

Shifting urban design paradigms in the development of two New York projects: Battery Park City and Hudson Yards

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Abstract

Two major property developments in Manhattan, New York City illustrate the evolution of urban design paradigms since World War Two. Both projects evolved over time beginning in the mid-1950s. The first, Battery Park City in Lower Manhattan, was finally built according to a 1979 master plan prepared for and controlled by a public benefit corporation while the second, Hudson Yards, is following a 2008 master plan prepared for a public agency but controlled by a private company. The first was built out by 2012 while the first phase of the second was completed in 2019. The former was a public sector project strongly promoted by private interests; the latter was and remains the largest private development in the history of the United States. Both schemes were beset with political and financial travails that are manifested in the series of urban design proposals made for their sites. The implemented schemes represent two diametrically radically different urban design paradigms. Battery Park City is a neo-traditional urban design that set out to be New York in character; Hudson Yards is an international hypermodern design that reflects the global neo-liberal competitive spirit of the early twenty-first century. The two paradigms represent different socio-economic attitudes and ideas of what makes a good inner-city environment.

Keywords: Design paradigm; politics; finances; New York

Introduction

In his 1983 paper, *Program vs Paradigm*, Colin Rowe asked the question of urban designers: Should large scale projects be based on currently accepted paradigms of what constitutes good schemes or should they be based on detailed programs specifying the full range of functional ends that a project can serve? (Rowe, 1983). These ends range from housing sets of activities to the highly intellectual aesthetic ends of interest only to the architectural cognoscenti (Lang and Moleski 2010). Few urban design projects have been based on a thorough programme-based approach to design. Most have been based on the currently prevailing design paradigm developed by contemporary leaders in the field of architecture to serve their own concerns. Jane Jacobs called them “architectural saints” (Jacobs, 1961). Today they are referred to as starchitects.

Implicit in the paradigm-based approach to urban design is a typology-led design method (Graves, 2020). A generic solution that is representative of a paradigm is selected as the basis for a new design and either copied or imitated to meet the requirements of the development’s sponsors (Lang, 2017b). The two represent what is currently considered good design for the task function of a proposed development – central business district, residential neighbourhood, business campus, etc. A copy is the replication of a type. Imitation, in contrast, is a truly creative act involving the process of creating something new – not necessarily novel – out of the study of the principles underlying a precedent, type, or generic solution (Steil, 1988). Some urban designs are, pragmatically, a pastiche of bits and pieces of several paradigms.

The period from the end of World War Two to the present has seen the evolution of a series of generic solutions for mixed-use urban designs based on co-existing design paradigms each with its own protagonists. The character of two Manhattan, New York property developments, Battery Park City and Hudson Yards, as implemented, represent architects’ ideas of good design in two very different socio-economic and political eras. The 1970s, when the final design of Battery Park City was produced, possessed a cooperative spirit and a concern for the public welfare. Hudson Yards, designed three decades later, represents global financial interests and global architectural ideas in a neo-liberal economic setting. The design of the first was based on empiricist thinking; the second is a hypermodern rationalist design. Both involved considerable pragmatic, economically-minded approaches, without which they would have remained unimplemented.

Battery Park City

In the 1950s, Lower Manhattan had a residential population of 4,000 people; the daytime population swelled to 350,000 as workers commuted into it. The district was deserted on weekends except for tourists passing Wall Street heading to Battery Park to catch ferries to Liberty and/or Ellis Islands. The Downtown Lower Manhattan Association (DLMA), founded in 1958 and headed by David Rockefeller, an investment banker, was worried about the economic future of the district in which they held vested interests. DLMA became so powerful that the public agencies of the City of New York often followed its recommendations. For instance, DLMA successfully pressured the New York Port Authority to



build the World Trade Center (WTC) in Lower Manhattan in the expectation that it would have a catalytic effect on the district's development (Ruchelman, 1977; Gordon 1997). Ground was broken for the WTC's twin towers in 1966. They were completed in 1973 but DLMA felt it was insufficient to maintain the economic health of the financial district. It sought other projects.

The finger wharfs on the Hudson River in Lower Manhattan were abandoned in the 1950s after shipping moved to modern facilities across the river in Elizabeth, New Jersey. DLMA perceived that the rock and earth from the excavation for the WTC and other nearby sites could be used to fill in the Hudson from the bulkhead to the pierhead line of the wharfs. Doing so would form a 92-acre (37-hectare) site for a mixed-use development that would bolster the residential population of the district. DLMA was worried about the future if Lower Manhattan businesses sought locations closer to their workers' residences elsewhere (Gordon 1977).

Creating the site led to debates over whether it belonged to the City of New York or the State of New York. Competing development proposals ensued. There were four of them between 1963 and 1966. The first was that of the City's Department of Marine and Aviation, the second was presented by the DLMA, the third by the State of New York, and the fourth by the City's Planning Commission (Gordon, 1997; Plasencia, 2021). Their purpose was to get more people living in lower Manhattan and get more parkland there. They were paradigm-led designs based on what Rowe (1983) would have regarded as superficial programs.

The City's Department of Marine and Aviation proposal was prepared by Eggers and Higgins, architects. Given the Department's self-interests, it included six commercial piers (despite shipping having left Manhattan), a helipad, eight office buildings, eighteen cruciform shaped residential towers, and a cylindrical hotel standing in the Hudson off the site's southern tip. The design was loosely based on Le Corbusier's Plan Voisin for Paris (1925) with its towers set as objects in open space (Le Corbusier and Jeanneret, 1964). The Le Corbusian design paradigm was a response to the polluted nineteenth century industrial city, the effects of World War One, and the Spanish Flu epidemic and the desires of the scheme's sponsor, a luxury car manufacturer. While based on a very limited model of the potential functions of the built environment, the Voisin Plan was regarded as an exemplar of good urban design practice.

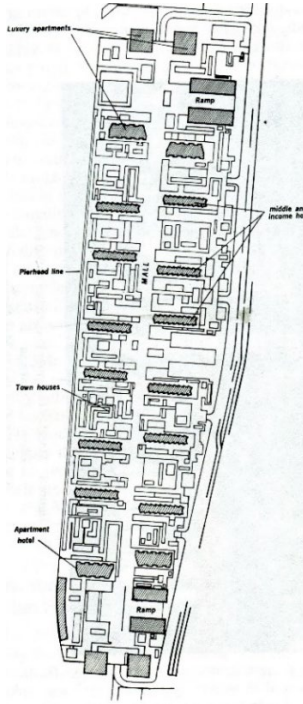
The second proposal, that of DLMA, was an imitation of similar rationalist ideas. It consisted of a series of slab building set in rows in a manner akin to the Bauhaus housing proposals for 1930's Germany. While promoted by David Rockefeller and the contemporary mayor of New York, Robert F. Wagner, critics received it with little enthusiasm (Gordon, 1997). It did, however, goad the State of New York into a response.

The State's program for the site included housing for about 1400 families, a substantial hotel, two office buildings, parks, and public service buildings. Known as

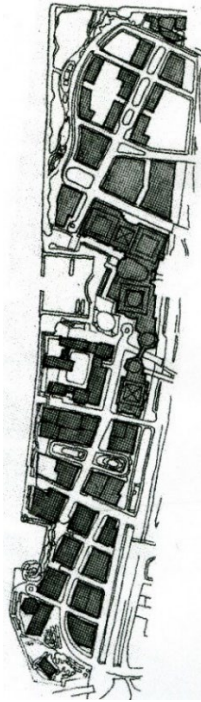
the Governor Rockefeller's plan, it was drafted by Governor Nelson Rockefeller with his favourite architects, Harrison and Abramovitz. It consisted of slab buildings set in open space, a design paradigm imitated in much contemporary social housing around the world. It was dismissed as sterile and lacking any public benefit by Ada Louise Huxtable, an architectural critic for The New York Times, as politically, if not as financially powerful as the DLMA (Huxtable, 1973; Gordon, 1997). The design elicited a very different response from the New York City's Planning Commission.

In 1966 Mayor Lindsay asked Wallace, McHarg, Roberts, and Todd (WMRT) to produce a plan for the City Planning Commission. He sought a design as successful as the firm's Charles Center and Inner Harbor had been in revitalizing Baltimore's core (Willis, 2003). Based on observations of housing types along waterfronts that appealed to middle-income people, it was more empiricist in nature than the earlier proposals. The scheme extended stepped housing situated around coves, and an esplanade from the East River side of Lower Manhattan through the whole Battery Park City site (Gordon, 1997; Willis, 2003). Never developed into a full proposal, it saw the deferment of the Le Corbusian paradigm as the model for large scale developments in New York.

With little progress in developing the site, in 1968 the State's legislature, prompted by Governor Rockefeller, formed the Battery Park City Authority (Ursted 2008). Its task was to plan, build and sustain a mixed-use community. Its first design was a radical reaction to the earlier proposals. Prepared by Concklin and Rossant and Harrison and Abramowitz in 1969, it was a horizontal megastructure running the whole length of the site (Huxtable, 1973). The design drew on the exploratory megastructure, urban paradigm being promoted at the time (for example, Soleri, 1969). The design consisted of a seven-story, partly enclosed mall housing a variety of urban functions and amenities – housing, shops, restaurants, schools, parks, recreation facilities – with access to transit lines. Its ambitious nature was considered appropriate for Manhattan. No public source was, however, able to provide the subsidies necessary to attract developers to build such a mammoth project. BPCA needed a more pragmatic plan at a time when New York was in the economic doldrums (Gordon 1997). It had to be developer friendly.



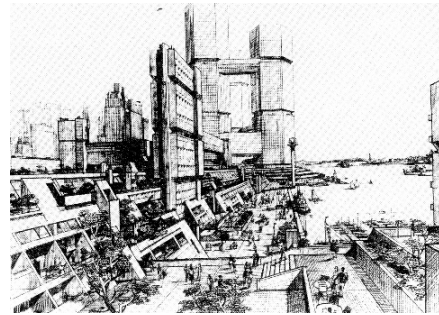
a. State (Governor Rockefeller's) plan, 1966 (Source: Gordon, 1997)



b. Cooper-Eckstut's plan 1979 (Source: Gordon, 1997)



c. The WMRT proposal, 1966 (Source: Public Domain)



d. The Megastructure proposal, 1969 (Source: Gordon, 1997)



e. Battery Park City in 2019, with One Liberty Place of the World Trade Center Memorial in the background (Source: Public Domain)

Figure 1: Battery Park City

In 1975 the BPCA divided the site into separate residential clusters that could be built independently. Lefrak and Fisher, a family-owned property developer, produced two proposals for it. One, designed by Moshi Safdie was based on his 1967 Habitat in Montreal. It did not proceed. The other was a pod scheme designed by

Harrison and Abramowitz. The pods formed isolated, controllable, middle-class worlds. They were to be linked by an elevated walkway as proposed in many contemporary urban designs for European cities. It was unclear who would finance the infrastructure. One of the



Pods, Gateway Plaza, was, however, completed in 1982. By then the BPCA had a different masterplan.

The 1970s was a period of fiscal and intellectual upheaval in New York. The city had high short-term debts. Half a million jobs had moved out of Manhattan. The observations of Jane Jacobs, a champion of modernist designs until she recognized their shortcomings, in *The Death and Life of Great American Cities* (1961), of Oscar Newman in *Defensible Space* (1974), and of William H. Whyte, as later published, in *The Social Life of Small Urban Spaces* (1980) were widely known. Contemporaneously, Mayor Lindsay had formed the Urban Design Group to pragmatically balance public and private interests in urban developments (Barnett, 1994). New ideas for Battery Park City were developed in this intellectual and political atmosphere.

The 1974 design, produced by NY City's Office of Lower Manhattan Development at the behest of David Rockefeller, owed an intellectual debt to the 1966 City Planning Commission design by WMRT. It was not worked out in detail, but it did propose view corridors from the center of Lower Manhattan to the Hudson that were incorporated in the 1979 Cooper-Eckstut design. Rockefeller was also instrumental in Vollmer Associates being hired to produce a land use plan for the site. Recognizing the catalytic impact of the World Trade Center, Vollmer recommended that a commercial core of six million square feet (557 square meters) be located opposite it and that 14,000 units of residences, along with a school and a hotel stretch to the north and south of it. Vollmer also proposed that a third of the site be open space and that an esplanade should run along the Hudson. These requirements formed the basis of the Cooper-Eckstut plan. Later museums and memorials were incorporated at the behest of various lobbying groups.

Until 1979, the site had been leased to the BPCA. The financial problems of the 1970s led New York State's Urban Development Corporation to step in and transfer the land title to the BPCA. Having the title enabled the Authority to make decisions rapidly. Payment on a \$200 million bond issue had to be made in 90 days and a plan requiring the approval of the State legislature had to be made immediately (Gordon 1997). Cooper-Eckstut's radically simple proposal's intellectual foundation paralleled the development of what has become the paradigm of the New Urbanist Movement. The program was richer than the earlier ones and the site was divided into easily developable parcels to make the scheme's implementation straight-forward.

The proposal had six specifications that implicitly formed part of the program for the design. Battery Park City was: 1) to be integrated into Lower Manhattan; the district's street pattern had to continue through the site, 2) to have circulation at ground level, 3) to be New York in character, 4) to have the commercial buildings as a foreground complex with the residential buildings as background, 5) to be able to respond to changes in market place demands, and 6) to be a high status development. The northern end of the site was to be a park, and public art would terminate the vistas from the center of Lower Manhattan

on each street to provide foci of interest and to symbolize 'high class'.

The center piece of the design is the four commercial building complex that forms Brookfield Place (formerly the World Financial Center). A Canadian firm, Olympia and York, was the property developer. After a limited design competition that it organized, César Pelli Associates was selected to be the complex's architect. The design exemplifies the firm's brand of work being like its designs for One Canada Place (1991) in the Docklands, London and the Iberdrola Tower (2012) in Abandoibarra, Bilbao. At the heart of Brookfield Place is the Winter Garden, a 120-foot (36-meter) tall steel and glass-enclosed public space. Adjacent to it are luxury goods stores and fine restaurants. Outside, to the west, is a 3.5-acre (1.5-hectare) plaza designed by Pelli and landscape architect M. Paul Friedberg. It surrounds a marina where luxurious craft are moored.

The financial success of the center acted as catalyst for the development of residential areas first to its south and then to its north. The buildings were developed and designed individually with the goal of obtaining a diverse but, nevertheless, architecturally unified scheme. To achieve this end, Cooper-Eckstut created design controls/guidelines for the design of the buildings (Barnett, 1987). They stipulated the nature of materials, the location of string courses, that buildings should have articulated bases and cornices, and specific window-to-solid-wall ratios. Buildings had to be built to the property line. The controls were based on the character of the buildings in parts of Manhattan, such as Gramercy Park and Morningside Heights, that are much admired by New Yorkers.

Bonds matching long-term financing with capital funding were used to finance the infrastructure (Gordon, 1997). The BPCA had the public spaces built to high standards to ensure a solid financial return from the sale of the individual building sites. The esplanade was designed by Hanna-Olin, a Philadelphia-based landscape architectural firm. The hierarchy of levels in its cross section has become a paradigm for subsequent waterfront walkways.

Battery Park City was ultimately an empiricist design based on what was perceived to work well in Manhattan. It is a New York scheme tied into Lower Manhattan by cross streets. Hudson Yards, in contrast, is global in character. It has to compete architecturally with the dramatic skyscrapers and open spaces of the emerging commercial centers of the world. Its program came out of the need for it to be financially rewarding and from design explorations. It drew on the experience and aspirations of its developer, Stephen Ross of Related Companies, and his architects' image of a good urban environment for the twenty-first century. Le Corbusier's rationalist spirit hovered in the background.

Hudson Yards

The Hudson Yards Real Estate Development is an air rights development located east of the West Side Highway in Midtown Manhattan. It lies within a larger city planning proposal produced by New York City's



a. Extell Development Company Proposal (Source: Public Domain)



b. Brookfield Properties Proposal (Source: Public Domain)

Figure 2: Two of the competing proposals for the development of Hudson Yards

Department of City Planning and its Economic Development Corporation. The project is located on a 28-acre (11-hectare) platform over the tracks of the West Side Rail Yards where trains of the Long Island Railroad are parked in off-commuting hours.

The idea of building on the air rights over the railyard goes back to the 1950s with the goal of extending the central business district of Midtown Manhattan west to the Hudson. The initiatives to do so were private-sector-driven but various mayors and departments of New York City's government were heavily involved in championing differing possibilities. It took over six decades of proposals and counterproposals for the first phase of the development to reach its implemented form in 2019.

The first significant proposal affecting the site came from William Zeckendorf, a prominent New York property developer. In 1945, he proposed a mile-long deck be built along the Hudson. Its surface would be an airport. Far-fetched, it was neither politically viable nor fundable. Two decades later U. S. Steel proposed a housing development on the site (Bedington 1964). Contemporaneously, Mayor Wagner proposed to build a housing and commercial development on the site's air rights. Neither the details nor how these proposals would be implemented were clearly identified.

In 1973 the City Planning Commission created a master plan for Hudson Yards as part of a larger project. It included an extension of the subway system to serve the site, a park, and a boulevard. The idea was for the area to become a mixed-use commercial and residential neighborhood. The subway extension and station to give access to the site would be financed through the creation of a tax-increment zone. The increase in tax revenue yielded by the catalytic impact of its development would be used to further finance it. Explorations of what should actually be built continued with the Regional Plan Association, a respected NGO, producing a developer-friendly modernist proposal of slab buildings lining a

park linking Midtown Manhattan to the Hudson (Regional Plan Association, 2004). It sparked some thought.

In 2005, the New York City Council changed the district's zoning so that its eastern portion could contain Class A office space, housing units, hotels, a school, and retail and park space. This area became Phase One of the Hudson Yards development. The western side of the site down to the Hudson River was reserved for a retractable roofed stadium seating 85,000 spectators. It would be a venue for events of the 2012 Olympic Games and subsequently the home of the New York Jets football team and serve as a convention center (Bagli, 2005). The proposal was politically unviable and was shelved when London was chosen to host the Olympics.

In June 2007, the Metropolitan Transport Authority (MTA) and the city government issued a request for proposals (RFP) from property developers to create a mixed-use precinct on a platform over the yards. Neither building types nor aesthetic requirements were specified in depth. Those decisions were left for the proposers to define. The MTA received five proposals. They were from: 1) Extell Development Company with Steven Holl Associates as architects, 2) Related Companies with architects under the leadership of Kohn Pedersen Fox Associates (KPF), 3) Brookfield Properties, with a team of architects headed by Skidmore Owings and Merrill, 4) Tishman Speyer Properties with Helmut Jahn and Peter Walker, a landscape architect, as designers, and 5) Durst Organization and Vornado Realty Trust with FXFowle and Pelli Clarke & Partners as architects (McKeough 2007). The developers were highly experienced and the architects were leaders in the architectural, if not urban design, world.

The proposals, while pragmatic, were imbued with modernist and hyper-modernist design ideas. They all promised "vibrant neighbourhoods" with "inspiring open spaces". The precinct would be a "twenty-first century urban design" fit for a pluralistic, neo-liberal economic



society. Rockefeller Center was rejected as a precedent. That complex, although a much-admired, urban node and tourist attraction is a product that has the imagery of past times and not the future. Hudson Yards had to compete financially and architecturally with Abu Dhabi, Dubai, and Shanghai. In Colin Rowe's terms, the proposals were all based on a current global design paradigm. Creating the proposals followed a design-first approach with the program for the types of buildings and open spaces and their aesthetic qualities emerging from the exploration of design possibilities. The architects sought, in a rationalist spirit, to create ideal places different from the past that would "change not only the way New York City looks but how the world looks at New York" (Bravo, 2016). In all the proposals the buildings were individual objects with an open space at their center (McKeough, 2007; Langer, 2019; Wainwright, 2019).

The infrastructure for the development was funded by the City of New York, the State of New York, and the MTA. They were subsidizing a major private development. With foresight the railyard had been built in the 1980s with the possibility of its air rights being exploited while allowing the trains of the Long Island Railroad to come and go during the construction of a deck. That platform, designed by engineers Thornton Tomasetti Group and Arup Associates, includes ventilation, cooling, and storm water retention systems. 234 caissons drilled into the bedrock between the rail lines support it (Hudson Yards, New York, 2019).

In 2008, Tishman Speyer was awarded the contract to develop Hudson Yards. The company paid \$1 billion for a 99-year lease of the air rights. It planned to spend another \$2 billion on the buildings to be erected on the deck. Its proposal included four office buildings and ten high-rise residential towers. The contract was soon cancelled because the company was unable to secure tenants for its proposed office buildings and sought zoning changes that would have reduced the viability of the MTA station. The MTA immediately negotiated a contract for the lease of the site with Related Companies under the direction of Stephen Ross, its major shareholder and executive director, and Oxford Properties (Kobak 2008). The financial agreement reached assured the economic viability of the station serving the area. The city had already invested \$2 billion of an overall budget of \$5.6 billion in tax breaks and other incentives on the site to build the subway extension. In return for the significant public investment, Hudson Yards was expected to yield \$500 million a year in taxes to New York City and to increase the city's GDP by \$19 billion a year.

At that time Related Companies said its design will be:

... far more than a collection of tall towers and open spaces. It will be a model for 21st century urban experience; an unprecedented integration of buildings, streets, parks, utilities, and public spaces that will combine to form a connected, responsive, clean, reliable, and efficient neighborhood (cited in Mattern, 2016).

Hudson Yards was to be a progressive project that would be recognized as a new urban design and architectural

paradigm. It would be an eye-catching, luxurious, internationally renowned place and a node comparable to Rockefeller Center.

The completed first phase of the design consists of residences, a hotel, office buildings, a seven-story shopping mall, and a cultural center, The Shed (Lambrou, 2017). The first four skyscrapers were built at the corners so they could be built on solid ground. The towers, exemplars of hypermodern architecture, are crystalline – angular and glazed – with large atriums (Wainwright, 2019). The buildings are more geometrically dramatic and global in style than those shown in the Related Companies's original submission. Although the organization's reputation was built on its building of subsidized low-income apartments, Hudson Yards caters to the luxury residential and commercial market. It is seen by the public as "a symbol of modern luxury and progress" (Roberston 2023).

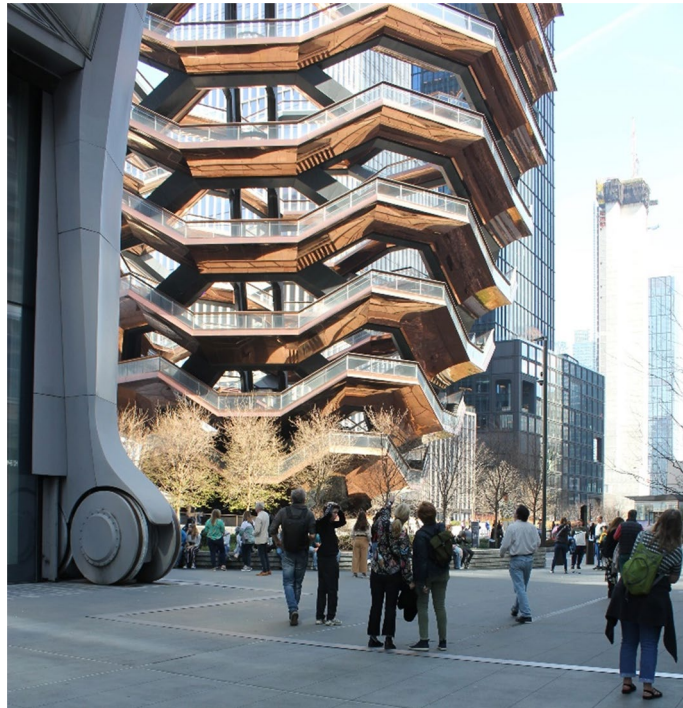
Each building of the complex has a clear identity and sits as an individual unit around a central space. Each celebrates its architects. The buildings' character reflects that of recent buildings in the Emirates and East Asia, its competitors in the global financial marketplace. Three of the first four towers were designed by Kohn Pederson Fox. Others were designed by David Childs of Skidmore Owings and Merrill, Foster and Partners, and Diller Scofidio + Renfro and Rockwell Group. The Shed, with its innovative U-shaped retractable roof is an exemplar of the work of Diller Scofidio + Renfro its designers. It is a center for the performing and visual arts. Elkus Manfredi Architects, a highly acclaimed firm, designed The Shops & Restaurants at Hudson Yards, a seven-story mall. Before the coronavirus epidemic, the mall was home to over 100 shops and upmarket restaurants some run by celebrity chefs. Nieman Marcus, a luxury department store chain, occupied a quarter of the mall's retail space. Several other stores had leases predicated on the store's presence.

The tenants of the towers are leading fashion labels such as L'Oreal and Coach (now Tapestry) and major organizations such as Facebook, Black Rock, a mutual-national investment company, and Warner Media. The housing consists primarily of luxurious condominiums. Ten percent of the total consists of affordable units. The second phase of the development will, if it follows the original plan, include more residential space, an office building, a school, and a park. Predicted to be completed in 2024 it has yet to break ground. Related Companies is seeking financial aid in building the deck.

At Hudson Yards's heart is the 5-acre (2-hectare) Public Square and Gardens. Like the rest of the open space on the deck, it is a privately owned, public area controlled by Related Companies (Lambrou 2017). Designed by Nelson Byrd Woltz, Landscape architects, it has Vessel as its centrepiece. Vessel is a sixteen story 46-meter (150-foot) tall, copper-coloured structure of interconnected staircase that vies with Paris's Eiffel Tower as a public attraction. When it opened people clamoured to climb it. The design was inspired by Indian stepwells although the public seems to see a closer relationship to M. C. Escher's



a. Hudson Yards viewed from High Line Park (Source: Photograph by Gagliari/Shutterstock.com)



b. Public Square and Gardens with Vessel (Source: Public Domain)



c. Hudson Yards seen from the west in 2019 (Source: Public Domain)

Figure 3: The first stage of the Hudson Yards Development as implemented

Relativity and House of Stairs. The work's \$200 million cost was borne by Related Companies.. Four suicides have made Vessel's future uncertain.

The impact of unforeseen forces on Battery Park City and Hudson Yards

Projects evolve as market demands change and the wear and tear of use and weathering take their toll on them. Some impacts are unexpected. Battery Park City was much damaged by the destruction of the adjacent World Trade Center towers in September 2001. A superstorm,

cyclone Sandy, flooded much of it and harmed the Long Island Railroad Yards in October 2012. The Hudson Yards development was yet to come but being on a deck it would have avoided the worst impacts of the storm. Both Battery Park City and Hudson Yards were eerily quiet during the coronavirus epidemic.

The Winter Garden and Brookfield Place were rapidly repaired after debris and ash damaged them in 2001. To prevent trucks laden with explosives penetrating Battery Park City, curbside barriers on turntables were constructed at potential invasion points and some streets



were closed to traffic. The building of an east-west link to the World Trade Center Memorial site made the Winter Garden's grand stairway redundant. It was threatened with demolition but as it is a major feature of the Winter Garden and acts as ad hoc seating for performances it, after much public clamour, was retained (Shapiro, 2011).

Cyclone Sandy's four-meter swells surged over the seawall at the southern end of Battery Park City. Salt water swamped the lawns, destroyed some trees, and filled the ground floors and basements of buildings. Little was permanently damaged. Sandy, and the general concern for the potential impacts of climate change led to BPCA's \$221 million plan for the area. It proposes raising Wagner Park by three metres, the installation of buried and exposed sea walls, flip-up gates, the planting of salt-resistant trees, and improvements to the drainage systems (Ionescu, 2022; Maldonado, 2023).

The impact of coronavirus on both Battery Park City and Hudson Yards was economically devastating. The epidemic essentially closed down commercial activity at both places. Battery Park is now operating much as before. Brookfield managed to entice threequarters of its employees to work in its offices before the end of the epidemic despite difficulties in getting them to eschew working from home. The situation at Hudson Yards catering to the luxury market is different.

Nieman Marcus filed for bankruptcy and closed as did those stores with leases linked to it. Many condominiums remain unsold making the viability of Phase Two, mainly a residential development, questionable. Stephen Ross remains optimistic (Haag & Rubinstein, 2021). Vessel's problems arise from people jumping off it to their deaths. That was something unforeseen. The development with Vessel and its hypermodern architecture and ties to High Line Park, nevertheless, remains a tourist destination. Its long-term future as a place to be is uncertain.

Discussion

Each of the designs for Battery Park City and Hudson Yards is a manifestation of contemporary patterns of political ends and investment decisions. Both projects were heavily subsidized by tax-payer funds with the expectation that the projects would increase the tax revenue base of the City of New York (Lambrou, 2017; Stein, 2019). The direct impact is from the property taxes paid by schemes themselves and the indirect from the catalytic effect they have on making adjacent areas ripe for redevelopment. The full effect of the first stage of Hudson Yards' development is yet to be seen but several major adjacent projects are in the pipeline. At the time of writing, work on the second stage of the project had been delayed until the full impact of the coronavirus epidemic on working arrangements and the future of the luxury market become clear. The catalytic impact of Battery Park City is clearest in the developments lining the Hudson on the New Jersey side of the river. The creation of the National September 11 Memorial & Museum across the West Side Highway has probably had a greater impact than it in encouraging development in Lower Manhattan.

In common the development of the two projects followed the same generic process. Both were all-of-a-piece designs as outlined in Figure 4 (Lang, 2017). Who controlled, and controls, planning and design decisions differ substantially in the two schemes. At Battery Park City, it was a public institution, the Battery Park Development Authority working, reputedly at least, on behalf of the public interest; at Hudson Yards it is a private property developer, Related Companies. The Related Companies's project is close to being a total urban design. It has been created and carried out from its programming phase to design implementation by a group forming a single organization seeking to maximize the financial return on the capital it invested.

Both Battery Park City and Hudson Yards are architecturally unified precincts. The way that end was achieved in the two places differs. At Battery Park City the development of individual buildings took place largely within the guidelines developed by Cooper-Eckstut. Hudson Yards follows a precedent established in the 1930s at Rockefeller Center where the controlling architect, Raymond Hood, worked closely with the architects of the individual buildings of the complex to shape their designs (Balfour, 1999). Kohn, Pederson Fox is the controlling architect at Hudson Yards.

While the early design paradigms imitated at Battery Park City and Hudson Yards were similar, the implemented paradigms at the two sites vary. Speculative designs for the sites of both projects began in the post-war years when public officials and architects were progressive utopians optimistic about what could be achieved by rationalist thinking. Architects sought to apply the generic designs for ideal cities that 1930s rationalists had dreamt up. Property developments would be spacious with buildings, following Le Corbusier's dictum, standing geometrically ordered in open parkland (Sert & C.I.A.M., 1944). The early plans for urban renewal schemes in New York, such as Governor Rockefeller's plan for Battery Park City (Figure 1a) and the Regional Plan Association's proposal for Hudson Yards imitated the rationalist paradigm. Highly functional, given a narrow definition of function, they, if built, would have proven to be not functional enough (Jacobs, 1961; Brolin, 1974). Salubrious places to work or live, they would have failed to afford the richness of life that traditional dense urban areas offer.

The post-war years were also ones when many architects, enamored with the possibilities of technological advances, speculated on what cities could be like. The radical proposals of groups such as Archigram in England, the Metabolists in Japan, and individuals such as Buckminster Fuller in the United States aroused great interest (Dahinden, 1972; Lang, 2021). The 1969 horizontal megastructure proposal for Battery Park city imitated the much-lauded contemporary thinking of architects such as Paolo Soleri (1969) who proposed cities in single structures and those, such as Paul Rudolph, proposing city-long linear structures. Rayner Banham dismissed the

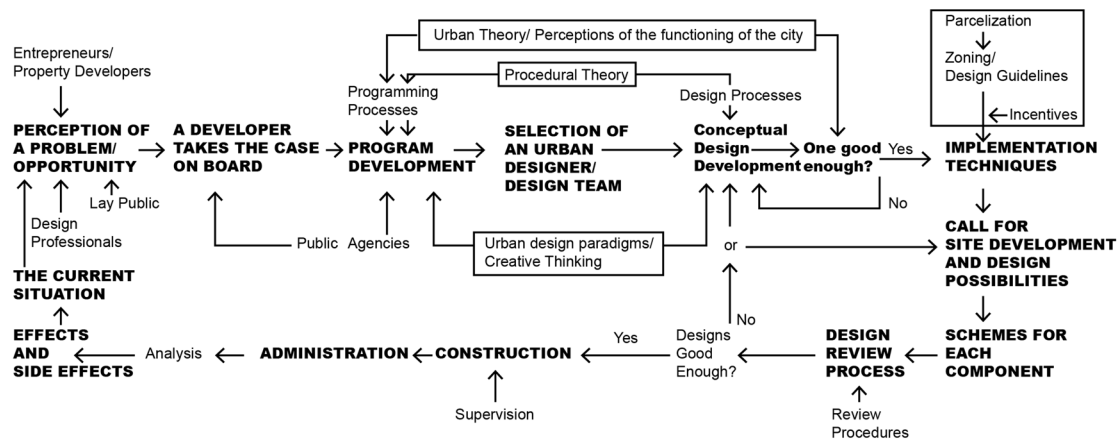


Figure 4: A generic model of the development of all-of-a-piece urban designs (Source: Lang (2017a) redrawn by Molly O'Neill Robinson.)

megastructure as paradigm for urban futures in his book, *Megastructure: Urban futures of the recent past* (1976). The megastructure, as possible model for urban designs, nevertheless, still interests architects.

The civil rights and other social movements of the 1960s, the limitations of the modern movement's urban design paradigm, and studies of life in cities led to a radical rethinking about the nature of urban design during the 1970s and 1980s. The qualities that made cities enjoyable places to live started to be identified and promoted as important variables to consider when creating urban renewal schemes. The Cooper-Eckstut design for Battery Park city exemplifies this emerging thinking. It was an empiricist response to the rationalists' dreams. The existing city, minus its warts, was a place to imitate. This idea was taken further by city planners and architects of the New Urbanist movement.

Battery Park was, ultimately, self-consciously designed to be a New York scheme based on architectural principles derived from precedents in high status areas of Manhattan. By the time the twenty-first century dawned the architectural profession had largely, in Jane Jacobs's terms, "shrugged off" the research on environments that work and do not work for diverse populations. Research findings clash with the desire of many architects to produce their own, identifiable, brand of work. Hudson Yards with its hypermodern character was designed to be an architecturally up-to-date development that possesses the eye-catching, flamboyant character of recent buildings in Abu Dhabi and Shanghai, both places where Related Companies has offices.

In common, despite the attempts at Battery Park City to link the development with view and road corridors into the patterns of Manhattan, the two project are islands built on fabricated sites. Battery Park City's landfill site is separated from Lower Manhattan by the West Side Highway. Hudson Yards lies on a platform over rail yards and is linked to High Line Park at above street level. Battery Park City, in contrast was consciously built at ground level. It is both a street and pedestrian oriented design.

Conclusion

Colin Rowe's question remains (Rowe 1983). When it comes to urban design, architects prefer to copy or imitate generic design solutions developed either by the rationalist or empiricist leaders in the field. They follow a paradigm-driven approach to design. A fully program-driven, problem-solving approach to urban design is not favored by city planners and urban designers. It is easier and less time consuming to base designs on an accepted paradigm than to follow a program-driven approach in which ends and means are clearly stated at the outset and modified as necessary as the development process progresses.

The C.I.A.M modernist paradigm is still widely imitated around the world as exemplified in much East Asian housing but the major clash today is between the rationalist-hypermodern and the empiricist-neotraditional paradigms. The rationalist approaches produce satisficing answers to the ends that clients seek. They are good enough. The empiricist designs seem to do better. Either way, the question is: What are the opportunity costs incurred by following a paradigm-first approach to design? They appear to have been higher in Hudson Yards than in Battery Park City.

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up a professorship at the University of New South Wales where he headed the School of Architecture and served as the Associate Dean for Research in the Faculty of the Built Environment.

Lang's focus of concern throughout his academic career has been on architecture, urban design and the relationship between the built environment and human experiences and behaviour. He has authored books on urban design, on architectural theory and on modern architecture in India. His best-known books are *Creating Architectural Theory* (1987), *Urban Design: The American Experience* (1994), *The Architecture of Independence: India 1886 to 1986* (1997, 2022), *Functionalism Revisited* (2010), *Urban Design: A Typology of Products and Procedures* (2005, 2017) and *The Routledge Companion to Twenty and Early Twenty-first Century Urban Design* (2021). He has run urban design workshops at universities in India, Iran, Singapore, Sri Lanka, and Turkey and headed University of New South Wales international studios in a dozen countries ranging from the United States to South Africa to Korea. He has served as a juror, including being chief juror, on several international urban design and architectural competitions. In 2010 he was awarded the Reed and Mallik Medal by the Institution of Civil Engineers in London.

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