

Flexible City: Architecture as Framework

In the context of large-scale, contemporary urban development driven by external contingencies, this paper posits a new critical architecture at this scale—one that establishes autonomy, while also remaining culturally relevant at any given moment in time. This is possible first, by achieving flexibility and second, by defining the architectural object as a physical framework. This framework operates in a variety of ways and at multiple scales to blur contingent qualities, while delineating possibilities.

CRITICAL OBJECT

In his article, “Critical Architecture: Between Culture and Form,” K. Michael Hays defines a critical architecture as one that

“...cannot be reduced either to a conciliatory representation of external forces or to a dogmatic, reproducible formal system.” The critical object is simultaneously “worldly and self-aware.”¹

Using this definition as a starting point, we see Flexible City as a critical architectural object: able to maintain its autonomy in an era of increasing atomized sets of formal and conceptual generators.

Flexible City is a project designed by this paper’s authors as a response to an invited call for alternatives to the proposed four million square foot development by Forest City Ratner / Frank Gehry at Atlantic Yards in Brooklyn, NY. The 22 acre site stretches from the intersection of Flatbush and Atlantic Avenues east to Vanderbilt Avenue and represents the largest single-source development in NYC history. Any urban development at this scale suffers from the sometimes overbearing legal and economic contingencies present. In *Metropolis of Tomorrow*, Hugh Ferriss laments this condition in the context of the 1916 Zoning resolution in New York and argues that design is being reduced to responses to practical and general conditions. He instead advocates for examples where form and setbacks are not decided by building regulations, but rather through an authorship delineated by the designers.²

The intention of the resulting exhibition of Atlantic Yards Alternatives was to call into question, like Ferriss, the very nature of the kind of development that prevails in New York City during times of heightened growth. The city falls under increasing pressure from developers to give out zoning variances and financial breaks that continue and increase development at the cost of public space and amenities. Happening all over the city at the same time, this leads to a radical change in the very fabric of the city without considerations beyond the economic. Already much higher than the given zoning parameters of the site, the Forest City Ratner / Frank Gehry proposal lacks any truly public space or program, lacks the sufficient

FARZANA GANDHI

New York Institute of Technology

MATTHIAS ALTWICKER

New York Institute of Technology

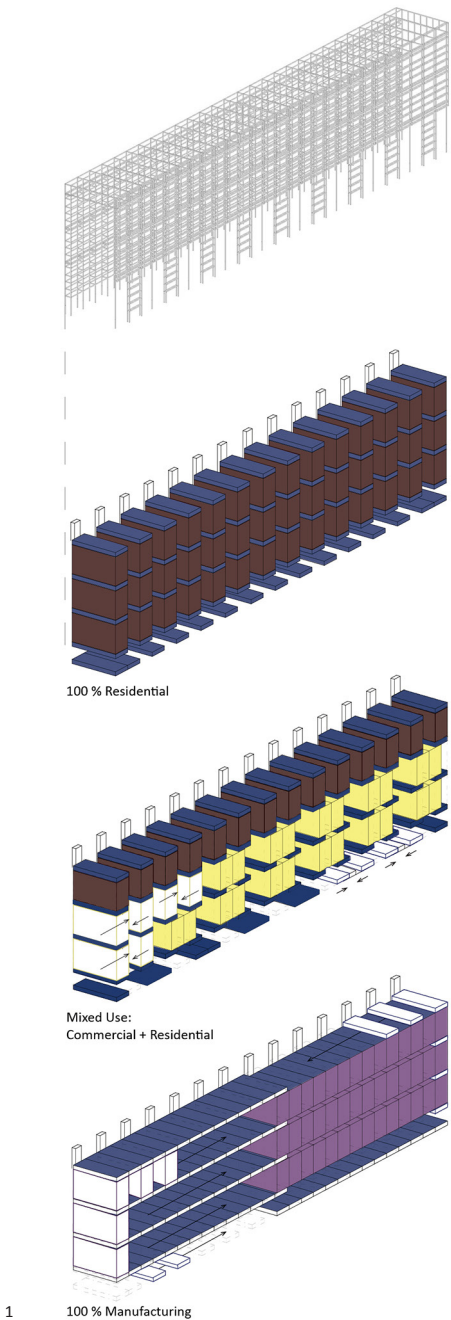


Figure 1: Programmatic scenarios

environmental standards necessary for sustaining such a project, and provides reduced percentages of affordable housing. In short, the project shows an utter lack of acknowledgement of the changes in large scale housing concepts since the 1940's. As a counterproposal, Flexible City articulates and makes visible these considerations as a starting point for a radical and viable solution to the problem over time. The formal arrangement(s) become a directly visible representation of the problem and solution, at the same time.

FLEXIBILITY

The contemporary city is in constant flux—buildings are abandoned, neighborhoods are re-zoned, and the very life and nature of the people who live and work in an area can be threatened within just a few years. It is within this context that the contemporary city is also confronting population rise and housing shortages like never before. How can a large-scale, high-density development prevail against changes in use, economies, and infrastructural demands? Our project offers a new model for such development—one rooted in flexibility.

By definition, flexibility anticipates change and adapts to the cultural and socioeconomic factors to make it relevant at each moment in time. In this project, it is through flexibility that we also seek to detach the architecture from the many time and location specific parameters that control the articulation of typical non-architectural factors. The flexibility, thus, feeds autonomy by creating its own internal logics with important, but limited relationships to external conditions and factors. This flexibility is universal and offers long-standing but very real and quantifiable (ie. economic and social) value to a variety of constituents: the individual unit dweller, the property owner, the developer, the neighbor, and the city.

Specifically, flexibility is achieved in the project through a complete separation of inhabitable volume and a guiding framework. Neutral, inhabitable 60' x 180' volumes move freely across the site and plug into this framework at core locations. The eight story volumes (constructed as four double height floors) can be programmed with housing, commercial, or manufacturing space. Single story volumes lie above and below each eight story volume and double as community program and green zones, collecting rainwater for reuse. Each element can operate at full potential and easy internal and external reconfigurations are possible. As a result, a variety of programmatic scenarios and contextual relationships can be optimized, while also offering new typologies and scales of open space. This set of parameters is what guides a critical and physical *framework* for the overall project.

FRAMEWORKS

The framework of Flexible City embodies three different types of traditional framework definitions—a planning framework, an organizational framework, and a functional framework—all within a single structure. This range of definitions allows the object to exist simultaneously as urban design and building design, blurring any otherwise clear contingent qualities and physically actualizing the possibilities.

How does Flexible City relate to the larger **planning framework** of the city of New York? Given the developer's brief of four million square feet tightly packed within the site, the project does not pretend to fit contextually in scale with the vertical dimension of the low-rise neighborhood beyond. It does, however, use the base dimensional area (length and width) given by the New York City grid as one generator for form. The Atlantic Yards site is comprised of three typical NYC urban blocks (230 feet x 850 feet). In volume, the Flexible City project is a simple extrusion of two such blocks lined up linearly with the third block left to meet infrastructural and parking demands. The project is conceived of modularly, broken up into 60 foot bays repeated across the length of the city blocks. The project "ends" at the limits of the given site, but as is suggested by the New York City grid, can be extended directionally to accommodate further growth and expansion.



2

As such, the Flexible City framework also operates with the qualities of an **organizational framework**, such as Ludwig Mies van der Rohe's IIT campus—one that takes equal control over the third dimension as the horizontal dimension to control space and form and therefore, objects. The twenty-four foot square grid that invisibly overlays the campus to guide its order defines the relationships of campus to the city, of building to campus, and also of the spaces between the volumes that are slid and then fixed along the underlying grid (both at the campus scale and also within the buildings themselves).

Figure 2: Atlantic Yards, Brooklyn, NY

Flexible City operates within its own organizational framework—one that is three dimensional and that similarly sets up relationships between the project to New York City beyond, between the volumes against a structural frame, and between the spaces between volumes as they slide against the project's grid. These occupiable and moving volumes are lifted thirty feet in the air to allow free pedestrian use, movement, and access along and across the site. The Atlantic Yards rail pit is kept uncovered to offer exciting views and relationships to the infrastructure below. The ground plane moves just as the volumes can move above to create 60 foot wide bridges across the rail or programmed areas as large as a soccer field, for example, when plates are linked together. The public life of the street at grade is meant to be carried up through the project with similarly scaled open spaces dispersed throughout. These are accessible to the public through circulation cores brought down to grade.

The framework of Flexible City is also a **functional framework**, holding up the volumes and offering them a structure for their movement. Its concrete cores add rigidity and contain vertical transportation for public circulation and mechanical systems. Additionally, the framework acts as an infrastructural wrapper of wind turbines, solar arrays, and rainwater collectors that meet full energy and water demands for a variety of configurations.



3

Flexible City, thus, offers a critique of the mega-block gated communities that are increasingly becoming the standard in high-density cities around the globe. Such complexes are programmatically and infrastructurally separate from the urban fabrics within which they lie and result in social enclaves that pronounce economic and cultural differences, both inside and out. As an alternative, Flexible City plans for a growth in density, water/energy demands, and changes in use. The project's framework allows for any optimal combination of mixed use and green space—with larger volumes linking together to offer places for work (office, manufacturing) and smaller volumes offering any number of urban activities (retail, restaurants, schools, libraries, gallery, daycare, etc). Music, art, and other forms of cultural expression are free to inhabit the city's open spaces to cultivate diversity and also characterize its evolution over time. With a cemetery planned on-site, one can conceivably be born and die within the city itself, having lived a rich life either moving about the city to accommodate changes in family structure, for example, or staying simply in one unit throughout, but with an ever-changing context around.

One may argue that an endless variety of rich interior and exterior experiences can exist between the project's skeletal frame and the volumes, defined by the potential misalignments and dialogue between the volumes themselves. Although continually changing in image, this is a flexible architecture that is first identifiable by the form of its framework. This makes autonomy possible by acting as a **literal trace** of a potential future or a recent past and as a **literal frame** for the new views of the context that occupation of the framework provides.

Figure 3: Relationships between volume and skeletal frame



ENDNOTES

1. Hays, K. M. (1984). *Critical Architecture: Between Culture and Form. Perspecta*, 21, p. 17.
2. Ferriss, H. (1929). *The Metropolis of Tomorrow*. New York: Ives Washburn. p. 20.
3. Hays, K. M. (1984). *Critical Architecture: Between Culture and Form. Perspecta*, 21, p. 27.

4

SCALE AND AUTONOMY

The framework of the proposal is both spatial and technical, which makes it both time specific and universal. Because the situation is large scale, it is automatically legible as autonomous. This autonomy comes in a large part because the object can not only order the context but become the new context. Regardless of what will occur around this framework, or the future use of the framework itself, it will retain its autonomy as a physical structure outside of a particular time.

In this way it is analogous to larger engineering structures—aqueducts and stepwells, mill bridges and railway supports are all occupiable infrastructural objects that transcend a singular time. Like Flexible City, they become iconic through their ability to remain relevant though time without becoming cultural artifacts of a specific time. The framework of Flexible City is not a building framework in the conventional sense and therefore, cannot be read at the scale of a building. On the other hand, the concept of a physical framework remains discipline specific, allowing the project to retain autonomy as a critical architectural object. This autonomy allows an oscillation between culture and form while always remaining architecture.

“Repetition thus demonstrates how architecture can resist, rather than reflect, an external cultural reality. In this way authorship achieves a resistant authority—an ability to initiate or develop cultural knowledge whose absolute authority is radically nil but whose contingent authority is a quite persuasive, if transitory, alternative to the dominant culture.”³

Figure 4: Framework as critical object