incorporated new programmatic and spatial networks to furnish alternative urban spaces and landscapes, intended to vary and intensify the modes of interaction among residents in these neighborhoods. Network structures are branching arterial and capillary systems—"rhizomatic meshworks"—that establish a connective tissue between independent urban elements and catalyze and manage systems of movement, flow, and exchange. Similar to field conditions, network strategies also have the capacity to be incrementally generated, because they are based on models of hierarchical growth and are thus developable over time. These systems can be either dense and compact capillary systems or expansive and attenuated large-scale networks, operating at different scales and speeds, where local and larger systems can be integrated through overlapping infrastructural arrays and interchanges to produce dynamic synergies between different territories in the city (see exhibit 4).

URBANbuild proposals developed three scales of network systems: (1) smaller scaled interior branching systems generating intricate and multileveled pedestrian, social, and recreational networks within neighborhoods for the purpose of invigorating public spaces and vacant street-facing lots while linking these with leftover and overgrown interior spaces between street-facing parcels; (2) arterial urban corridor projects operating at the scale of the vehicular commercial

Exhibit 4

Infrastructural Networks
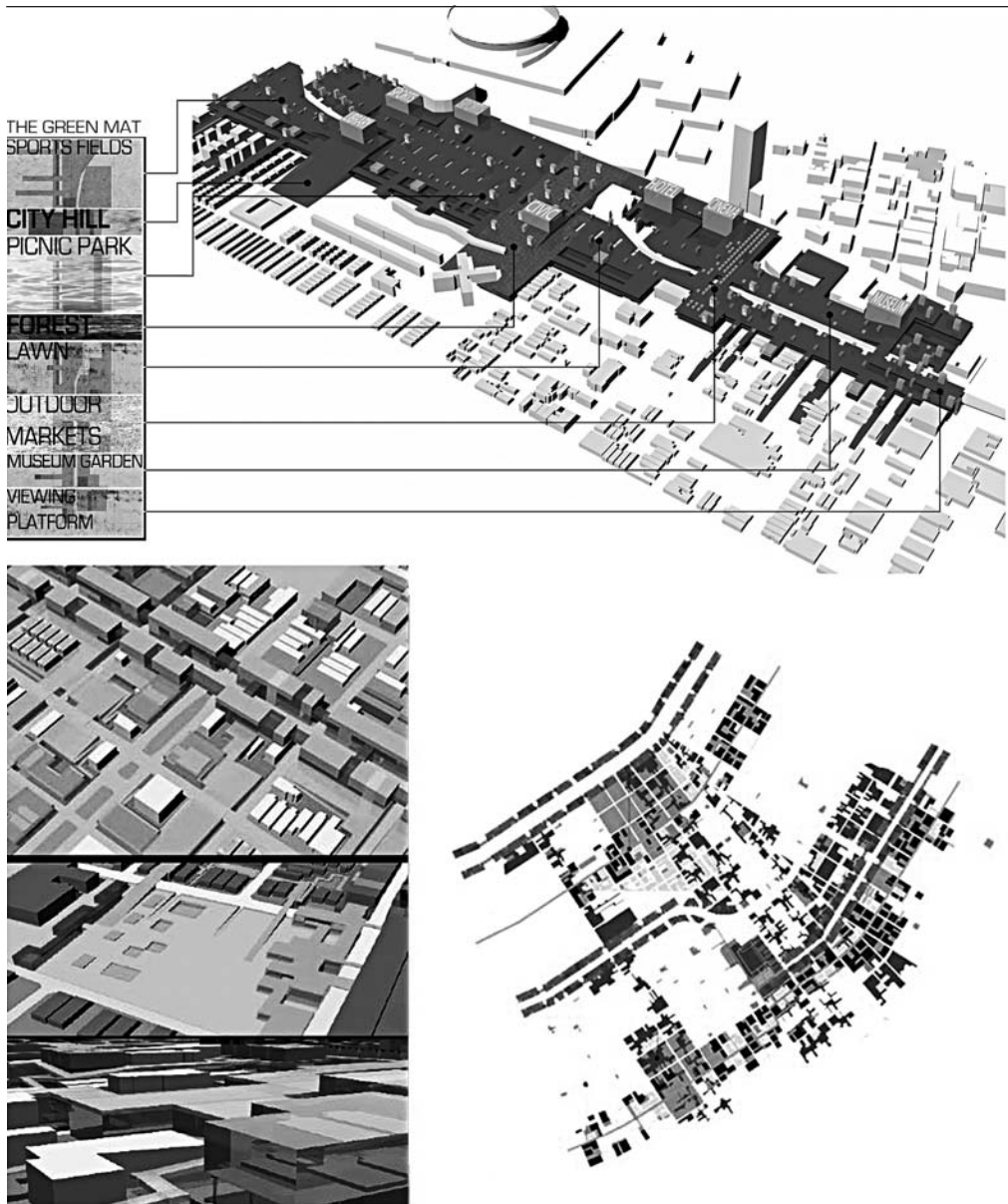
Top: Pontchartrain Expressway infrastructural landscape strategy. Bottom: Central City netscape strategies.

street directed toward the redensification and rehabilitation of important boulevards and avenues while reestablishing continuities with adjacent neighborhoods; and (3) large-scale infrastructural landscape projects aimed at the healing of residual scars produced by interstate highways and their extended field of ramps that have been indiscriminately sliced into the urban fabric. This last type of infrastructural urbanism often operates at the geographical scale, attempting to suture divided

territories through infrastructural bridging, large-scale urban megaforms, or extended landscapes offering new modes of connectivity and new scales of inhabitable public space.

The netscape strategy proposed for Central City, for example, which integrates multiple branching networks with an extended landscape of multileveled interconnected surfaces, is supported by the overlay of several urban elements: (1) a secondary pedestrian network connecting underused spaces in the interior blocks along Baronne and Magnolia Streets, supported by recreation, housing, and mixed-use development; (2) a new connective greenscape, linking multiple levels from pedestrian routes to recreational roofscapes in support of adjacent housing as well as other cultural and communal programs; (3) a series of densely developed, continuous commercial corridors along Claiborne Avenue, Simon Bolivar Avenue, and Oretha Castle Haley Boulevard, which integrate multiple interlocking programs supported by an elevated green network stitched across vehicular streets to facilitate uninterrupted pedestrian movement; and (4) a network of mobile urban architectures, programmatically and spatially linked with the 60+ churches and existing social services in the area to provide a nodal network of critical community support through myriad supplemental cultural, educational, recreational, and health-related programs such as GED (general educational development) classes, skill-based training, and health education/outreach clinics. In an additional studio at the microscale, the Mobile Urban Device (MUD) was further developed as a critical local strategy, supporting programs for multiple community partners and services in the area such as the Dryades YMCA, Edgar P. Harney Elementary School, Teach for America, CACTUS, the Goodwork Network, Second Harvest, Ashe Community Center, and the Central City Renaissance Alliance. This network operates through multiple systems, providing new public spaces in support of the neighborhood's active communal street life, offering much-needed amenities and accommodating a greater density of occupants that would be facilitated by the generation of new high- and medium-density housing models.

Large-scale infrastructural landscape projects, such as the geological urban megaform proposed for the Pontchartrain Expressway, attempt to transform what is now an enormous swath of unused space dividing Central City from the Central Business District into an attractor that can accommodate large commercial, social, and recreational spaces such as big box retail stores, cinema complexes, and sports fields—suburban amenities whose urban footprints exceed the existing grain of the historic urban fabric and that can act as economic and social drivers for rehabilitating these neighborhoods. The proposed strategy conjoins the two sides of the interstate by extending programmatic zones directly adjacent to the expressway, along a series of vectors perpendicular to the direction of traffic. The purpose is to weave urban activities and stitch across the highway separating Central City from the Superdome and New Orleans Arena, train and bus stations, and the commercial business district of the Loyola/Poydras Street area. To saturate the urban fabric, available spaces below, between, and above the interstate highways were claimed for new building sites, creating a large, horizontally layered mat structure capable of synthesizing the existing infrastructural landscape.

Layered Urban Topographies

Urban topographies attempt to displace the idea of buildings proposed for specific sites with the notion that the construction of the site itself as a large infrastructural project is perhaps a conflation

of architectural, urban, and geological attributes. Out of necessity, large infrastructural projects, such as highways, bridges, dams, and levees, do precisely this. Because they are dealing with large continuous systems, they operate at the geographical and urban scales. If Hurricane Katrina and the ongoing threat of flooding in an environmentally turbulent and disaster-prone area have affected the way we think about the urban environment in New Orleans, they are to remind us that the raising of an individual house is certainly not enough if there is no access, egress, or infrastructural support system ensuring life-sustaining continuities linking individual components within the larger urban system. The haunting image of post-Hurricane Katrina survivors stranded on rooftops being rescued by helicopters and boats is a reminder that raising houses independent of an elevated and accessible continuous infrastructural network or landscape and other methods of producing elevation within a discontinuous urban fabric are not sustainable solutions for the city's urban future. In low-lying regions, geography is an ever-present attribute of the urban environment, and we must therefore be thinking at the geographical scale through the manipulation of existing topographies while also thinking about the individual lot. The densely programmed artificial topography of piers (see exhibit 5) designed for Central City, for example, consolidates built space along raised extended avenues linked back to the high ground, while stacking aggregated housing units according to barcodes reinterpreting the historical urban patterns and rhythms of the existing streetscapes. URBANbuild generated high-, medium-, and low-density housing proposals, drawing from the specificity and spatial patterns of historic local models, such as existing shotgun

Exhibit 5

Rhythmic Urban Topography: Pier Strategy (1 of 2)
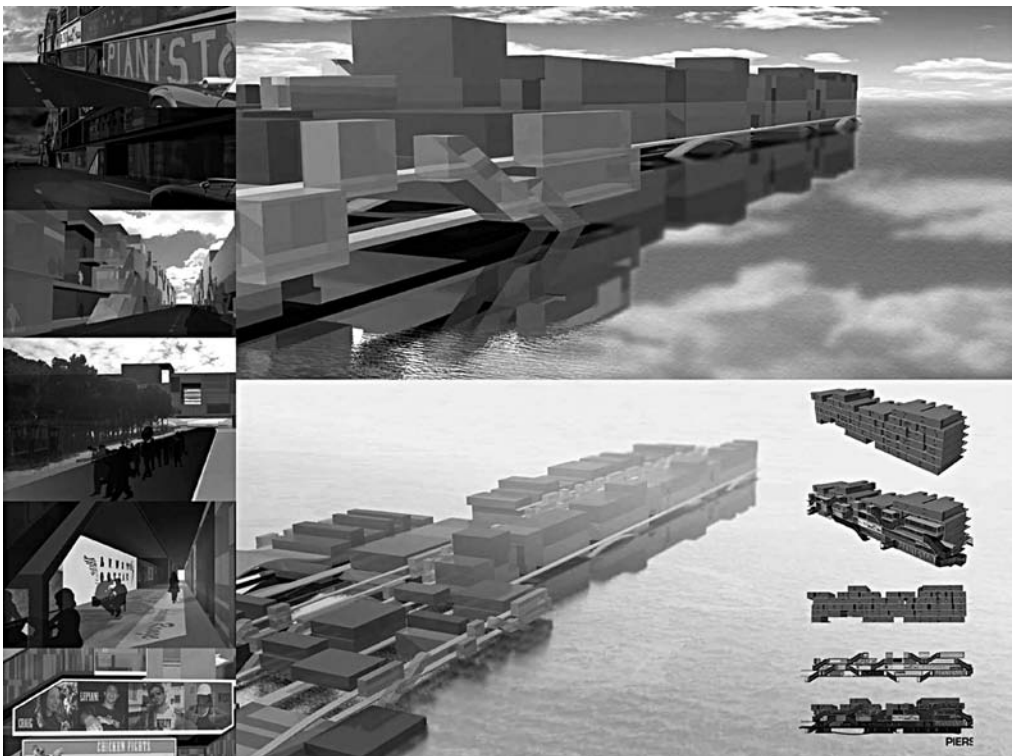
Exhibit 5

Rhythmic Urban Topography: Pier Strategy (2 of 2)
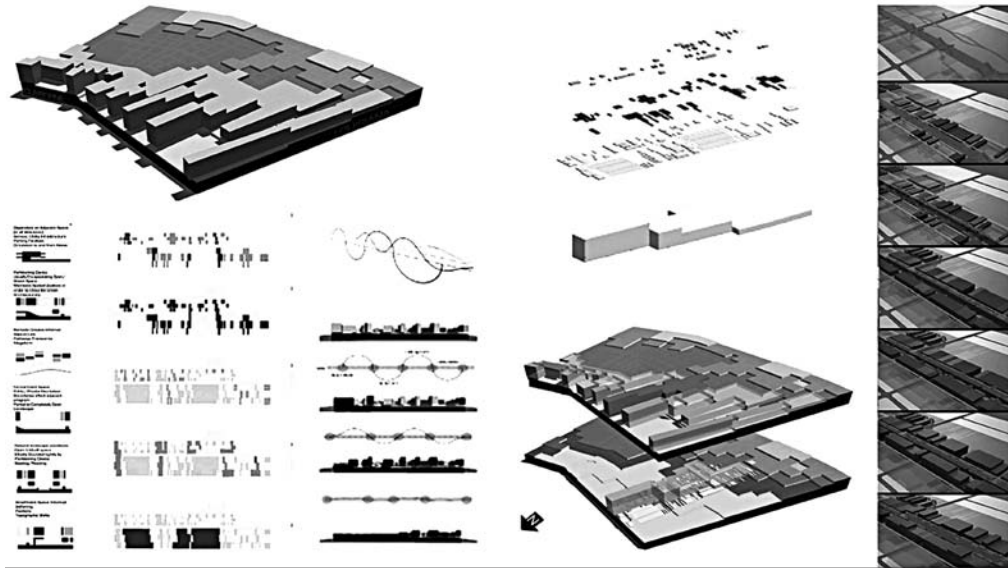
house types, which dominate the urban fabric in this part of the city, as well as from the study of important global models such as the innovative contemporary row-housing precedents developed for the reinhabitation of the piers and docklands in Amsterdam. These rhythmic topographies, which act as infrastructural urban islands connected by dry, elevated routes, achieve the requisite urban densities for these neighborhoods while shrinking the urban footprint and supporting the creation of recreational landscapes and sustainable "urban wetlands" within the interior of the city.

Architectural Aggregations

Megablock Strategies: HOUSING+

URBANbuild generated individual architectural proposals for the urban block through the concept of "HOUSING+," referring to housing in addition to other nonresidential mixed-use programs. HOUSING+ working, + leisure, + culture, + commerce, and + recreation represented an initial generic range of possible housing hybrids, which were rendered specific in relation to particular block sites (see exhibit 6). These programmatic and architectural design proposals were grounded in the study of several contemporary global housing precedents and the reinterpretation of these strategies in relation to new programs and local, site-specific urban, environmental, topographical, and cultural parameters. Many of these precedents were drawn from research of innovative social and economically mixed, high- and medium-density housing models from other watercities concerned with the application of contemporary models to historic fabrics, sustainable environmental systems, and cultural continuity. Models such as those used for Borneo Sporenburg in Amsterdam, for example, are contemporary, pedestrian-scaled, urban, three-story townhouse units based on historic canal houses (similarly subject to the threat of flooding), with base floor plan dimensions

Exhibit 6

HOUSING+: Three Proposals
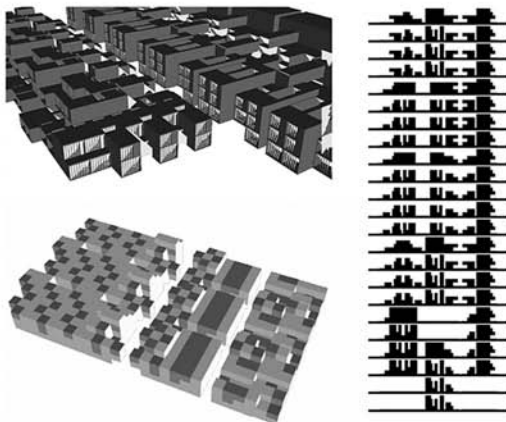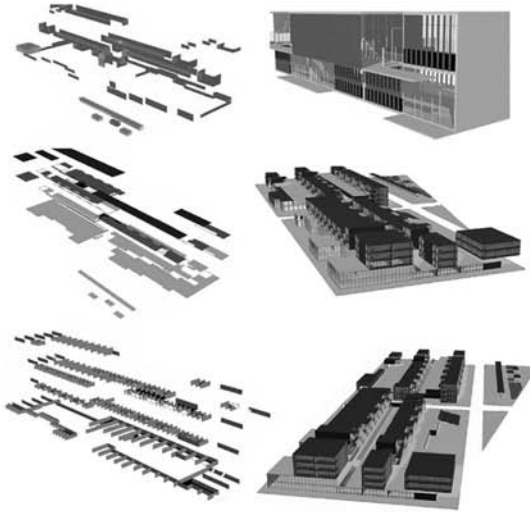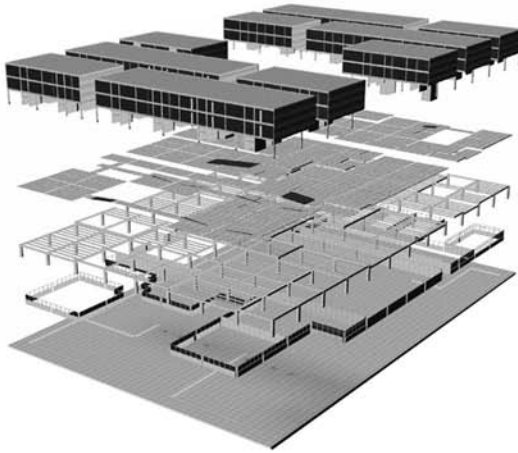
that are surprisingly similar to the typical historic shotgun lot in New Orleans. URBANbuild analyzed these precedents at multiple scales to reveal their fundamental architectural principles and organizational strategies. We studied the deployment of these models in relation to larger urban systems; the complex configuration and variability of individual housing units; their modes of repetition, combination, and transformation when multiplied to produce larger building elements; and the methods through which different program types were integrated with housing to produce new hybridized programs combining living, working, and leisure.

Housing proposals for the megablock focus on one of the most common urban units within the core of the city, which has historically determined the rhythm and structure of the urban fabric as a large-grained field. The reinterpretation of the urban block through architecture allows for multiple organizational tactics and architectural approaches to emerge within the boundaries of a single site, while negotiating between architectural and urban scales. The condition of repetition plus variation (the basis of rhythm) specific to the condition of housing within the block, which allows for individuation within the context of continuity, is therefore conceptually repeated at the urban scale as the accumulation of different proposals by multiple participants incrementally populate and fill out the larger urban terrain. In contrast to both the rigid repetition of historical typologies and monotonous homogeneity of mid-century American social housing projects, schemes revolve around flexible and variegated unit types, incorporating differing configurations of public and private programs and interior and exterior spaces, for a range of individuals and family structures and for a diverse population of inhabitants in terms of their economic, educational, and cultural backgrounds. These unit types, and the larger aggregates they form, represent an enormous taxonomical range of prototypical configurations that both evolve from and can be applied to differing sites. Multileveled perforated mat and rhythmic row schemes reinterpret the directional grain, internal configurations, and spatial deployment of site-specific buildings on adjacent and typological blocks, while increasing density and ensuring permeability to incorporate multiple uses of interior courts and roof gardens, in addition to allowing light, air, and greenery to penetrate deep into the block. The consolidation and activation of outdoor space both within the depth of and between rows and levels of units, which in typical shotgun lots is generally limited to a narrow, 3-foot right-of-way on either side of the building, engenders new models for spatial distribution of outdoor space within a single block and new possibilities for private and communal inhabitation. The framework for supplementary programs specific to different block sites and their vicinities also allows for different uses—from daycare centers, playgrounds, and recreational sports facilities to live-work studios, light industrial workshops, green markets, and commercial centers—to activate and revitalize these communities in support of architectural urbanity.

Microstrategies: Portable and Mobile Urbanism

URBANbuild housing-prototype development at the smaller scale investigated two distinct incremental strategies, both of which were intended to be inserted within existing neighborhoods as small-grained fields at the scale of the individual or collectively assembled lot. The portable and mobile urbanism studio focused on responding to the need for high-speed, high-quality urbanization, employing the power of individual settlement as well as the opportunities provided by flexible prototyping, prefabrication, and mass customization to implant existing neighborhoods with housing and community services designed and reconfigured for different urban situations (see exhibit 7).

Exhibit 7

Mobile Urban Device: Program Matrix and Community Network Strategies

openME – Program.Operation.Site.Description

greenME
- community-run
- potentially a PTA event
- NORD (New Orleans Recreation Department)

greenME operates by selecting a site for a community garden, which the MUD then supplements through educational events, such as caring for the garden and learning to cook with its fresh produce.

connectME
- community-run
- volunteer-run
- Earthlink

connectME utilizes the free Wi-Fi internet provided to the city of New Orleans by Earthlink, acting as a mobile computer center.

speaktoME
- Edgar P Harney Elementary School
- Girl Scouts
- Tulane University

speaktoME allows the MUD to be used as a mobile platform for a number of speaking or music events, where the speaker or event is housed within the MUD and the audience gathers in front.

watchME
- Zeitgeist
- Tulane University
- Edgar P Harney Elementary

watchME turns the MUD into a mobile theater, turning potentially any site with a large blank wall into a projection screen. News and current events could be shown as well as admission-charging movies.

playwithME
- Edgar P Harney Elementary
- Youth Movement
- Dryades YMCA

playwithME provides sporting equipment and in some cases the playground itself in a city where functional playplaces are at a premium.

hearME
- volunteer-run

hearME acts as a community lounge space and bulletin board, where postings relevant to the community can be made and time spent with neighbors.

teachME
- CACTUS
- Teach for America
- Tulane University
- Edgar P Harney Elementary

teachME addresses the special education needs of the children at Edgar P Harney Elementary with supplemental education outside of school hours.

Portable dwelling units (PDUs) and MUDs signify the private and public components of this urban system, to be understood not simply as individual houses or small community-outreach buildings, but rather as architectural elements able to accumulate into combinatorial urban patterns and networks that can accommodate the need for growth, expansion, and transformation over time, as well as spatial and contextual flexibility. In this context, the strategy of multiplying the effects of the extremely small urban component is to provide the maximum result, employing minimal means, and to establish a network of local community partnerships to act as program collaborators and potential sponsors. The goal is to move across scales and develop a series of architectural elements that will act as urban prototypes, which are able to satisfy urban and architectural needs simultaneously, given that the actual need for housing, as well as social infrastructure, is an urban issue as well as an architectural one. The importance of prefabrication and high-speed urbanism is to foreground the issue that although individual design-build projects are an extremely important contribution to this city, we have to realize that it would take URBANbuild students 30,000 years to build 60,000 housing units if we are building them only one house at a time. Solutions to large urban issues require larger scale urban strategies, even those that focus on the potential proliferation of small-scale architectural and urban elements. According to recent Census data, nearly 160,000 residents continue to be displaced from the center of New Orleans.[5] Many of these residents lacked the resources to evacuate and now remain stranded in temporary housing stock or in other parts of the country. Most of these low-income residents were renters, and a substantial number lived in federally subsidized and often dilapidated public housing projects. In addition, the settlement of temporary houses in the form of Federal Emergency Management Agency (FEMA) trailers has become a new problem for the city, because what was intended as a temporary solution has now become part of the permanent landscape of the city, exacerbating larger urban problems such as the need for public space, community services, and more stable urban conditions.[6] Because housing and social infrastructure are parallel needs in cities, the MUD and PDU—one public and the other private—are potential solutions to the need for incremental growth, economy, speed, and prefabrication that also deal with long-term development strategies for a consistent urban fabric that can operate at different scales and in different contexts.

Design-Build

URBANbuild house prototype and design-build studios focused on the immediate scale of the dwelling unit and its applicability for multiple sites within the target neighborhoods. URBANbuild students and faculty collaboratively designed five housing prototypes for each neighborhood, with

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[5] See current resettlement statistics documented and analyzed by GCR & Associates (2007). According to GCR, in December 2007, the population of Orleans Parish reached 295,448—65 percent of its pre-Hurricane Katrina level of 454,863—bringing the total population of the metropolitan New Orleans area to 1,236,505. Further research includes data from the U.S. Census Bureau (2007) and statistics from the U.S. Postal Service (The Brookings Institution and Greater New Orleans Community Data Center, 2007a).

[6] See quarterly updates of *The New Orleans Index* supported by research from The Brookings Institution Metropolitan Policy Program and the Greater New Orleans Community Data Center, August 2007 and November 2007, at www.gnocdc.org (The Brookings Institution and Greater New Orleans Community Data Center, 2007b). Sources also include the Louisiana Recovery Authority. According to *The New Orleans Index*, in November 2007, more than 46,600 families continued to live in FEMA trailers across Louisiana, with 33,000 located in the New Orleans metropolitan area.

one prototype selected for construction in partnership with Neighborhood Housing Services, a community nonprofit agency specializing in affordable housing and neighborhood redevelopment. The program intended to provide high-quality affordable housing to aid in the immediate rebuilding of the neighborhood by generating a series of fully developed architectural construction drawings of low-cost, well-designed, environmentally responsive houses to be made available to qualifying families in the community. One of the many goals of this program is to contribute substantial and relevant proposals of progress amidst the preservation of an existing historic fabric. As a precursor to the design process, URBANbuild identified sites for development—in general, vacant lots and those containing severely damaged properties—analyzed them at the urban scale, and then selected specific sites to support design-build projects in consultation with Neighborhood Housing Services and other community partners such as Ujamaa, Project Home Again, and the New Orleans Redevelopment Authority who were all engaged participants in, and direct contributors to, the design-build process (see exhibit 8). Prototype designs investigated typical lot sizes and orientations within the neighborhood, repeatable programmatic and spatial typologies and their potential variations, and prefabricated and sustainable material construction components. This process enabled URBANbuild participants to understand the ways in which the designs for these prototypes might be systematically applied to the development of multiple sites within and across different target areas so that the architectural unit would be understood not simply as an individual

Exhibit 8

Design-Build Houses (1 of 3)

1930 Dumaine Street.

Exhibit 8

Design-Build Houses (2 of 3)

2856 Dryades Street.

built element, but rather within a larger urban context supporting this element's proliferation and multiplication. Of these designs, a single scheme and site were identified for development and construction by the collaborative design team within the studio, after which the proposal was documented and prepared for permitting and construction.

Although design-build projects cannot adequately deal with the scale and spectrum of larger urban issues, their importance as a strategy results from their physical material presence, their direct applicability, and the temporal and spatial immediacy of design-build practice. The physical object produced within this process becomes a local absolute that embodies within it the intellectual and physical labor of those who have contributed to its development, while the shared experience of each design-build project's development, renders hope and inspires action in those directly engaged in rebuilding the community. To date, the four planned design-build projects for URBANbuild—1930 Dumaine Street, 2856 Dryades Street, 1939 Seventh Street, and 1900 Seventh Street—have been successfully completed in the Upper Treme and Central City neighborhoods. Each of these projects has attempted to respond to larger urban and environmental issues at the local scale, such as the necessity for both flood protection and connectivity, as well as the incorporation of sustainable and repeatable practices, while reinterpreting the cultural, social, and

Exhibit 8

Design-Build Houses (3 of 3)

1939 Seventh Street.

economic needs of the community through innovative design and construction strategies. These projects have acted as vital loci for redevelopment in their neighborhoods, initiating and sustaining an ongoing dialogue about the potentials of active, local practice for transforming communities.

This spectrum of urban proposals and architectural projects of the URBANbuild program attempts to negotiate between the history and the future of New Orleans—not only the city's 19th-century architectural history, but also an expanded notion of history that includes its deep geological and environmental history; its social, cultural, and programmatic history; and its more recent industrial and technological past. This process is grounded in extensive collaborative research and developed through a network of interconnected active practices that speculate on potential new urban trajectories for the future development of this city that embody the principles of architectural density, diversity, and sustainability. URBANbuild proposals for a variety of mixed-use, higher density housing models (for example, that counter the opposition of single family homes and larger scale monotonous housing "projects" typical of New Orleans and many other American cities) are intended to challenge the limited frame of existing typologies that have predetermined the city's growth and urban development, as well as the typical patterns of its environmental consumption, while offering new propositions to expand the terrain of "real" possibilities in relation to the city's rebuilding.

After Hurricane Katrina, it is important that the evaluation of opportunities for, and threats to, this city take place within an expanded analytical framework, where invention is supported within the context of historical continuity and environmental responsibility and local culture is respected within a diverse and more global urban context. As Elaine Scarry (1987) made evident in her book *The Body in Pain*, we continually remake the world in order to remake ourselves. Our cities are not just sites of projection of our own living sentience, they are also sites of reciprocation—worlds that have the capacity to transform the lives of those who make, encounter, and inhabit them.

Acknowledgments

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