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## The Uses and Limits of Architectural Design for Affordable Rental Housing: Case Studies of the Complexities of New York City, USA

*Usages et limites de la conception architecturale des logements locatifs  
abordables : étude de cas complexes à New York, États-Unis*

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# The Uses and Limits of Architectural Design for Affordable Rental Housing: Case Studies of the Complexities of New York City, USA

*Usages et limites de la conception architecturale des logements locatifs abordables : étude de cas complexes à New York, États-Unis*

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## Introduction/Overview

- 1 There are long-standing, often inauspicious relationships between affordability in rental housing in the United States and architecturally driven design choices<sup>1</sup>. Affordability, sustainability and design have interacted in historically changing, complex and variable ways to generate lower-cost rental housing. We offer case illustrations of several current formats for the generation of affordability within the context of one large global city, New York<sup>2</sup>.
- 2 The US system affecting the development of new or rehabilitated affordable rental housing is long, changeable, complex, and incomplete, Below, we offer a brief overview, referencing key sources on the history of housing in the US and in New York<sup>3</sup>.

Nevertheless, this short paper cannot serve as a thorough, comprehensive overview of the many decades of national, state, and locally driven policy instruments and programs affecting the availability and price of rental housing for lower income residents. It is but the necessary tip of an iceberg of programs, influences, crises, and some innovation<sup>4</sup>.

- 3 We first focus upon the uses or contributions of design choices in the development of new or rehabilitated rental housing for lower-income city residents. We do this through a set of case illustrations of today's affordable rental projects, within which all or some of the units or apartments are made affordable using a range of land use, financing and design options. These illustrations can only serve as a sketch, as each merits its own detailed report. Each, we argue, is generally representative of other comparable projects and project sponsors. These are also considered sketches because, quite often, only partial data and detail are available through public sources, in terms of financing and development for such projects.
- 4 We begin our paper with an overview of US rental housing programs, and offer some evidence of the scale of the affordability challenge. This is then followed by a section that gives background in order to appreciate the scale of housing need in New York, and then in our case illustrations. This is then followed by a discussion of the limitations or constraints upon the full-scale development of architecturally innovative projects for affordable rental housing. This most importantly includes finding adequate financing sources to address the full scope of existing and expected population demand for lower cost, affordable rental housing. Given the limited amount of available subsidies for lower priced rent rolls, there is typically considerable pressure to keep development costs to a minimum, without unduly sacrificing design options and aesthetics.
- 5 Each of our cases achieves this in differing ways and in different sub-communities of New York. A touchstone issue for the future is how various types of mixed-income models, combining market-rate with affordable units, can provide the opportunity for architectural innovation, environmental resilience, and reasonable rents.
- 6 We conclude by offering thoughts as to what seems likely to occur over the next years in New York regarding affordable rental developments and architectural design, acknowledging the critically central roles played by both financing limits and the constrained environment facing affordable rentals over the next decade or more.

## Background: A short policy overview

- 7 The federal government of the United States currently subsidizes housing for lower-income renters in four basic ways: public housing, project-based rent subsidies, tenant based rent subsidies (or vouchers), and federally supported Low Income Housing Tax Credits (LIHTC)<sup>5</sup>. The first three programs are "deep subsidies" that have been designed so that recipients pay no more than about 30% of their income on rent. The LIHTC is a "flat subsidy" which is off-budget (no Congressional action required annually) and does not vary with changes in the recipients' income. The LIHTC also differs from the three deep subsidy programs in that it is a "tax expenditure" and not a direct expenditure. The government does not allocate funds to the LIHTC program; instead, it forgoes federal income tax revenue from investors in the tax credit that would otherwise be collected. About 5 million households receive deep rental subsidies, a number that has

remained essentially unchanged since 2008. In contrast, since 2000, the LIHTC program has grown by about 133,000 units annually and currently provides housing for about 3.1 million renters. Residents in LIHTC housing tend to have significantly higher incomes than recipients of federal deep-subsidy programs and, in high-cost markets like New York, often receive both forms of “subsidy”.

- 8 Nearly all of the federal government’s expenditures on deep-subsidy programs currently go towards housing developments, and households, that are already subsidized. These funds support the operating costs of public housing and a portion of their capital needs (e.g. repairs), and are essentially used to renew existing rent subsidies. Very little funding is designated for the expansion of direct subsidy programs. i.e., to increase the proportion of people who can receive rental subsidies (US veterans have recently received targeted aid from Congress). Of the three deep-subsidy programs, only tenant-based rental assistance has seen any meaningful if modest growth since 2010 – and this growth has been largely offset by a decline, or demolition, of thousands of units of public housing.
- 9 While the LIHTC program supports the construction of new affordable housing units, a significant share of LIHTCs are used to fund the renovation and preservation of housing developments that were originally built under the LIHTC program. The benefits of this program were designed to expire after roughly 30 years, some of which is occurring now.
- 10 While the number of households which receives deep subsidies from the federal government has remained more or less unchanged over the past decade, the number of unsubsidized, low-income renters is large and growing. As of 2018, millions more low-income households were in need of public housing or rental assistance. There are now at least three eligible low-income households for every subsidized household.
- 11 The large gap between the need for affordable housing and the amount of federally subsidized housing that is available has prompted a number of cities, states, and other jurisdictions to establish their own affordable rental housing programs. The programs, however, vary widely in their design and scope, including income eligibility criteria, and the amount of subsidy they can provide per household. Among many examples, these programs take the form of inclusionary zoning, housing trust funds, rent regulation, property tax exemptions, and bond issues. There also exists locally financed public, affordable rentals, and heavily discounted or free access to city-owned land.
- 12 From 1987 through 2018, New York City sought to address their persistent housing affordability and homelessness crises by investing nearly \$ 19 billion (after accounting for inflation) from its own tax based capital budget to build and/or preserve more than 490,000 affordable housing units<sup>6</sup>.

## Background: How Much need for affordable rental housing is there?

- 13 Both nationally and in New York City, the need for affordable rental housing is huge, much more than is currently being supplied, as is the accompanying need for affordability in low-income homeownership<sup>7</sup>. To date, these needs have not been adequately satisfied by any level of government. In New York, as in other cities, the number of lower-income residents is so great that the prior and current rate of

affordable housing subsidy appears to be nothing more than partial, inadequate solutions to localities' housing needs<sup>8</sup>.

- 14 New York City currently has roughly 3.5 million housing units, of which over 60% are rentals, with roughly 1 million owner occupied units, and a 2017 rental vacancy rate of 3.6%. New York is home to a city-size population of impoverished families, with 1.7 million people classified as poor, constituting nearly 20% of the population. If the near-poor were added, the proportion would be over 40%, with most of these poorer households lacking affordable housing options, in which only 30% of their incomes would go towards paying rent.
- 15 Research using the 2017 NYC Housing and Vacancy Survey shows that about half of the city's roughly two million renters spend more than 30% of their incomes on rent, and over 700,000 renters spend more than half<sup>9</sup>. Almost all (91%) of low income New Yorkers are rent burdened, the percentage of which increased from 2014 to 2017, despite the substantial sums spent to improve housing conditions<sup>10</sup>.
- 16 In addition, over 11% of the rental stock is classified as overcrowded, with few tools to proactively address this dimension of housing need<sup>11</sup>. There are also roughly 60,000 persons and families within New York classified as homeless on any given day<sup>12</sup>, putting significant pressure on city government to house them, as ordered by Federal courts to provide shelter to all who are homeless<sup>13</sup>. The effects of the current coronavirus pandemic in further reducing families' ability to pay rent and then risk being evicted is only now surfacing<sup>14</sup>).
- 17 One more dimension of need, which suggests the limits upon architectural design, is the demand-side pressure from the increasing number of people moving into New York, either for work or because they are empty nesters. This influx, although variable by year and possibly somewhat reversing due to the current pandemic, constitutes the core of gentrification pressures experienced by New York, like in many other places<sup>15</sup>. Since their incomes are often higher, they can outbid others for the scarce number of rental units that enter either the private rental market or for affordable units, some allocated by lottery. The full extent of the virus in reducing the flow or composition of migrants into New York, or encouraging them to flee, is unknown at present.
- 18 Recent research by the Federal Reserve Bank of Philadelphia<sup>16</sup> reveals another problem facing both architects and urban planners: there are thousands of poorly maintained rental units scattered all over the US, with nearly 43% of all rental units in the New York-Newark-Jersey City metropolitan area in need of repairs. While the median cost of these repairs is only \$ 1,623, the bulk of the need is for lower-income units, which typically houses lower-income, single-parent, and minority households<sup>17</sup>. To make matters more complex, the owners of the units in need of rehabilitation are often small-scale landlords with little in the way of cash reserves or economies of scale to make sustainable, design based repairs<sup>18</sup>. There is therefore nothing apparent under the control of the average planner or architect in order to make this scattered, small-scale set of needy apartments more livable.
- 19 Another major dimension of development need is for those who live in poor quality or deteriorated public housing. The Federal Government sued New York City in 2017 to force it to repair and improve conditions in the city's public housing system, which encompasses nearly 180,000 housing units. While not every apartment or building is in poor physical condition, a sizable proportion of the city's 400,000 public housing

residents live in substandard conditions, in no small part because the units are, on average, nearly 60 years old, having undergone minimal and diminishing repairs over the last decade or more. As of January 2020 the cost of these repairs amounted to \$ 40 billion<sup>19</sup>. The city thus has another strand of court ordered repairs which it must attend to, costing it billions of dollars just to restore the stock to average living conditions. A major New York housing research center argues that, even with all the recent attention that public housing at NYCHA has received, it is still “vastly underfunded” despite the partial budget increases<sup>20</sup>.

- 20 These deficits exist despite the federal government’s allocation of nearly one \$ 1 billion (\$ 937 million) annually to NYCHA, both for operating and capital repair costs<sup>21</sup>. A report by New York University’s Furman Center<sup>22</sup> skeptically concludes, “Given the magnitude of the Authority’s needs, even these promising strategies will only make a small dent in NYCHA’s large capital deficit”. Below we discuss the only existing federal funding program intended to assist public housing agencies (like NYCHA) with the huge scale of these needs. It is labeled the Rental Assistance Demonstration or RAD<sup>23</sup> but it permits few incentives for innovative architectural design choices.
- 21 In the concluding section we offer thoughts about how future choices might be impacted by current constraints.

## Background: Linking Architectural Design and Sustainability

- 22 Design and sustainability appear to be necessarily and integrally related, most notably following the major flooding from Hurricane Sandy in 2012, in which major parts of the city’s low lying areas were underwater. We elect to view them as interrelated, even co-dependent, due not only to the expected savings in operating costs but also in the decrease of tenants’ rental fees associated with building apartments that are more energy efficient and environmentally friendly<sup>24</sup>. There is, however, also affordability and gentrification risks associated with some planned forms of urban sustainability<sup>25</sup>.
- 23 Despite weak or negative national policy guidance, we link affordability and sustainability for four additional reasons. First, in the real world, non-profit and for-profit rental developers in New York are increasingly using environmentally attuned building techniques. When starting from scratch, these appear to cost no more than non-sustainable building methods. Secondly, local public policies increasingly focus on regulating in favor of sustainable building practices. A third reason is that many in the movement towards sustainable design are personally committed to implementing green building techniques as much as possible<sup>26</sup>. Finally, many residents and tenants are aware that they typically benefit from the lower energy costs of sustainable buildings.
- 24 The following cases are meant to be seen as illustrations, even model prototypes, of innovative affordable rental development in the city. They illustrate how local developers and architects provide new and thoughtfully designed forms of rental housing for the city’s lower-income residents. They illustrate how developers can combine innovations in design with the necessary funding sources to enable their projects to charge low to reasonable rent prices, an essential link that renders possible the construction of sufficient numbers of lower-rent apartments.

- 25 The cases are examples of affordable design that have incrementally improved the number and quality of rental housing units for poorer households over the last several decades. It remains incremental, however, as there still exists only a modest level of the rehabilitated or newly built units that are affordable. Older, lower quality rental units disappear from the city's inventory due to fires, demolitions, conversion to higher rental prices, or planned clearances.

## Case Studies in Designing Affordable Rental Housing in New York: The uses and apparent benefits of architectural design in affordable rental housing

- 26 The cases below offer lessons on what committed community leaders may accomplish with the right financing and program tools. None offer the perfect silver bullet for all of New York's affordability needs, but each offers credible insights and illustrations of what can be achieved.
- 27 The first case is a project in the borough of Manhattan, built by the Durst family. It appears representative of many others which made use of a city financing scheme labeled 80/20 Voluntary Inclusionary Housing, in which developers are allotted additional square footage or building scale if they provide units at lower, affordable rental prices for twenty percent or more of all tenants. The Durst project is distinctive because of its design and green amenities. Although this incentive system has operated in NYC for decades, it was recently altered to mandate higher proportions of affordability if the city is to grant improved zoning options<sup>27</sup>.
- 28 The developer for the second case is Bronx Pro, operating in the borough of the Bronx. While still under development, the project is to consist of 60 apartment units, built with an extensive array of financing sources, most notably the Federal LIHTC program. They also made use of zero-cost land acquisition and support for homeless families. The case is distinctive because it incorporates innovative passive-home sustainability features, which are seldom used in other affordable housing buildings in New York.
- 29 The third case, the Rental Assistance Demonstration (RAD), is based in the borough of Queens and is the first public housing project in New York to be rehabilitated using a recent Federal (HUD) program<sup>28</sup>. Having been previously flooded in a heavy storm, the development is now among the few sites with sustainable built-in flood protections.

### Case 1: 80/20 financing and award winning design

- 30 The Durst Organization, centered in New York for over a century, has for decades made aggressive use of environmentally sustainable building techniques (typically LEED certified), as well as green building management tools. They have developed, using one of New York City's oldest tax subsidies, the "80/20" program, hundreds of affordable rental units in well-designed buildings, many on the west side of Manhattan and now in Queens. In exchange for the allocation of affordable units, the city gave permission for the zoning code to be amended to allow the new design<sup>29</sup>.

### The Via in Manhattan by the Durst Organization



The Durst Organization  
The Via interior garden



- 31 Above is a photo of one of the better known, architecturally designed affordable rental buildings. It is Durst's *Via on West 57th St.*, designed by architect Blarke Ingels. The building is over 820,000 square feet in size, with an interior park and pool. In this case, one quarter, or 25 % of over 700 rental units fall under the city's affordability guidelines for a program labeled as Voluntary Inclusionary Zoning. For nearly 180 affordable units, rent begins at \$ 565 a month and goes up to \$ 1400. This, for us, is one of the best illustrations of how lower to modest income families can benefit from access to affordable apartments in an exemplarily designed building<sup>30</sup>. During construction, they additionally made extensive use of recycled, renewable, and locally sourced materials, enabling rainwater collection for use in garden irrigation and for cooling towers<sup>31</sup>. All units' appliances are Energy Star rated.



- 32 Below is a table showing the difference between market rate rents and those discounted through the city's program. For example, studio apartment rents are, in this illustration, over 76 % less costly than what is paid by those using the free market system. For 3-bedroom apartments, the rent discount or advantage is over 80 % for buildings developed by Douglas Durst. The 80/20 financing plan used in this case has been superseded by a different mixed-income program that requires a higher percentage of lower-income units. The units will be affordable for roughly 35 years, after which some rent protections will apply<sup>32</sup>.

Durst Organization: In-Place Rent of Market Rate Units vs. Income Restricted Units.

Durst Organization: In-Place Rent of Market Rate Units vs. Income Restricted Units					
Portfolio Average	Category	Studio	1 Bedroom	2 Bedroom	3 Bedroom
	<b>Market Rate Rent</b>	\$ 3,293	\$ 4,090	\$ 5,950	\$ 7,763
	<b>Income Restricted Rent</b>	\$ 779	\$ 893	\$ 1,136	\$ 1,285
	<b>\$ Delta</b>	-\$ 2,514	-\$ 3,197	-\$ 4,814	-\$ 6,477
	<b>% Delta</b>	-76%	-78%	-81%	-83%

Source : <https://www.via57west.com/#landing>

- 33 The initiative by the Durst Organization portrayed above offers one example of a local New York development family with deep commitments to building sustainably, developing nearly 200 apartments with notable amenities for lower income tenants. When the rents are scheduled to return to market rate in roughly 35 years, and when the ground lease is renewed or extended in roughly 80 years, it remains to be seen how the project's multiple achievements will fare. It appears quite probable that forms of rent protection will apply for these now affordable apartments.

## Case 2 : Innovative, sustainable rental housing in the Bronx

- 34 The Bronx is both the northernmost part of New York City and has been for decades its poorest borough (district). Recent poverty rate data reveals that well over 400,000 or nearly 30 % (29.7 %) of the borough's 1.4 million residents live in poverty. Roughly 13 % of its entire rental stock consists of public housing units, with abundant rental vouchers as well. It is also a community where large proportions of the residents allocate over 50 % of their incomes towards rent, and where rents rose 45 % from 2005 to 2016<sup>33</sup>. Among the additional reasons why developers seek to develop affordable rental units in the Bronx is that the cost of land is typically less than in other boroughs. In one real estate research report, for example, land prices in 2014 in Manhattan were \$ 578 per square foot compared to only \$ 48 per square foot in the Bronx<sup>34</sup>. Most of the Bronx also has reasonably well-placed mass transit services, including subways.
- 35 Due to high levels of housing demand and other factors, both for-profit and not-for-profit firms have worked to develop affordable rental housing in the Bronx since the 1980s<sup>35</sup>. Among the prominent developers that began to build affordable apartments

throughout the Bronx is Bronx Pro Group, led by Peter and Samantha Magistro. They have developed over 2,200 affordable rental units since the late 1980s.

- 36 The case study for this article, Cyrus House, is among their latest developments and is aimed at both sustainability and low rental costs. The project is over 65,000 square feet, located near a major retail artery in the Fordham Road district. It is also located close to a mass transit (subway) station. When completed in roughly one year, the project will include 53 lower income studios, one to two-bedroom rental units and approximately 11,000 square feet of retail space.
- 37 The cost to develop the site is estimated at nearly \$ 24 million (\$ 23.6), with financing arranged from the city's main rental housing agency, New York City's Department of Housing Preservation and Development. The developers arranged financing, most notably to include financing from the syndication of federal Low Income Housing Tax Credits, accessing zero-cost land, and obtaining some Section 8 rental vouchers. They will also raise capital by selling the retail spaces and postponing their developer fees<sup>36</sup>.
- 38 Over 80 % of the units are for those earning no more than 30 to 60 % of the Area Median Income (AMI). The remaining units will be marketed to those earning between 80 and 100 % of AMI. They have estimated that roughly half (54 %) of the units will assist households from 60 to 80 % of AMI, and another 46 % will serve households at 30 %, 40 % or 50 % of AMI, as well as homeless households who will also receive support services.
- 39 The project's unique design includes sustainability features, most notably Passive House certification, which means that the development requires minimal energy to achieve a comfortable year-round indoor temperature and does not need to rely on traditional heating and air conditioning. The building's architects, Curtis and Ginsburg<sup>37</sup>, have also designed the site to meet LEED gold standards.
- 40 The new building will use 60 to 70 % less energy compared to buildings using conventional designs. Part of their design innovation will be to engage potential tenants in planning the units' design, putting emphasis on recycled materials. The project will save money through high levels of insulation, insulated window frames and glazing, as well as high-efficiency mechanical equipment, including heat pumps for heating and cooling, and high efficiency condensing boilers for domestic hot water<sup>38</sup>.
- 41 The developer's judgement about the design features is that :
- [...] the building will save energy, minimize material impacts, encourage physical activity, and protect indoor air quality. The development will foster a sense of community through education and community interaction. As a Passive House, LEED Gold, and Green Communities compliant project, *Cyrus House* will set the benchmark for sustainable achievement in New York City.
- 42 The Cyrus House project is expected to be completed in less than a year, after which data will be available to show the actual efficiency and tenant benefits of this model. It is, however, already among the most creative and helpful designs we have seen over the last several decades, built upon complex financing sources which others may be able to emulate.

### Rendering of Bronx Pro's Cyrus House



Bronx Pro approved the use of this web-based image.

### Case 3 : RAD in Queens. The reinvention of public housing ?

- 43 Wedged on a narrow peninsula between the Atlantic Ocean and Jamaica Bay, the Ocean Bay development consists of 24 buildings with nearly 1,400 apartments. Located in the Far Rockaway section of Queens, more than 20 miles from midtown Manhattan, the complex was built in the early 1960s, requiring substantial improvements by the 2000s. The development was devastated by Hurricane Sandy in 2012. Flooding destroyed its heating and hot water systems, severely damaging elevators, landscaping, and much else<sup>39</sup>. The New York City Housing Authority (NYCHA) turned to the federal Rental Assistance Demonstration program (RAD) to rehabilitate the development.
- 44 Authorized by the US Congress in 2012, RAD makes public housing developments eligible for more private funding for rehabilitation (or replacement) than would be otherwise possible using HUD's prior, exclusively federal funding system. RAD shifts developments from the auspices of the public housing program to another federal housing subsidy program (Project-based Section 8), under which they can receive bank loans, bond financing, and federal Low-Income Housing Tax Credits. RAD projects also often receive financial support from local governments, foundations, and other sources. In most cases, as in New York, RAD involves a shift in property management, from the housing authority to private companies. When public housing is converted to RAD, tenants have the right to remain in the housing and their rents must continue be set at 30 % of adjusted family income. The federal government has currently authorized about 40 % of all public housing to be transferred to the RAD program.
- 45 Ocean Bay is the first of more than 40 public housing developments in New York City to participate in RAD. It is also the largest RAD project in the United States. Through RAD, Ocean Bay received \$ 560 million (a cost of \$ 401,000 per unit) to overhaul critical building systems and upgrade individual apartments. The funding included \$ 213

million in tax-exempt bonds,<sup>40</sup> \$ 194 million from the Federal Emergency Management Agency (FEMA) and \$ 170 million in federal Low-Income Housing Tax Credits. The rehabilitation of the site took less than three years, during which time nearly all of the residents remained in place.

- 46 The RAD funding allowed for the installation of new infrastructure and building systems that would not have been possible had the development remained in the public housing program. Much of the infrastructure was designed to enhance the development's resiliency in the face of climate change and severe flooding.
- 47 To protect the complex from floodwaters, a flood wall was constructed around the entire 33-acre site and water retention swales were installed. To prevent electricity, heat and hot water services from being disrupted, hydronic boilers were placed on the roofs of each of the complex's 24 buildings. Stand-alone electrical service buildings were additionally erected above the flood zone. Heat and hot water previously originated from a single, ground-level power plant, which meant that when it failed, the complex went without heat until the problem could be fixed. The new rooftop boilers are both far less vulnerable to flooding and far more energy efficient than the original system. They also enable residents to control the temperature in their homes – something that nearly all renters and homeowners take for granted, but that had not been previously possible at Ocean Bay. To further improve the development's environmental sustainability, solar panels were installed to help meet the development's electricity needs.
- 48 In addition to infrastructural investments designed to help the complex better withstand hurricanes and other extreme weather events associated with climate change, the RAD project also replaced roofs, windows, and elevators and installed a new security system. No less important, each apartment received new bathrooms and kitchens along with other improvements<sup>41</sup>.

Aerial view of Ocean Bay: RAD development in Queens.



Posted on-line by the New York City Housing Authority.

- 49 The scale, scope and speed of Ocean Bay's rehabilitation stands in marked contrast to the Housing Authority's struggle to improve conditions in the rest of the city's aging, deteriorating public housing stock. New York's public housing requires \$ 40 billion in capital improvement<sup>42</sup>. The failure to address public housing's many physical problems

– from elevator breakdowns to lead paint exposure to rodent infestation to mold – prompted federal litigation and the subsequent appointment of a federal monitor to oversee the authority’s efforts to address these problems. The housing authority expects that RAD and related programs will generate \$12.8 billion for capital investment over 10 years<sup>43</sup>.

- 50 The New York City Housing Authority estimates that RAD and related programs will fund about one-third of the city’s public housing capital needs. Additional funds will come from the development of mixed-income housing and the sale of air rights on selected public housing campuses<sup>44</sup>. However, without a substantial increase in federal funding for public housing, it remains to be seen if adequate funding can be obtained to bring all of the city’s public housing to sound condition and prevent further deterioration.

## Limits & Constraints on Affordability and Design

- 51 There are a number of structural, technical and financial constraints that confront both architects and affordable housing developers when they start to plan to build or rehabilitate more than a few units at a time. The developer must first decide upon the community in which they wish to build, and then begin to acquire or assemble enough land to permit the construction of their design options. In most if not all parts of New York City, land is notoriously expensive, which creates an obstacle unless they are able to obtain land at little or no cost, like Bronx Pro and the RAD development, or in the case of the Durst’s project, they lease the land rather than own it.
- 52 A second issue is the predictable opposition of many local community organizations, neighbors, and elected officials to the initial designs, project scale, and intended human beneficiaries of the “public” rental units. Davis<sup>45</sup> devotes virtually an entire chapter to “not in my back yard (NIMBY) opposition” and the toll it takes on plans, designs, and developers. In most cases, concessions need to be made or the project is opposed. Design modifications are the norm in most parts of New York, throughout the US and even globally<sup>46</sup>. While opponents might accept the elderly in the form of subsidized housing for seniors, they often become virulently opposed to housing poor families<sup>47</sup>. Each of the projects we have cited has largely avoided this problem by providing necessary housing services and by working, often intensely, with the local community.
- 53 Another notable limit in the support for building larger numbers of well-designed affordable rentals is that, for decades, many Americans have resisted – both politically and sociologically – anything but the most stark, least costly building designs: buildings that were “Spartan” and mean-spirited”. As a result, architecture and architects often become superfluous bystanders<sup>48</sup>. For many decades, US Congress concomitantly resisted funding anything that appeared to be unique, fashionable, or out of the ordinary, so that those in the surrounding community would not object, even while tenants were left to feel stigmatized. The sociological and popular objections to social housing are then rooted in this initial, persistent opposition to anything other than stigmatic designs. Once again, the success of the cases we cite is that they have managed to create thoughtful, often attractive designs that are environmentally helpful for tenants and the community.

- 54 Architects and developers also make mistakes on affordable design at times. When planning for and designing public housing for the city of St. Louis, local administrators wanted to build a large scale, high rise development with unique design features. Minoru Yamasaki, a St. Louis architect, was selected to make use of principles derived from famed architect Le Corbusier, and designed one of the earliest, then-praised examples of US public housing for the poor : the Pruitt Igoe homes in St. Louis, Missouri.
- 55 Opened in 1955, the thirty-three 11-story buildings, holding nearly 3,000 apartments, were soon crumbling and in disrepair. The project was hence almost entirely demolished by 1976, within just twenty years, and was replaced with schools and lower-rise uses. Both residents and policy makers were aware of the use and clear limits of architectural design linked to adverse policy choices made in St. Louis<sup>49</sup>.
- 56 The demolition of the Pruitt Igoe houses was only the beginning of a series of federally funded plans to demolish traditional, mostly family-oriented public housing, and to replace it with something better designed, lower scale, and typically more mixed income, albeit with major physical stresses<sup>50</sup>. (The Urban Renewal Demonstration was followed by the Hope VI program, and currently the Rental Assistance Demonstration (RAD), cited above in one of our cases.)
- 57 The next constraint relates to the role of technological innovation upon apartment design. For quite some time, designers hoped that some forms of technological innovation, such as modular or manufactured housing, might create the necessary leverage to develop large numbers of affordable rental units more quickly than using conventional construction techniques<sup>51</sup>. As Davis<sup>52</sup>, has stated, “Few technological advances have had the effect of substantially lowering construction cost...” The industrialization of rental housing construction has simply not occurred, despite the modest pushes made by the federal government decades ago, as well as the willingness of some architects. It is unclear at this stage how technological change and innovation may help to stimulate the construction of more affordable units to fully meet housing needs in the future.
- 58 The most pressing constraint facing the development of well-designed, affordable rental units, however, is simply cost. Building in a city like New York raises all of the usual development costs, unless there are substantial “discounts” available such as free city land, tax exemptions, or the other forms of low cost financing such as the ones cited above. The management of this complex of incentives, financing schemes, and tax benefits requires skill, political access, and often luck.

## Conclusions : Notes for an uncertain future

- 59 In the production of innovative, affordable rental buildings and sustainability, architectural design has largely been marginalized in the US, as well as in New York. This has occurred primarily because architects and green building technologies are almost heavily dependent upon planning approvals, citizen concurrence, and adequate financing. The major affordable housing funding program in the US, LIHTC, currently provides few incentives for architectural or sustainable innovation. Furthermore, in terms of vouchers, besides project-based ones, there is virtually no option to facilitate

design options for sustainable building from the disaggregated, demand-side of funding<sup>53</sup>.

- 60 The future of affordable rental housing is also partly dependent upon US deficits, along with deficit reduction policies. The current US national deficit of roughly \$ 3 to \$ 4 trillion dollars – up from \$ 984 billion in 2019 – will preoccupy politicians and political choices over the next several decades. Parties, officials and the public alike contest the need for affordable housing, prioritizing military spending or other domestic priorities, including how much, for whom, and where the housing should be provided<sup>54</sup>.
- 61 The future is also partially contingent upon trends in the financialization of the multifamily rental market. As Fields and Uffer<sup>55</sup> report, private equity, when not in a recession, may try to invest in underpriced and undervalued multifamily buildings in the hopes of raising rents, attracting wealthier tenants, or otherwise capitalizing on the location and pricing advantages of the older rental stock in cities like New York. At times, resistance to such investment pressure occurs, as well as legal, political, and other financial pushbacks<sup>56</sup>.
- 62 The cases we have presented reveal the efforts of three distinctive developers seeking to offer improved levels of affordability in New York's rental market, using differing policy and financial tools. They illustrate how different forms of tax and program based financing motivate design innovation for affordability.
- 63 In each of the cases, a principle design choice was to stress sustainable building techniques. In the case of the Durst's Via building in midtown Manhattan, creative design and sustainability were linked in a way that enabled the higher rents of market-rate tenants to help support the rents of lower-income tenants, all living in well-designed, green rental housing. For Bronx Pro, long careers and commitments to affordable rentals in the city's poorest borough has produced a tax code-enabled, creative passive energy solution for tenants who are due to move into their apartments. The Queens RAD building suggests the higher cost but greater efficiency of allowing private sector investors to innovate for the benefit of public housing residents.
- 64 In our opinion, each of these cases serves as a model illustration of what can be built, despite all the obstacles, in a city desperately short of affordable rentals<sup>57</sup>. Further research can be pursued to learn how well not-for-profit developers manage in the creation of well-planned and designed affordable buildings, compared to other sources of sponsorship.
- 65 In the time of coronavirus, it is unclear how poverty, evictions, and homelessness will increase in the city, and how well government and private sector programs can help reduce these stresses<sup>58</sup>. It is also unclear how much more either the state or city can do, given how severely strained their budgets will be over the next several years in order to address the economic pressures resulting from the virus<sup>59</sup>. New York City has, for example, recently reported a loss of \$ 7.4 billion in tax revenue due to the virus, which will soon cause a \$ 2 billion dollar cut to city services<sup>60</sup>.
- 66 Architects and planners will become necessarily, if not voluntarily, marginalized in the planning, financing, and distribution of actual rental development over the next ten to twenty years or more ; but will ideally remain central to the design of more innovative, affordable, mixed-income housing that becomes incorporated into local communities in the longer term. Innovation in lower-cost design seems to be an essential part of this

future. Some will make use of critical insights generated from prior crises to reframe our discourse on the role of architects and planners in better aiding the poor with enriched housing options<sup>61</sup>.

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## ABSTRACTS

Affordable rental housing design and architectural practices have had a limited exposure and relationship in New York. The main design choices for both planners and architects have been to forge links through sustainable design and building formats. The three cases we highlight offer

insights into both the varied forms of financial and policy assistance that have been required to create more innovative designs, but to also illustrate the limits and constraints which have prevented architects and planners from playing more eminent roles in creating better housing opportunities, with more innovative designs, for lower income New Yorkers. The limits of case studies are apparent as are the limited financing options to offer hope of better, more progressive legacies in the future.

La conception architecturale de logements locatifs abordables est complexe à New York. Pour les planificateurs et les architectes, les principaux choix de conception et de construction durables reposent sur diverses formes d'aide financière et politique. Les trois cas que nous présentons offrent un aperçu des éléments nécessaires pour créer des conceptions plus innovantes. Ils illustrent aussi les limites et les contraintes qui ont empêché les architectes et les planificateurs de jouer des rôles plus éminents dans la création de meilleurs logements et des formes architecturales plus innovantes, pour les New Yorkais à faible revenu.

## INDEX

**Mots-clés:** Politique de logements locatifs abordables, Programmes de logement aux États-Unis et à New York, Conception de bâtiments durables

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