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Design Thesis: Engaging the City Block

Urbanism is a defining characteristic of any region that is culturally and technologically advanced. Urbanism differs from its preceding architectural movements in that it reflects on the means of interaction between humans and the built environment in which they inhabit.[1] More specifically, urbanism often incorporates the concept of city planning, where architects physically design and manage the placement and quality of physical structures in a city based on urban sociology as well as the distinguishing the qualities and necessities of a city's inhabitants. The primary purpose of urbanism is to create a place identity at the city scale by means of analyzing modern technology. These advances have expanded urbanism beyond a single city and reflecting this idea through a region's architectural and structural design.[2] Urbanism creates infrastructure that matches the needs of a city's inhabitants to better coexist. If urban planners did not premeditate the layout of cities, they would have less functionality over extended periods of time in modern society. While urban planning is a necessary aspect for cities to thrive, it can sometimes insight physical limitations, making it crucial for designers to create innovative architecture that can withstand the test of time in a rapidly developing society. Urban planning ensures that all aspects necessary for a successful community are accounted for including modes of transportation, ample green spaces, and proper zoning.[3]

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[1] Frampton, Kenneth. *Modern Architecture: A Critical History*. Thames & Hudson World of Art. 287.

[2] Frampton, Kenneth. *Modern Architecture: A Critical History*. Thames & Hudson World of Art. 20.

[3] Frampton, Kenneth. *Modern Architecture: A Critical History*. Thames & Hudson World of Art. 23.

Fuller's geodesic dome was a pioneering strategy in geometric structural design that has been replicated in many urban societies. However, when implemented in Drop City, in Trinidad Colorado, there was no urban planning or regulation and it inevitably did not endure. Drop City is an example of an experimental settlement that ultimately did not last due to its lack of structure. This demonstrates how urbanism and urban planning are essential to sustain postmodern society. Drop City served as a playful experiment to refine the efficiency of the construction process for the geodesic dome and to test the materiality of the shelters. There was no risk since the structures were essentially cost free and temporary because they were made from salvaged waste materials.

The concept behind the global counterculture known as Drop City was a spontaneous grassroots movement that arose as a rebellion against authoritarianism. Its inhabitants relied on resourceful living because they had little to no building experience. They used whimsical innovation to develop building strategies that were based on Buckminster Fuller's vision of the geodesic dome. The dwellers were essentially scavengers that turned this method of resourceful building into an artform, using scrap pieces of 2x4's, car rooftops from junkyards, bottle caps, and anything else they could salvage. Ultimately, the city did not endure because it was infiltrated with transients such as bikers, runaway adolescents, and delinquents. This lead to the demise of Drop City because it was founded on the principle of rebelling against aspects of society that were now prevalent throughout the city. The Droppers had created the first green community before the concept existed. They saw the experiment as building a city, just as the city planners of any other city such as New York; however, they did not abide by any institutional regulations that had proven to be successful.

In sharp contrast to Drop City, the city of Manhattan was entirely designed by urban planners and based on a grid system rather than developing incrementally. This is an example of urban science fiction because it is manmade, meaning that every aspect of the city is intentional, not a product of chance, yet Manhattan continues to thrive despite constant development. The simple decision to divide the city into 2,028 equal blocks, creating a matrix that seems to limit the potential for design but instead captures all future changes to the Manhattan grid. This example of urban planning redefines all previously known values and strategies.

A predetermined city contradicts the process of how a city would naturally obtain its unique identity as it evolves. New York is one such example where, "The four urban functions of working, living, leisure and transport which Le Corbusier once so elegantly deployed in his model of the city can no longer be separated from each other either spatially or socially. Living and transport have become practically identical."[4] Because many functions of daily life are intertwined with a city's infrastructure, effective urban planning is essential.

Certeau describes how New York City differs from Rome, Italy in the aspect that it never "learned the art of growing old by playing on all its pasts."[5] He goes on to explain how the city is constantly reinventing itself due to it not having a long history that gave it an identity. New York City is a city that is constantly exploding with new projects because its contributors and designers seek to challenge its future while forgetting the past. The layout of New York City is

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[4] Arjen Mulder. "TransUrbanism." *Transurbanism.* Rotterdam: NAI Publishers, 2002. 5.

[5] Michel de Certeau. "Walking in the City." *The Practice of Everyday Life.* Translated by Steven Rendall. Berkeley: University of California Press, 2002. 91.

very dense, which results in architects being forced to design vertically. The perspective one has looking down on a city from above allows one to "leave behind the mass that carries off and mixes in itself an identity of authors or spectator," thus making one feel powerful.[6] This is a unique perspective that can only be obtained in cities with a similar grid structure to New York City. Viewing a city from a skyscraper gives one a completely unique perception of the space compared to the perception at street view. This perception enables architects to design in two entirely different dimensions. As shown in Figure 1, the Zeckendorf Tower on the left establishes a uniform spatial quality throughout the verticality of the tower, whereas the intervallic intervention proposed adjacent to it within the same city block creates varying experiential qualities. This technique emphasizes particular views of Manhattan as one ascends the building and differentiates the spatial quality of occupying the street level in contrast to the upper levels. In these cities, humans are constantly looking into the future for technological advancement and efficiency because they tend to "move in the same direction and with the same speed as time, since we ourselves are part and parcel of the present."[7] Therefore, it is crucial that architects anticipate the future of society while they design.

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[6] Michel de Certeau. "Walking in the City." *The Practice of Everyday Life.* Translated by Steven Rendall. Berkeley: University of California Press, 2002. 91.

[7] Alfred Jarry. "Commentary and Instructions for the Practical Construction of the Time Machine." *Adventures in Pataphysics.* London; Atlas Press, 2001. 212.

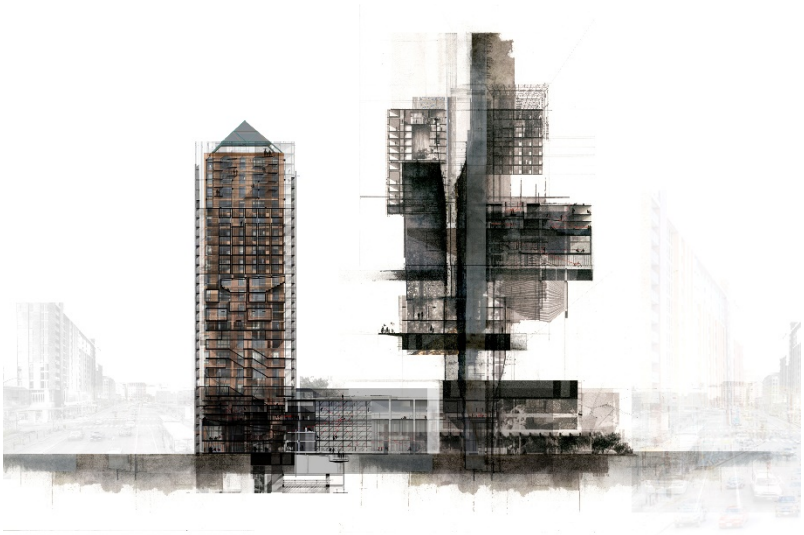

Figure 1: This sectional diagram depicts the transient vertical nature of design that the New York City grid system insights

As well planned as a city layout may be, it does not truly gain its identity and character until its residents have inhabited it. Humans do not traverse through a city based on scientific calculations or means that can be predicted, but rather by subtle cues and interests that are unique to each person. Kandinsky dreamed of "a great city built according to all the rules of architecture and then suddenly shaken by a force that defies all calculation [which] undoes their readable surfaces and creates within the planned city a 'metaphorical' or mobile city."[8] This remark explains that the success of a city cannot be perfectly calculated because each city possesses unique characteristics that separate it from any other city.

The manner in which a city is laid out determines many factors regarding how the city will be occupied and evolve. No human creation is a completely new idea because everything is

[8] Michel de Certeau. "Walking in the City." *The Practice of Everyday Life.* Translated by Steven Rendall. Berkeley: University of California Press, 2002. 110.

inspired by forms of nature. Biomimicry is an intriguing concept by which to design a city because in nature, there are no two specimens that are identical. This idea should be implemented in the design of cities in order to create meaningful architecture; however, many cities are confined to a grid layout which severely limits the architectural possibilities within the network of streets and rectangular plots of land.

The 1916 Zoning Law defines the outlines of the maximum construction allowed on each block of Manhattan. Only one fourth of the plot area is allowed to extend upwards without restriction at a certain point to admit light to the streets of Manhattan.[9] These invisible building envelopes allow for much more diversity when analyzing a city in the third dimension as opposed to a two-dimensional plan of the city. Koolhaas describes that, "the Zoning Law is not only a legal document; it is also a design project."[10] Although the grid system is efficient, it limits the possibility of hierarchy and scale within a city because each plot of land is of equal size.

Within Manhattan, "each block is covered with several layers of phantom architecture in the form of past occupancies, aborted projects and popular fantasies that provide alternative images to the New York that exists."[11] There are traces of the city's evolution that are evident throughout the architecture of Manhattan. As shells of old buildings are transformed, scabs are created that represent their past history. Koolhaas argues that Manhattan's form "is

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[9] Rem Koolhaas. Delirious New York: *A Retroactive Manifesto*. New York: Monacelli, 1994. 107.

[10] Rem Koolhaas. Delirious New York: *A Retroactive Manifesto*. New York: Monacelli, 1994. 107.

[11] Rem Koolhaas. Delirious New York: *A Retroactive Manifesto*. New York: Monacelli, 1994. 9.

completely false, none of the information it communicates is based on reality."[12] Koolhaas believes that Manhattan is an example of urban science fiction because it was artificially laid out as opposed to being created based on natural expansion over time which relies on articulation and differentiation.

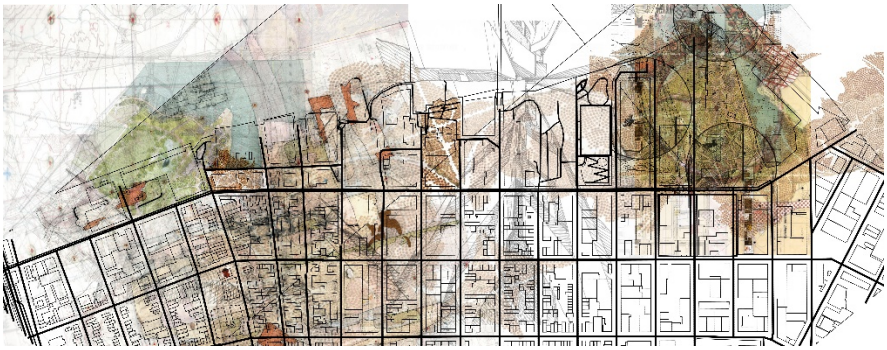

Figure 2: Plan diagram of the disintegration of the grid system in Brooklyn

By confining architects to rectilinear streets, design becomes limited in its cultural impact and sense of place within a city. Lefebvre describes how, "the city preserves the organic character of community which comes from the village."[13] In these grid-like planned cities, it is very difficult to create a meaningful new design that appears inviting because they "contain free spaces, the forms of which do not invite occupation with the old paraphernalia of living, the old ways of living and thinking. They are, in fact, difficult to occupy and require inventiveness in order to become habitable."[14] It is the objective of the architect to transform the rigid grid system into a desirable city. It is for this reason that architecture seeks "nobility

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[12] Rem Koolhaas. Delirious New York: *A Retroactive Manifesto*. New York: Monacelli, 1994. 15.

[13] Henri Lefebvre. "Right to the City." *Writings on Cities*. Oxford: Blackwell Publishers. 67.

[14] Lebbeus Woods. *Radical Reconstruction*. New York: Princeton Archtectural Press, 2001. 16.

of persistence in a world of the eternally perishing. Itself giving way to the necessity of the moment."[15] Thus, it should be the goal of every designer to create architecture that can pass the test of time and remain relevant and purposeful as everyday human life evolves.

The Manhattan grid challenges designers to create a block that stands out amongst the sea of blocks and outlast the constant flux of redevelopment. Koolhaas describes how, "more than 200 years into the experiment which is Manhattan, a sudden self-consciousness about its uniqueness erupts."[16] He further states that, "the city is in a constant state of change where exterminating principles are always redefining the concept of design principles. What one may consider refinement one moment suddenly becomes barbarism the next."[17] Manhattan is considered a mosaic of stories with their own lifespans that are competing to outlast the rest via the grid system.

Brooklyn is unique in the fact that it is undergoing a dramatic transition from an industrial district to an urban hub of experimentation and innovation. In the process, many existing buildings are being preserved and repurposed as opposed to being completely demolished and rebuilt. This strategy creates an interesting cultural dynamic in a city because it forces designers to reimagine historical buildings and incorporate their structures into a modern design.

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[15] Lebbeus Woods. *Radical Reconstruction*. New York: Princeton Archtectural Press, 2001. 17.

[16] Rem Koolhaas. Delirious New York: *A Retroactive Manifesto*. New York: Monacelli, 1994. 13.

[17] Rem Koolhaas. Delirious New York: *A Retroactive Manifesto*. New York: Monacelli, 1994. 15.

Extrapolated Edges: Establishing a New City in Brooklyn examines the concept of city blocks of New York City, creating a school, residential tower, market, and brewery within the limits of two city blocks. The intervention proposed in Brooklyn adheres to the edges of the city block with strategic breaks in the consistency to draw visitors into the sight and to extend the street, redefining the threshold between the street and the block. The site plan is laid out in a manner that abides by city block shape with controlled breaks in the consistency to allow for manipulation of the street edge. Along the vertical axis, there are shifts in the horizon to draw visitors into the sight and alter the waterfront skyline.

The studio project, Extrapolated Edges: establishing a New City in Brooklyn, reenvisions two adjacent city blocks in Brooklyn, while analyzing the threshold between the street edge and the city block. Figure 2 analyzes the grid system of Brooklyn and begins to break down the uniformity of its nature as it appears to disintegrate towards the shoreline. Incorporating Koolhaas' theory of designing in the vertical dimension, the project proposes a thirty-story residential tower while also revisioning the edge where the street meets the block two-dimensionally, creating an open market space. The concept of projected art joins the two-dimensional and three-dimensional aspects of the intervention by creating a fluid characteristic throughout the site. The Maker School, where digital and sculptural art is created serves as an architectural and programmatic transition between the public marketplace and the residential tower within the city block. Although a skyscraper of this proportion is unprecedented in this area of Brooklyn, it anticipates the rapid redevelopment that Brooklyn is undergoing in phases as it transitions from an industrial city to a residential and commercial hub.

Pedestrians encounter the brewery and open market space as they approach the site on foot that transition to a thirty-story residential tower set back at the opposite edge of the site. This allows for a more private environment for the residents and preserves sightlines along the waterfront to avoid having a detrimental impact site. The market serves as an extension of the street edge, opening it to the public and serving multiple functions. As shown in the plan in The structure of the brewery, located in Figure 3, is split throughout the sight so visitors enjoy the beer at the most public protruding edge of the site, along the water's edge, but are drawn through the site to experience the process of brewing the beer on the opposing edge where the sculptural tanks are located.

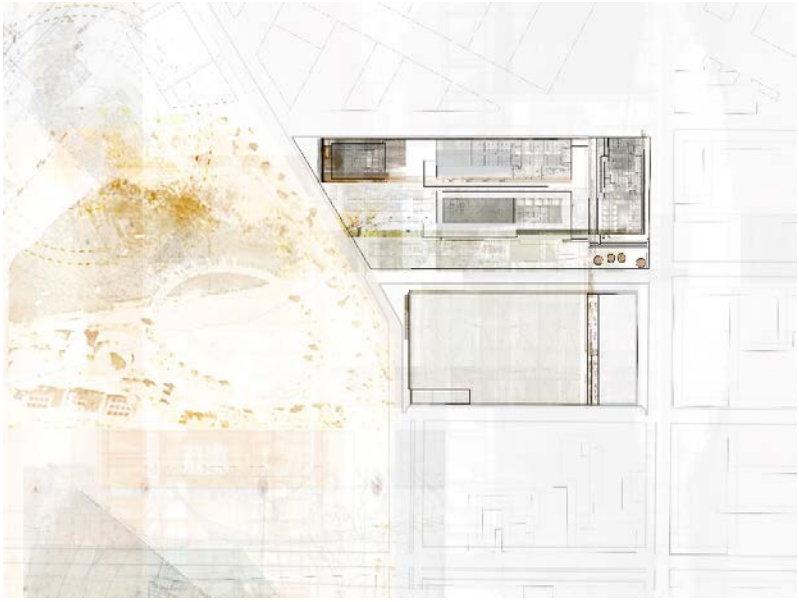

Figure 3: Plan diagram adhering and defying city block edge

Figure 4: Section diagrams depicting transient spaces through site

The transition from a constructed ground condition to the articulated ascension is abstracted in Figure 4. The Maker School serves as a transitional space between the private and public sectors of the site because it is predominantly occupied by the residents of the site but also has exhibitions that are open to the public. It exists within the retrofitted shell of an existing warehouse on the site, composed of heavy, industrial materials that are common throughout Brooklyn and reflect the city's history. This reinforces Koolhaas' principle that, "each block is covered with several layers of phantom architecture in the form of past occupancies, aborted projects and popular fantasies that provide alternative images to the New York that exists."[18] The beams of the warehouse seen in Figure 5 reach beyond the Maker School and connect with the airy glass market structure to create an overhead condition that links the two interventions. The perspective image depicts the contrasting materiality of the open market space in relation to the heavy construction of the Maker School, preserving the industrial character of the site.

Within the structure, students create large scale metal sculptures that are displayed throughout the site as well as digital art that can be projected onto the building surfaces

[18] Rem Koolhaas. Delirious New York: *A Retroactive Manifesto*. New York: Monacelli, 1994. 9.

throughout the block. The projected art serves a similar purpose to graffiti but can be manipulated and transformed throughout the course of a day, season, or year. The temporary nature of digital graffiti allows the architecture of the intervention to transform to reflect Brooklyn's "constant state of change where exterminating principles are always redefining the concept of design principles."[19] Because projections have a malleable quality, the characteristic of the site can to be altered as time passes, preserving the relevance of the architecture. It is important that the function of the artwork is able to change as society develops, especially in Brooklyn, a city whose identity is undergoing a dramatic transformation. It also takes on a unique characteristic from various perspectives, whether one is at street level looking within the site, approaching the site on foot, or distanced from the site in a car or on the ferry. Incorporating shifts in the horizon, as well as projected art, allow the sight to ground itself within the context at different scales of the individual block and the city as a whole.

Figure 5: intermediating boundaries

[19] Rem Koolhaas. Delirious New York: *A Retroactive Manifesto*. New York: Monacelli, 1994. 15.

The adjacent site to our primary intervention will remain predominantly intact, serving as a vacant warehouse available for future expansion of the site. However, a pedestrian walkway will be carved through the structure, splitting it into two sections, creating a smaller scale street edge and another entrance leading into the site. It will have a similar skin applied to the exterior of the site, seen in Figure 6, which resembles the skin applied to the residential tower. This gives the two city blocks a similar nature suggesting that the microcosmic street edge leads to the primary site. Lastly, the adjacent site will allow for roof access to provide a vantage point for staging and viewing the projected art from another perspective.

Figure 6: fluid skin structure

As Brooklyn continues its dramatic transformation from an industrial borough to a cultural hub filled with creative experimentation and innovation, it is undergoing a reshaping its identity. Throughout this process, it is essential to preserve elements of Brooklyn's history because that is what has enabled the city to develop into its current state. The infrastructure that remains from Brooklyn's industrial past along with the technological advancement that

instigated the decline of its relativity have served as the framework for Brooklyn's current development.

In a society that seemingly develops more rapidly than a building can be constructed, it is critical that architects design buildings that can withstand the test of time. In particular, New York City is confined to a grid system that restricts design opportunities two-dimensionally, thus emphasizing the vertical dynamic of the city. Skyscrapers provide a unique perception of the city block system because inhabitants are constantly transitioning between occupying the city at street level to towering over the grid system from a vantage point. Koolhaas describes how, "the city's scale explosion is controlled through the drastic assertion of the most primitive model of human cohabitation. This radical simplification of concept is the secret formula that allows its infinity growth without corresponding loss of legibility, intimacy, or coherence."[20] The city is able to thrive despite being in a constant state of change because the grid system unifies all of the functions of daily life that exist within it.

[20] Rem Koolhaas. Delirious New York: *A Retroactive Manifesto*. New York: Monacelli, 1994. 108.

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