

A Decades Long Project: Atlantic Yards Financial Feasibility Study

Kahr Real Estate Services LLC

55 Broad Street

New York, New York 10004

August 2009

August 31, 2009

Council of Brooklyn Neighborhoods
c/o PACC 201 Dekalb Avenue
Brooklyn, NY 11205

RE: Feasibility Study for Proposed Atlantic Yards Development

To CBN:

In accordance with our 8/21/09 engagement letter, we have prepared a study on the financial feasibility of the proposed "Atlantic Yards" development project.


Based on our analysis, we do not feel that the project is financially feasible within a ten year development period. We feel that it is much more likely that the development will take 20 or more years to complete.

While we discuss our findings in greater depth in our executive summary, we feel the following points are key to understanding the overall financial feasibility of the project.

- The current state of the capital markets will make it extremely difficult to obtain financing for a project of this size within the next 36 months.
- The projected residential market rate rental and condominium prices that the developer relied on when they originally underwrote the deal are substantially above the current market. They created their projection in 2006, a time that in retrospect is considered to be the top of the last real estate cycle.
- The demand for housing units is most likely not sufficient to support a project of this scale over the next ten years.
- The developer recently restructured its original agreement with the MTA to enable it to exit the purchase of the Phase II properties for a minimal or no breakup fee depending on timing. Based on the timing of the payments, we believe that this indicates that the developer is concerned about its ability to complete the project within the stated 10 year time frame.

If you have any questions or would like to discuss this matter further, I may be best reached at my office at (212) 566-4085 x. 111 or by email at josh@kahrrealestate.com.

Regards,



Joshua Kahr

Certification

I certify that, to the best of my knowledge and belief:

1. The statements of fact in this memorandum are true and correct.
2. The memorandum analyses, opinions, and conclusions are limited only by the assumptions and limiting conditions contained herein, and are my personal, unbiased professional analyses, opinions, and conclusions.
3. I have no present or prospective interest in the property that is the subject of this memorandum, and have no personal interest or bias with respect to the parties involved. I am not aware of any such interest held by Kahr Real Estate Services LLC or any of the individuals involved in this review.
4. Our compensation is not contingent on an action or event resulting from the analyses, opinions, or conclusions in, or the use of, this memorandum.
5. The conclusion of opinion is based solely on work performed by me or by individuals working under my direction, as noted below.

Joshua Kahr
Principal

Jonathan Feifer
Senior Manger

Table of Contents

Executive Summary..... 1

Introduction..... 3

 Financial Feasibility 3

 Scope and Size of the Proposed Development 4

 Special Issues in Mixed Use Developments..... 5

State of the Market 9

 Housing Supply Trends..... 10

 Housing Price Trends 16

Financial Feasibility 21

 Residential Development 21

 Current Rental Environment 21

 Current Rental Market 22

 Current Occupancy..... 22

 Condo Market..... 23

 Office 23

 Absorption..... 24

 Impact of Timing..... 25

 Cost of Construction..... 28

 Timing of Payments to Purchase Land 28

State of the Capital Markets..... 30

 Availability of Financing for Residential Development 30

 General Capital Market Issues..... 31

 State of Forest City Enterprises 34

Appendix A: Developments that Are Recently Completed or Anticipated to be Complete from the June 2009 ESDC Technical Memorandum..... 36

Appendix B: Impact of Financing Costs on the Overall Cost of a Development..... 39

Appendix C: Other Mega Projects in NYC: Battery Park City and Metrotech..... 40

Appendix D: Rent comparables..... 43

Appendix E: Authors' biographies..... 45

EXECUTIVE SUMMARY

The development timeline proposed for the Atlantic Yards project is not feasible within the 10-year schedule set forth by developer Forest City Ratner Companies ("FCRC"). The following bullet points summarize the findings of the feasibility study authored by Kahr Real Estate Services LLC. The findings support the conclusion that the development of the Atlantic Yards project will require at least 20 years to complete.

Overall Economy

- The unemployment rate in Brooklyn stands at 7.6% and is expected to continue to increase.
- The number of job losses for 2009 is 17,000, and 6,000 for 2008. The total number of job losses represents over 3% of all people looking for jobs.
- The country generally and New York City specifically is currently experiencing the worst recession since the Great Depression
- Employment is a lagging indicator, and according to a number of economists will only increase in 2012-2013.

Capital Markets

- Capital markets are at a virtual standstill
- Banks for the most part are beginning to stabilize their balance sheets with the exception of commercial real estate
- It is expected that many investors will be unable to refinance their acquisitions resulting in a significant amount of default and bank write downs.
- Lending institutions are less willing to provide financing for development projects. When financing is available it is expensive, which will force developers to use more equity and unconventional financing sources, making projects unsustainable.

Market Rate Rental Units

- The market rate rental units are expected to rent for \$45.00 per square foot. The average rental rate per square foot is currently \$35.50. The \$9.50 increase represents a 26.60% increase in average rental rates.
- The vacancy rate for high end (defined as units that rent for more than \$2,500 per month) residential units is 7.2% and projected to increase in the near term
- The overall vacancy rate in Brooklyn is about 3.5%. This represents roughly 1.5% of excess stock in the market, which is equivalent to about 13,000 units.
- Vacancy is expected to remain high for a prolonged period of time because of new units coming to market, including new rental units as well as unsold condo units that are being rented (shadow market). 2,300 new units are expected to be brought to market in the near future.
- The Atlantic Yards project includes plans for about 6,500 units. To put this scale of development in a historical perspective, the total number of units developed in all of Brooklyn from 1990 to 1995, the last time we went through a downturn, was about 6,100.

Condo Market

- Sales volumes are down in surrounding areas by as much as 70% in the current year.
- According to Miller Samuels, a prominent New York appraisal firm, overbuilding has resulted in 2,820 units that are poised to be released into an already saturated market.

- Prices in Manhattan have dropped from \$1,500/\$1,600 PSF to \$1,200/\$1,300 PSF. Applying the same price decreases on a percentage basis to the Brooklyn market, the Brooklyn properties should be in the \$600 PSF range. The projected sales prices that the developer underwrote the project on in the proposed Atlantic Yards project were \$850 (2006 dollars)
- The average sales price for a Brooklyn property was \$495,120 in 2009, 15.9% below the \$588,441 average sales price from the 2nd quarter in 2008
- In the amalgamated neighborhood of DUMBO, Boerum Hill, and Downtown Brooklyn, the average price crashed 22 percent since the height of the market
- The IRR estimates by Forest City Ratner, and supported by KPMG in their feasibility analysis performed in 2006, determined that the project would yield about 9.6%.
- Assuming a longer absorption period, significantly lower leverage and lower prices, the returns would be markedly less.

Absorption

- Projected population growth in Brooklyn from 2009-2019 will only be approximately 100,000 persons
- With 2.60 persons per household, the number of required units will be about 37,500.
- There are around 13,000 units of excess supply in Brooklyn.
- When taking into account housing needs, projected development should be around 20,000 units over the next decade.
- Assuming 25% of housing stock is for high end residential (condo and rental), 5,000 units will be required in the entire borough over the next decade.
- Forest City Ratner plans to deliver about 4,500 high end units representing almost the entire market share of high end units in the Borough.

Conclusion

It is extremely unlikely that the full project can be financed and completed within 10 years at a profit by a private sector developer without substantial subsidies in excess of what has already been currently proposed. Based on the state of the market, the current plan, and the collective experiences of other large scale projects, it is much more likely that the development will take at least 20 years to complete.

Most important of all, the likelihood of this time frame has been essentially acknowledged by the developer; when they restructured their original 2006 agreement to purchase property rights from the MTA, they built in the ability to exit from the purchase of the Phase II properties for either no breakup fee or a minimal breakup fee depending on when they choose to exit the transaction. In addition, the timing of the payments has now been stretched out to 2030 – the new timing of the payments clearly indicates that the developer expects the timeframe of the development to stretch beyond ten years.

INTRODUCTION

The purpose of this paper is to analyze the financial feasibility of the proposed Atlantic Yards mixed use development. In specific, this paper shows that it is highly unlikely that the development will be completed by the proposed end date of 2019. It is our opinion that it is much more likely that the development will take closer to 20 years.

Financial Feasibility

Knowing the right questions to ask – this is a wise starting point in any task. Otherwise, we cannot identify the underlying assumptions necessary to arrive at an informed conclusion. A “market analysis” may have several different meanings, just as a real estate market is not necessarily going to mean the same thing to different people. We recognize a definition of the real estate market as:

The interaction of individuals who exchange real property rights for other assets, such as money. Specific real estate markets are defined on the basis of property type, location, income-producing potential, typical investor characteristics, typical tenant characteristics, or other attributes recognized by those participating in the exchange of real property.¹

We also need to recognize that “analysis” may fall into several distinct and separate functions within the broad function of market analysis. We view *market analysis* as a broad overview of supply and demand attributes for property, including site-specific and local factors and current as well as emerging competition.

When one refers to market analysis, it encompasses a very broad range of topics. What is market analysis? To begin, we provide some basic definitions.

Studies that focus on the market include:

- *Analysis of Local Economies*: Studies the fundamental determinants of the demand for all real estate in the market.
- *Market Analysis*: Studies the demand for and supply of a particular property type in the market.
- *Marketability Analysis*: Examines a specific development or property to assess its competitive position in the market.

Studies that focus on individual decisions include:

- *Feasibility Analysis*: Evaluates a specific project as to whether or not it is likely to be carried out successfully if pursued under a proposed program. May relate to developability. Most often related to financial feasibility.
- *Investment Analysis*: Evaluates a specific property as a potential investment. Usually incorporates specific financing in the analysis, and may evaluate alternative financing options to select most appropriate financing or consideration of income taxes. Emphasis is on risk and reward, sensitivity analysis, and internal rate of return.²

¹ Appraisal Institute, *The Appraisal of Real Estate*, 10th ed. Chicago: Appraisal Institute, 1992

² *Real Estate Market Valuation and Analysis*, Joshua Kahr and Michael Thomsett, John Wiley and Sons, 2005

With these definitions in mind, the value of the market analysis becomes apparent. It is a study that tries to identify the market for a particular real estate product. Why would we want to understand the market? Real estate markets are *not* efficient markets like the stock market, and pricing does not occur everyday.

Whenever someone undertakes a real estate transaction, a market analysis must be performed. This could range from an informal process to a two-inch thick book.

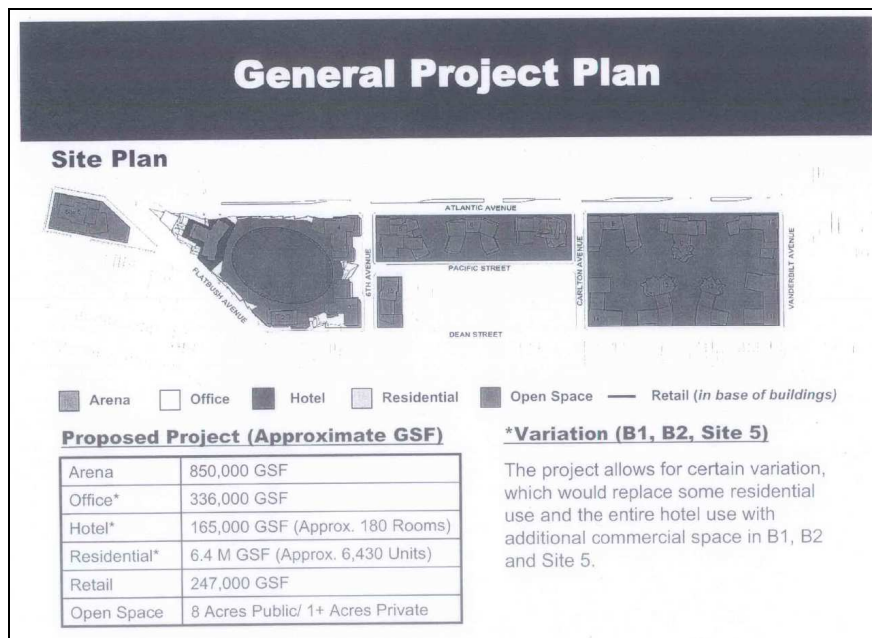
Three key questions should be answered by the study:

1. Will there be users to rent or buy the proposed product?
2. How quickly and at what rent or price, will the proposed project be absorbed in the market?
3. How might the project be planned or marketed to make it more competitive in its market?

This paper is a financial analysis of the development as currently presented. The majority of the claimed benefits of the project are associated with the completion of Phase II which will contain the bulk of the housing, open space and economic benefits. Therefore it is necessary to evaluate the likelihood that Phase II will actually be completed and the timeframe for that development. We are limited in our analysis to the sparse publicly available information and cannot delve any deeper as neither ESDC nor FCRC have released their financial models, and given that lack of information we are unable to complete a full investment analysis of the project.

Scope and Size of the Proposed Development

The project comprises the construction of a major mixed-use development in the Atlantic Terminal area of Brooklyn. Occupying an approximately 22-acre area, the project site is roughly bounded by Flatbush and 4th Avenues to the west, Vanderbilt Avenue to the east, Atlantic Avenue to the north, and Dean and Pacific Streets to the south and includes the approximately 9-acre (including the land under the 6th and Carlton Avenue Bridges), below-grade Long Island Rail Road Vanderbilt Storage Yard and Metropolitan Transportation Authority storage yard formerly used for inactive New York City Transit buses.



Source: ESDC Modified General Project Plan June 23, 2009, page 48, <http://nylovesbiz.com/pdf/AtlanticYards/MODGPP2009.pdf>

The project calls for the development of an arena, 16 mixed-use buildings and a newly reconfigured LIRR train yard, generally, to be developed within two phases. The mix and location of uses have been designed to concentrate the greatest commercial activity closest to Brooklyn's major transportation hub, located in the vicinity

of the intersection of Flatbush and Atlantic Avenues. The transportation hub currently provides direct service from the LIRR plus 10 New York City Transit subway lines and is proximate to 11 bus lines and two additional subway lines. The portion of the Project Site west of 6th Avenue (the "Phase I Site") would include Blocks 1118, 1119, 1127 and the intervening beds of 5th Avenue and Pacific Streets (inclusive of the small traffic island), and a portion of the Yard located underneath 6th Avenue between Atlantic Avenue and Dean Street, as well as Block 927, other than tax lot 26. A new arena for the New Jersey Nets National Basketball Association Team and five other buildings (with commercial office and retail, residential, community facility and potentially hotel uses and a new subway entrance) would be built on the Phase I Site. In conjunction with the development of the Phase I Site, FCRC would also completely reconfigure, rebuild and relocate the current LIRR Yard. The western portion of the current Yard would be incorporated into the Phase I Site, and a reconfigured and upgraded yard (which would be designed to improve Yard functionality but would decrease capacity by 25%), would be built below grade on the eastern end of the existing Yard footprint and on Blocks 1120 and 1121. As part of the reconfigured Yard, among other improvements, a drill track will be constructed through a portion of Blocks 1119 and 1120, a west portal and LIRR parking spaces will be provided in Block 1120, and an ancillary railroad storage space will be provided in multiple locations in the Yard.

The portion of the project site east of 6th Avenue (the "Phase II Site") would include the platform building pad to be constructed in the air space at the platform elevation. Such platform would also be built above the below grade portions of Lots 42 and 47 of Block 1121, which are expected to be added to, and become a part of, the reconfigured Yard. The Platform, combined with the existing at-grade parcels on blocks 1120, 1121, 1129 and a portion of 1128 and the bed of Pacific Street between Carlton and Vanderbilt Avenues, would allow for the planning, reorganization and redevelopment of these currently underutilized blocks. Eleven buildings would be developed on the Phase II Site with primarily residential uses and a number of local retail and community facility uses.

At the option of the New York School Construction Authority, the New York City Department of Education or other appropriate agency, FCRC will be obligated to construct, on the Phase II Site, at the expense of DOE, a public school comprised of approximately 100,000 square feet in the base (starting on the ground floor and located on contiguous floors) for such grades as determined by DOE based on need. The exact configuration of the school would be determined by mutual agreement of DOE and FCRC. It is expected that the school would be located in Building 5 or a suitable alternative, as mutually agreed by DOE and FCRC. The school will be constructed in the first building constructed in Phase II, or by a date mutually agreed to by DOE and FCRC. The Phase II Site would also include eight acres of publicly accessible open space, a portion of which may become reserved for use by the School during School hours, but would be available for public use outside of School hours, and a small portion of which may be reserved for exclusive use by the school.

The build-out of the Project is likely to occur in two phases, with the Project elements on the Phase I Site and the reconfigured Yard (collectively, "Phase I") anticipated to be completed by 2014 and the Project elements on the Phase II Site (collectively, "Phase II") anticipated to be completed by 2019.³

The estimated completion date is, as stated in the introduction, a point of contention. It is the position of this paper that the project cannot be completed anywhere near 2019.

Special Issues in Mixed Use Developments

Atlantic Yards is an exceptionally large mixed-use project in Brooklyn, NY. New York City has over the last 50 years completed a number of large projects, such as Battery Park City and Metrotech. However, to our knowledge, Atlantic Yards represents the largest single-developer mixed-use project in the City's history. The definition of a

³ ESDC Modified General Project Plan June 23, 2009, <http://nylovesbiz.com/pdf/AtlanticYards/MODGPP2009.pdf>

mixed-use development is a specific thing; it's not simply a collection of different uses. To make a mixed-use development successful, there are three keys to ensure success. They are:

- Three or more significant revenue-producing uses (such as retail, office, residential, hotel, and entertainment/cultural/recreation), which in well planned projects are mutually supporting
- Significant physical and functional integration of project components (and thus a relatively close-knit and intensive use of land), including uninterrupted pedestrian connections
- Development in conformance with a coherent plan (which frequently stipulates the type and scale of uses, permitted densities, and related items)⁴

It's important to understand whether or not one is analyzing a mixed-use development, because it's not an easy task. To establish what the market potential and financial feasibility for a mixed-use development requires special attention. Each use must be able to stand on its own. To quote Schmitz and Brett:

*"Mixed-use development projects present unique challenges as well as opportunities for the market analyst. The opportunity for the analyst is to help the project's developer and investors capitalize on synergies among complementary uses and create an overall market attraction that exceeds what the individual project components would generate independently. The challenge for the analyst is to identify and measure these market premiums. The market analyst should begin with the caveat that each element of the project must be able to stand on its own in terms of marketability."*⁵

In other words, if a single use is not financially viable, that single use usually cannot be supported by the other uses. A mixed use development does not tolerate loss leader uses well. Not only does a financially non-performing use lose money, it often brings down the quality and financial performance of the other uses. Empty retail stores do not encourage people to move into residential condominium units, and if anything, they will tend to chase them away.

For this report, we will focus primarily on the residential component of the Atlantic Yards project, as we believe that this component is particularly weak in terms of pricing and timing.

⁴ Real Estate Market Analysis, Adrienne Schmitz and Deborah L. Brett, Urban Land Institute, 2001, p. 205

⁵ Real Estate Market Analysis, Adrienne Schmitz and Deborah L. Brett, Urban Land Institute, 2001, p. 206-207

Market Grid for Mixed-Use Developments⁶

	Entertainment: Sports	Entertainment: Theatres	Entertainment: Bars & Restaurants	Retail: Comparison	Retail: Specialty	Retail: Convenience	Hotel	Office
Residential	×	×				•	×	•

Level of Market Synergy in MXD

- Strong
- Weak or Uncertain
- × Potential Market Conflict

As you can see from the chart above, the success or failure of the residential component will have a significant effect on the other uses. While we are not focusing on the office component, we will come back to that use later on in the paper.

Table 1
FEIS Residential and Commercial
Mixed-Use Variation Programs for 2010 and 2016

Proposed Uses [†]	Residential Mixed-Use Variation	Commercial Mixed-Use Variation
Analysis Year: 2010 (Phase I: Development of arena block and Site 5)		
Residential	2,085,000 gsf (2,110 units)	994,000 gsf (1,005 units)
Hotel (180 rooms)	165,000 gsf	0 gsf
Retail	91,000 gsf	91,000 gsf
Commercial	336,000 gsf	1,606,000 gsf
Arena	850,000 gsf	850,000 gsf
Parking (spaces)	2,346 spaces	2,346 spaces
Private Open Space	±1 acres	±1 acres
Publicly Accessible Open Space	0 acres	0 acres
Analysis Year: 2016 (Phase I and Phase II: Full Build-Out)		
Residential ¹	6,363,000 gsf (6,430 units)	5,272,000 gsf (5,325 units)
Hotel (180 rooms)	165,000 gsf	0 gsf
Retail ¹	247,000 gsf	247,000 gsf
Commercial	336,000 gsf	1,606,000 gsf
Arena	850,000 gsf	850,000 gsf
Parking (spaces)	3,670 spaces	3,670 spaces
Private Open Space	±1 acres	±1 acres
Publicly Accessible Open Space	8 acres	8 acres

Notes:

¹A portion of the retail and residential space is expected to house community facilities.

[†]An additional 100,000 gsf, not included in this table, may be built for a public school at the project site.

⁶ Source: Real Estate Market Analysis, Adrienne Schmitz and Deborah L. Brett, Urban Land Institute, 2001, p. 208

Source: ESDC Technical Memorandum, June 2009, page 2, http://nylovesbiz.com/pdf/AtlanticYards/Technical_Memo_text.pdf

ESDC expects that all of the Phase I buildings would be completed and opened by 2014. Phase I is expected to include at least 336,000 gsf of commercial office space, 165,000 gsf of hotel use (approximately 180 rooms), 91,000 gsf of retail, up to 2.1 million gsf of residential use (approximately 2,110 residential units) and community facility uses, which would occupy portions of the residential and retail space. In order to provide reasonable flexibility to respond to market conditions, the programs of Buildings 1 and 2 and the building on Site 5 may be adjusted to allow for more commercial use. This additional commercial use could replace the 165,000 gsf hotel use and about 1.1 million gsf of residential use, or some portion thereof, in Buildings 1 and 2 and the buildings on Site 5. The maximum extent of this allowed flexibility would still result in the creation of approximately 1,005 residential units in Phase I.⁷

These buildings – Buildings 1 through 4 – would have residential uses on the ground floor fronting Dean Street along with small local retail establishments and lobby entrances to the larger residential elements would be set back from Dean Street. These buildings would, similar to the Atlantic Avenue buildings, have a variety of setbacks and heights, but would all be much lower than the buildings along Atlantic Avenue.

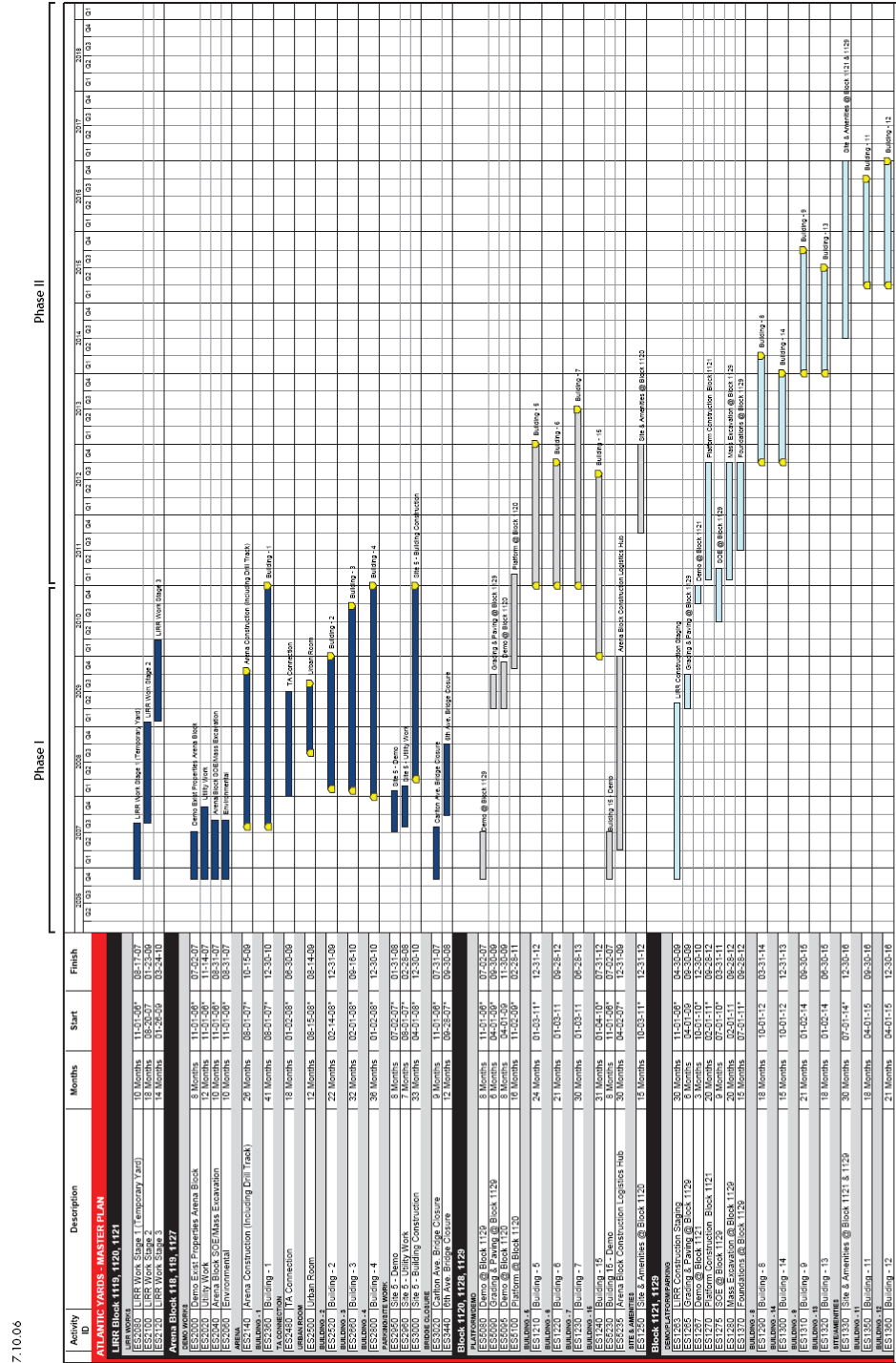
At full build-out, the project would include approximately 5,325 to 6,430 residential units, depending on the amount of commercial office space provided; most of the buildings on the Project Site would contain a residential component and all of the buildings east of 6th Avenue would predominantly be residential. Of the total residential units, it is expected that 4,500 units would be rentals; the remaining units would be market-value condominiums. The project will generate at least 2,250 units of affordable housing on site for low-, moderate- and middle-income persons and families, and at least 30% of the units built on the Arena Block will be “affordable”.⁸

⁷ ESDC Modified General Project Plan June 23, 2009, page 14, <http://nylovesbiz.com/pdf/AtlanticYards/MODGPP2009.pdf>

⁸ ESDC Modified General Project Plan June 23, 2009, page 16, <http://nylovesbiz.com/pdf/AtlanticYards/MODGPP2009.pdf>

STATE OF THE MARKET

The Atlantic Yards project is, by pretty much any measure, a mammoth project even for a city of the size and history of New York City. In addition, the timeline of the development is relatively tight. The biggest issue is not the overall size; a city of New York's size could absorb the units. The larger issue is that the development timeline assumes almost continuous development, and of course, continuous development assumes a continuously healthy economic environment. As you can see from the chart below, as soon as one building is finished, another steps forward in the queue.



Proposed Construction Schedule
Figure 17-1

Atlantic Yards Arena and
Redevelopment Project

Source: Turner Construction Company

Source: ESDC FEIS, Relevant Docs, 2006, http://nylovesbiz.com/pdf/AtlanticYards/FEIS/Volume1/17_Construction_Impacts/17_Figures/Fig17-1.pdf

In addition, there has been no publicly available market analysis to date. Take for example, AKRF's Blight Study. In the ESDC contract, it talks about a market analysis of trends in the area without the project that was part of the scope of work for the Blight Study. Apparently this was either never completed or never made public.

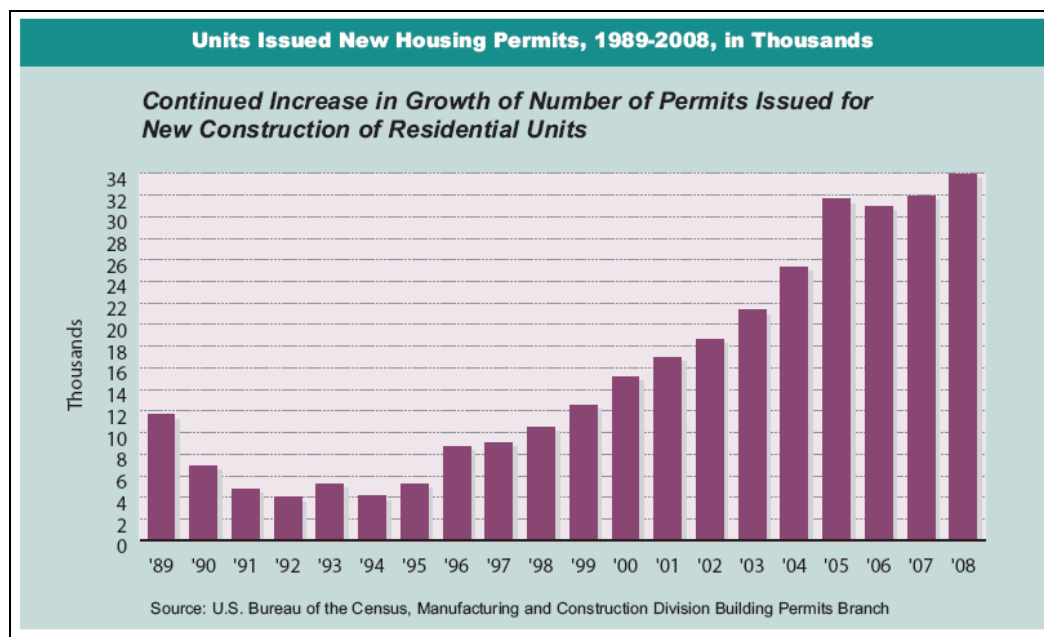
In addition to other items, AKRF 2006 Blight Study was required to take a hard look at the following:

- Analyze residential and commercial rents on the project site and within the study area
- Analyze assessed value trends on the project site, and compare to sample blocks with comparable uses in the study area, such as the Atlantic Center
- Describe residential and commercial vacancy trends⁹

We have attempted to analyze many of the items that one would normally expect would be present in the aforementioned Blight Study.

Housing Supply Trends

Recent trends in the issuance of housing permits have been positive. In 2008, approximately 34,000 housing permits were issued city-wide. As you can see from the graph below, the upward trend since the City's recession in the early 90's is pronounced.

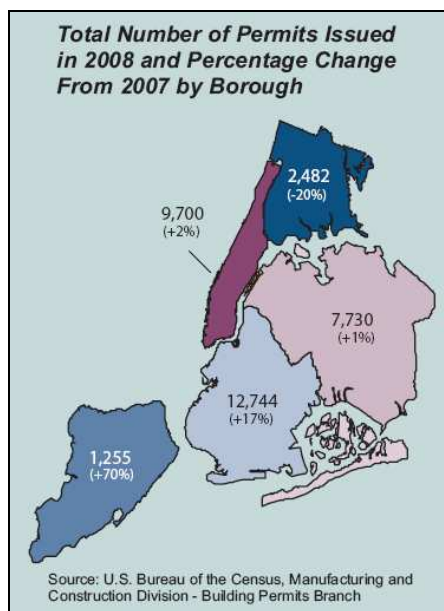


Source: 2009 Housing Supply Report, NYC Rent Guidelines Board, page 5, www.housingnyc.com

When the City is doing well financially, there is increased demand for housing and the market reacts. While approximately 6,000 housing units would be a lot of units to deliver even in a good year, in a bad year, or for that matter the six years that existed from 1990 to 1995, the amount of development in Atlantic Yards would be in excess of the entire amount of development that occurred in the City in any of those six given years. While it is reasonable to assume that over the long term Brooklyn could absorb the units, the plan does not take into account economic downturns, rival development projects from other developers, and most importantly, existing housing stock.

⁹ ESDC Blight Study, <http://dddb.net/FEIS/appeal/080822ReplyAppendix.pdf>

On one hand, the news up until the couple of years has been positive. Brooklyn, where the Atlantic Yards project would be located, has increasingly become a growth area for residential development. In 2008, Brooklyn developers were responsible for the issuance of more new housing permits than even their counterparts in Manhattan.



Source: 2009 Housing Supply Report, NYC Rent Guidelines Board, page 6, www.housingnyc.com

On the other hand, only 12,744 permits were issued in all of Brooklyn. That's 37.5% of the total number of permits that were issued city wide in 2008. This percentage used to be substantially lower. Prior to 2003, as a general rule, more units were built in Manhattan than in Brooklyn (see chart below). As development activity increased in Manhattan, the limited availability of development sites in addition to changes to the overall quality of life in Brooklyn led to increased development. The interesting question for analysts who are trying to understand the future of New York is to ask whether or not this trend is temporary, and if it were to reverse, by how much?

1. Permits Issued For Housing Units in New York City, 1960-2009

Year	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Total
1960	--	--	--	--	--	46,792
1961	--	--	--	--	--	70,606
1962	--	--	--	--	--	70,686
1963	--	--	--	--	--	49,898
1964	--	--	--	--	--	20,594
1965	--	--	--	--	--	25,715
1966	--	--	--	--	--	23,142
1967	--	--	--	--	--	22,174
1968	--	--	--	--	--	22,062
1969	--	--	--	--	--	17,031
1970	--	--	--	--	--	22,365
1971	--	--	--	--	--	32,254
1972	--	--	--	--	--	36,061
1973	--	--	--	--	--	22,417
1974	--	--	--	--	--	15,743
1975	--	--	--	--	--	3,810
1976	--	--	--	--	--	5,435
1977	--	--	--	--	--	7,639
1978	--	--	--	--	--	11,096
1979	--	--	--	--	--	14,524
1980	--	--	--	--	--	7,800
1981	--	--	--	--	--	11,060
1982	--	--	--	--	--	7,649
1983	--	--	--	--	--	11,795
1984	--	--	--	--	--	11,566
1985	1,263	1,068	12,079	2,211	3,711	20,332
1986	920	1,278	1,622	2,180	3,782	9,782
1987	931	1,650	3,811	3,182	4,190	13,764
1988	967	1,629	2,460	2,506	2,335	9,897
1989	1,643	1,775	2,986	2,339	2,803	11,546
1990	1,182	1,634	2,398	704	940	6,858
1991	1,093	1,024	756	602	1,224	4,699
1992	1,257	646	373	351	1,255	3,882
1993	1,293	1,015	1,150	530	1,185	5,173
1994	846	911	428	560	1,265	4,010
1995	853	943	1,129	738	1,472	5,135
1996	885	942	3,369	1,301	2,155	8,652
1997	1,161	1,063	3,762	1,144	1,857	8,987
1998	1,309	1,787	3,823	1,446	2,022	10,387
1999	1,153	2,894	3,791	2,169	2,414	12,421
2000	1,646	2,904	5,110	2,723	2,667	15,050
2001	2,216	2,973	6,109	3,264	2,294	16,856
2002	2,626	5,247	5,407	3,464	1,756	18,500
2003	2,935	6,054	5,232	4,399	2,598	21,218
2004	4,924	6,825	4,555	6,853	2,051	25,208
2005	4,937	9,028	8,493	7,269	1,872	31,599
2006	4,658	9,191	8,790	7,252	1,036	30,927
2007	3,088	10,930	9,520	7,625	739	31,902
2008	2,482	12,744	9,700	7,730	1,255	33,911
2009 (1st Qtr) ¹	164 (862)	137 (1,603)	151 (485)	508 (705)	117 (238)	1,077 (3,893)

¹ First three months of 2009. The number of permits issued in the first three months of 2008 is in parenthesis.

Source: U.S. Bureau of the Census, Manufacturing and Construction Division, Building Permits Branch.

Source: 2009 Housing Supply Report, NYC Rent Guidelines Board, page 15, www.housingnyc.com

During the darkest days of the early 1990's, a real estate recession in New York City that was driven by overall economic conditions and weakness in local job markets led to a very low rate of construction of new units. From 1990 to 1995, a period of 6 years, a total of 6,173 units in Brooklyn were built. If the city were to return to an equivalent economic condition, the number of units in Atlantic Yards would equal the entire production from that period.

However, the number of permits that are issued for new units can be exceptionally deceptive, especially in a rapidly weakening economy. To get a housing permit, you have to announce that you want to build a unit. The larger question is how many of those units will actually be completed? The table below shows the actual number of dwelling units that were completed during a 48 year period.

3. New Dwelling Units Completed in New York City, 1960-2008

Year	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Total
1960	4,970	9,860	5,018	14,108	1,292	35,248
1961	4,424	8,380	10,539	10,632	1,152	35,127
1962	6,458	10,595	12,094	15,480	2,677	47,304
1963	8,780	12,264	19,398	17,166	2,423	60,031
1964	9,503	13,555	15,833	10,846	2,182	51,919
1965	6,247	10,084	14,699	16,103	2,319	49,452
1966	7,174	6,926	8,854	6,935	2,242	32,131
1967	4,038	3,195	7,108	5,626	3,069	23,036
1968	3,138	4,158	2,707	4,209	3,030	17,242
1969	1,313	2,371	6,570	3,447	3,768	17,469
1970	1,652	1,695	3,155	4,230	3,602	14,334
1971	7,169	2,102	4,708	2,576	2,909	19,464
1972	11,923	2,593	1,931	3,021	3,199	22,667
1973	6,294	4,340	2,918	3,415	3,969	20,936
1974	3,380	4,379	6,418	3,406	2,756	20,339
1975	4,469	3,084	9,171	2,146	2,524	21,394
1976	1,373	10,782	6,760	3,364	1,638	23,917
1977	721	3,621	2,547	1,350	1,984	10,223
1978	464	345	3,845	697	1,717	7,068
1979	405	1,566	4,060	1,042	2,642	9,715
1980	1,709	708	3,306	783	2,380	8,886
1981	396	454	4,416	1,152	2,316	8,734
1982	997	332	1,812	2,451	1,657	7,249
1983	757	1,526	2,558	2,926	1,254	9,021
1984	242	1,975	3,500	2,291	2,277	10,285
1985	557	1,301	1,739	1,871	1,939	7,407
1986	968	2,398	4,266	1,776	2,715	12,123
1987	1,177	1,735	4,197	2,347	3,301	12,757
1988	1,248	1,631	5,548	2,100	2,693	13,220
1989	847	2,098	5,979	3,560	2,201	14,685
1990	872	929	7,260	2,327	1,384	12,772
1991	656	764	2,608	1,956	1,627	7,611
1992	802	1,337	3,750	1,498	1,136	8,523
1993	886	616	1,810	801	1,466	5,579
1994	891	1,035	1,927	1,527	1,573	6,953
1995	1,166	1,647	2,798	1,013	1,268	7,892
1996	1,075	1,583	1,582	1,152	1,726	7,118
1997	1,391	1,369	816	1,578	1,791	6,945
1998	575	1,333	5,175	1,263	1,751	10,097
1999	1,228	1,025	2,341	2,119	2,264	8,977
2000	1,385	1,353	6,064	2,096	1,896	12,794
2001	1,617	2,404	6,036	1,225	2,198	13,480
2002	1,220	2,248	8,326	1,981	2,453	16,228
2003	1,473	2,575	3,798	2,344	2,589	12,779
2004 π	3,326	4,512	6,150	3,087	2,291	19,366
2005 π	3,012	5,007	5,006	4,526	1,942	19,493
2006 π	4,311	6,418	5,199	5,940	1,900	23,768
2007 π	4,445	7,073	7,521	5,940	1,450	26,429
2008 π	4,241	7,306	6,141	5,672	1,021	24,381

Note: Dwelling unit count is based on the number of Certificates of Occupancy issued by NYC Department of Buildings, or equivalent action by the Empire State Development Corporation or NYS Dormitory Authority. Prior year's data may be adjusted and may not match prior reports.

π Data from 2004-2008 now includes Final Certificates of Occupancies (as with all other years) as well as Temporary Certificates of Occupancy data for the first time. Data will be updated every year to reflect the most current estimates.

Source: New York City Department of City Planning, Certificates of Occupancy issued in Newly Constructed Buildings.

Source: 2009 Housing Supply Report, NYC Rent Guidelines Board, page 17, www.housingnyc.com

While the number of housing permits that were issued annually from 2005 to 2008 was in a range of 31,000 to 34,000 units, the number of units that were actually delivered was in the range of 25,000 per year. To some extent this is a matter of the time it takes for the units to be delivered, and this is especially true when building high rise multifamily as the construction time is longer, but it is also a matter of failed projects. In a market like we've

experienced over the last 24 months, a large number of projects have been cancelled because they are no longer economically viable. This is either because the units cannot be sold at a price that justifies their construction, or as will be covered later in this document, financing is increasingly not available for new development.

To ESDC's credit, they do acknowledge the relationship between the overall market conditions and the financial feasibility of their project.

Since the FEIS, New York City has suffered a large loss in employment as a result of the global economic downturn. A recent analysis of the Mayor's Preliminary Budget for 2010 by the Independent Budget Office (IBO) indicated that the city's economy will continue to decline through 2010. Overall, the city is projected to lose about 254,300 jobs in 2009 and 2010, a decrease of about 6.8 percent from 2008. Although job growth is expected to resume at a slow pace in the latter half of 2010, IBO expects there to be 108,000 fewer jobs in the city by the end of 2013 (a decrease of 2.9 percent) compared to the first quarter of 2008. These estimates are similar to employment projections made by the New York City Office of Management and Budget. Current economic conditions, including the employment losses described above, have led to decreases in demand for both residential and commercial real estate, while turmoil in the financial market has made it more difficult to obtain financing for development projects. Over the past year, these changes have resulted in delays and program changes for development projects citywide. It is anticipated that the Atlantic Yards Arena and Redevelopment Project will be completed in 2019. However, if current economic conditions persist beyond the timeframes of current projections, it is possible that future delays may occur.¹⁰

(underline added by author)

As we will discuss in a later section, all indications of the current and potential future market conditions lead one to conclude that the economic conditions that limit financing for new development will persist and the project will be delayed beyond 2019 and for a period far longer than discussed in the Technical Memorandum.

According to ESDC, potential delays due to prolonged adverse economic conditions would not affect the timing of the development of the arena, the transit access improvements, the construction of the new LIRR rail yard, the reconstruction of the Carlton Avenue Bridge or the construction of Building 2. However, economically driven delays could slow the construction of some of the remaining buildings on the arena block as well as the Phase II sites. While the current construction plan calls for the continuous construction of the platform over the rail yard in Phase II, under this delayed build out condition, sections of the platform for Buildings 5 through 10 could be constructed as each of the buildings move forward in development. On the arena block, interim open space, urban plaza or other temporary public amenity use would be provided on the building footprints not under development.

Furthermore, the ESDC Technical Memorandum assumes that the competition from other projects would be relatively limited because it assumes that any financial hiccups in the overall market would affect both the small local developer and the mixed-use mega-project Atlantic Yards the same. To quote:

To the extent that the current economic conditions continue to affect the city's employment base, the market-rate residential units and office components of the project and other No Build projects in the study area would be subject to the same market forces (e.g., reduced demand for housing and commercial space). Similarly, it is expected that the market-rate components of the project would be financed in the same general manner as other No Build projects, with each of the buildings in Atlantic Yards evaluated by lenders as an individual project. Therefore, delay in the project resulting from prolonged adverse economic conditions would be expected to be accompanied by a delay in other study area projects, and future conditions in a delayed post-2019 Build year would be fundamentally the same as those described in this technical memorandum for 2019. For most of the technical areas analyzed in the FEIS, future population, employment, and housing conditions are evaluated based on known development projects. Table 3 provides a detailed list of updated No Build projects anticipated for completion through 2019. As noted previously, the updated list includes projects that were planned prior to the

¹⁰ Source: ESDC Technical Memorandum, June 2009, page 55-56, http://nylovesbiz.com/pdf/AtlanticYards/Technical_Memo_text.pdf

*economic slowdown and, although some of those projects are on hold, they are assumed to still be moving forward in the future when market conditions improve. Therefore, this list is conservatively inclusive since projects were not removed. Based on current information there are no substantial projects planned for completion after 2019 that would need to be added to the No Build list presented in Table 3 and used to evaluate future conditions. Therefore, it is expected that future conditions under a scenario of prolonged adverse economic conditions would be fundamentally the same as those described in this technical memorandum for 2019.*¹¹

(underline added by author)

The problem with this statement is that it's just not true. As discussed earlier, a mixed-use development of this scale cannot be simply compared with a developer that is building a much smaller 100 unit residential building and one that is not part of a large mixed-use building. Financing for any construction project in today's market is extremely difficult to obtain; for a project with any level of complexity to it, such as a large scale mixed-use multi-phase development, it will be almost impossible. To put it simply, in today's market, banks can choose to put their limited capital to work on only the safest, easiest to understand projects and the Atlantic Yards project is neither.

It is not all a disaster; some level of multi family financing has remained available. However, this has largely been restricted to smaller acquisitions and it is not available for new construction. There is simply no reason to build, or for that matter finance, new product when the market is already awash in it. Furthermore, when it comes to large scale development, there is virtually no available financing on terms that would be considered reasonable to a developer. As capital markets improve, development financing will become more readily available. However, underwriting standards will be more conservative than when the 2006 KPMG feasibility report was written in December 2006. After all, late 2006 and early 2007 was the top of the last market cycle. This will undoubtedly lower the profitability of the project, even assuming other factors remain constant.

Notwithstanding whether or not one believes ESDC's interpretation of the market's health, or the opinions of others, such as the author, the implications of population growth remains relatively incontestable. Interpreting the meaning of growth in the supply of housing units is relatively meaningless unless one looks at overall population growth. Out of all the potential drivers for market demand for housing, population remains the largest driver. Just as people rent office space to house workers, people rent or buy housing to house households. The problem with overall demand for housing in New York City is that our population is relatively stable.

5. New York City Population Statistics, 1900-2008

Year	Bronx	Brooklyn	Manhattan	Queens	Staten Island	Citywide	Citywide Change from Prior Decade
1900	200,507	1,166,582	1,850,093	152,999	67,021	3,437,202	--
1910	430,980	1,634,351	2,331,542	284,041	85,969	4,766,883	38.7%
1920	732,016	2,018,356	2,284,103	469,042	116,531	5,620,048	17.9%
1930	1,265,258	2,560,401	1,867,312	1,079,129	158,346	6,930,446	23.3%
1940	1,394,711	2,698,285	1,889,924	1,297,634	174,441	7,454,995	7.6%
1950	1,451,277	2,738,175	1,960,101	1,550,849	191,555	7,891,957	5.9%
1960	1,424,815	2,627,319	1,698,281	1,809,578	221,991	7,781,984	-1.4%
1970	1,471,701	2,602,012	1,539,233	1,986,473	295,443	7,894,862	1.5%
1980	1,168,972	2,230,936	1,428,285	1,891,325	352,121	7,071,639	-10.4%
1990	1,203,789	2,300,664	1,487,536	1,951,598	378,977	7,322,564	3.5%
2000	1,334,381	2,466,952	1,539,610	2,231,845	445,562	8,018,350	9.5%
2008	1,391,903	2,556,598	1,634,795	2,293,007	487,407	8,363,710	4.3% ²

Note: 1900-1990 figures as of April 1 of each year. 2000-2008 figures is of July 1 of that year. Percent population change between 1990 and 2000 has not been adjusted to take into account the increased number of households surveyed for the 2000 Census.

² Percentage change is from 2000-2008. Source: U.S. Census Bureau, Population Division

Source: 2009 Income and Affordability Study, New York City Rent Guidelines Board, page 17, housingnyc.com

¹¹ Source: ESDC Technical Memorandum, June 2009, page 55-56, http://nylovesbiz.com/pdf/AtlanticYards/Technical_Memo_text.pdf

While New York City is still growing, its growth has slowed. We left the rapid immigration driven growth behind a long time ago. Furthermore, the 1980's and 1990's repopulation of areas that were abandoned in the wake of the city's financial crisis has also played out. What New York City is now experiencing is little more than stable long term growth, and stable long term growth does not require massive redevelopment projects. Without a substantial increase in population, there will not be a significant increase in demand for housing units.

Housing Price Trends

The best source for housing prices for New York City is Miller and Samuel, a New York based appraisal and consulting firm. Their data is used and repackaged by most of the major residential brokerage firms and they are regularly quoted in the New York Times, the New York Post, and other leading periodicals.

The trend for housing prices in New York City has been remarkable over the last 15-20 years. While data for the outer boroughs is somewhat less reliable, for Manhattan the trend has been clear: the prices, until 2007 kept going up.

Manhattan

Manhattan
Condos
Average Price Per Sq Ft
1989 - 2009

	Studio	1-Bedroom	2-Bedroom	3-Bedroom	4+Bedroom	All
2007	1,075	1,092	1,287	1,697	2,116	1,225
2006	1,020	1,035	1,192	1,509	1,828	1,142
2005	932	963	1,156	1,375	2,088	1,086
2004	773	796	912	1,108	1,418	873
2003	656	678	819	981	1,282	765
2002	685	590	837	859	1,418	741
2001	577	611	723	961	1,127	691
2000	477	530	646	880	1,050	613
1999	395	417	518	693	802	480
1998	366	483	459	1,056	1,564	487
1997	302	367	436	586	714	400
1996	379	309	408	1,019	856	376
1995	496	407	460	912	983	456
1994	346	363	412	569	1,316	392
1993	300	286	353	393	495	323
1992	308	358	367	531	389	361
1991	319	331	404	572	669	370
1990	359	349	442	574	395	394
1989	345	385	443	689	510	409

Manhattan

Manhattan
Condos
Average Price Per Sq Ft
2006 - 2009

	Studio	1-Bedroom	2-Bedroom	3-Bedroom	4+Bedroom	All
2Q, 2009	1,018	1,046	1,158	1,467	1,749	1,181
1Q, 2009	1,061	1,253	1,484	1,734	2,272	1,413
4Q, 2008	1,034	1,081	1,386	1,763	2,324	1,277
3Q, 2008	1,067	1,143	1,397	1,949	3,101	1,334
2Q, 2008	1,216	1,257	1,523	1,806	2,700	1,442
1Q, 2008	1,169	1,212	1,482	2,182	3,368	1,416
4Q, 2007	1,046	1,116	1,412	2,053	2,092	1,310
3Q, 2007	1,193	1,126	1,328	1,741	2,233	1,278
2Q, 2007	1,039	1,076	1,237	1,588	1,808	1,178
1Q, 2007	1,068	1,062	1,216	1,502	2,210	1,169
4Q, 2006	1,001	1,047	1,286	1,630	2,301	1,184
3Q, 2006	1,025	1,069	1,222	1,741	1,823	1,171
2Q, 2006	1,067	1,039	1,200	1,501	1,733	1,149
1Q, 2006	965	978	1,074	1,290	1,801	1,065

Source: millersamuel.com

To show the price drop in the market, we've shown the annual data from 1989 to 2007, and quarterly data above from 2006 to 2nd quarter 2009. The data is telling. In 2nd quarter 2009, the price per square foot for all condominium units was \$1,181; in the prior year, it was \$1,442. In 2nd quarter 2007, which was close to the beginning of the financial crisis, it was \$1,178. In other words, we're back to where we were before the start of the financial crisis, and logic would dictate that as the slowdown continues, prices should fall further.

When examining the data following the last real estate market bubble and bust of the late 1980's and early 1990's, one can clearly see that prices remained stagnant for a prolonged period, up until roughly 1998. If one applies the same logic to the current financial crisis, which is actually considerably worse than the one that occurred in the late 1980's and early 1990's, we can only expect prices to recover to pre-recession prices around 2014-2015.

Of course, the data is more relevant and convincing when we dig deeper and focus on Brooklyn. Miller and Samuel's data set for Brooklyn is nowhere as deep as the data set that they have for Manhattan. Nonetheless, in 2006, they started to track condominium sales prices in Brooklyn.

Brooklyn		Brooklyn	
Brooklyn Condos Average Price Per Sq Ft 2006 - 2009		Brooklyn Condos Number of Sales 2006 - 2009	
All		All	
2Q, 2009	471	2Q, 2009	372
1Q, 2009	475	1Q, 2009	328
4Q, 2008	586	4Q, 2008	519
3Q, 2008	543	3Q, 2008	660
2Q, 2008	575	2Q, 2008	690
1Q, 2008	532	1Q, 2008	772
4Q, 2007	565	4Q, 2007	941
3Q, 2007	523	3Q, 2007	979
2Q, 2007	494	2Q, 2007	778
1Q, 2007	492	1Q, 2007	781
4Q, 2006	520	4Q, 2006	667

Source: millersamuel.com

As you can see from the table above, what is most noticeable is not the drop in sales prices; the major factor here is the slowdown in the sales. In the 2nd quarter of 2009, there were only 372 sales of condos. This is a drop of almost 50% when compared to the 2nd quarter of 2008, and over a 50% drop from 2nd quarter 2007. As drops in sales volume are usually the first sign of a slowdown and are usually followed by a drop in actual sales prices as sellers accept the new price level, one can only expect that sales prices will continue to drop.

There is one other challenge that makes market analysis for the Atlantic Yards residential component unusually challenging. What is being proposed for Atlantic Yards is essentially a premium product; it will be new, in a planned mixed-use development, and many of the units will be in a high rise format. There is a lack of comparable residential product in Brooklyn, and this lack makes it unusually difficult to determine what a realistic absorption schedule will be. That said, existing data is not encouraging.

While it's anecdotal, we think a good example of the state of the market can be found in a recent Crain's article:

Sales at Forté, a 30-story luxury residential tower in the Brooklyn Academy of Music cultural district in downtown Brooklyn, have not met its investors' expectations.

Manhattan-based developer The Clarett Group confirmed Thursday that, along with its majority partner Goldman Sachs Group Inc., it is negotiating with the project's construction lender to transfer control to the lender. After two years of marketing, the 108-unit, upscale FXFOWLE Architects-designed building only 37 units have been sold.

"Clarett is proud to have delivered such a beautiful, high quality property—on time and on budget—to enhance the skyline and contribute to the renaissance of downtown Brooklyn," the developer said, in a statement. "Unfortunately, the sales market in Brooklyn has not been as strong as Forté itself."

The number of apartment sales in northwest Brooklyn, which includes downtown and Fort Greene, fell 42.8% during the second quarter from the same time last year, according to the Prudential Douglas Elliman and Miller Samuel industry report.¹²

It's safe to say that a large number of projects will never make it off the drawing boards, and of the for-sale projects that have, a substantial number will end their development life as a rental product.

For a less anecdotal example, a recent survey conducted by Democratic Assemblyman Hakeem Jeffries identified 65 residential buildings in central Brooklyn that are either financially troubled or on the verge of distress. These properties are market-rate residential buildings at least four stories high located in the neighborhoods of Fort Greene, Clinton Hill, Prospect Heights, Crown Heights and Bedford-Stuyvesant. Many are luxury developments in different stages of completion. Some projects are completed and unoccupied, while others are stalled.¹³ Based on the available evidence, it seems unlikely that the market rate condominium market is viable in the short to medium term.

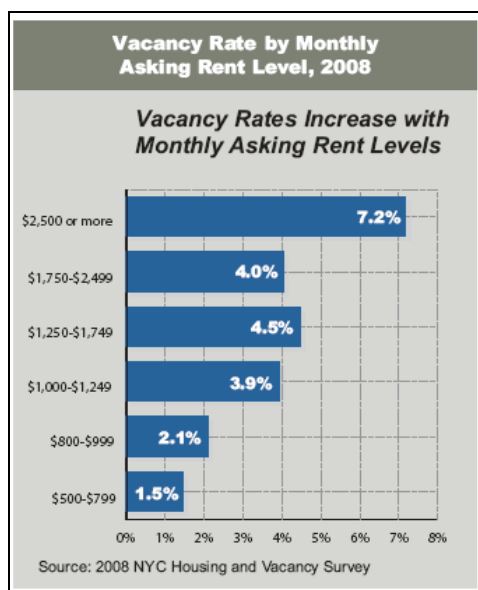
In a similar vein, vacancy rates for rental residential units varies based on what segment of the market the units target. Preliminary results from the 2008 Housing and Vacancy Survey (HVS) were released in February of this year, and they reveal the continuation of a very tight New York City housing market. This triennial survey of the housing and demographic characteristics of the City's residents found that the citywide vacancy rate was 2.88% in 2008.¹⁴

¹² Crain's New York, August 13, 2009, <http://www.crainsnewyork.com/apps/pbcs.dll/article?AID=/20090813/FREE/908139989/1059>

¹³ Crain's New York, August 27, 2009, <http://www.crainsnewyork.com/article/20090827/FREE/908279977>

¹⁴ 2009 Income and Affordability Study, New York City Rent Guidelines Board, page 7, housingnyc.com

This report, it should be noted, is probably the most accurate survey of market's vacancy. In New York City, the vacancy rate is highly politicized. In order for rent regulation to continue under state law, the city wide vacancy rate must stay well below the 5% threshold. As a result, the US Census Bureau conducts the HVS and acts as a neutral party.



Source: 2009 Income and Affordability Study, New York City Rent Guidelines Board, page 7, housingnyc.com

Just as a slowdown in sales volume generally precedes a broader price level decline, a rise in vacancy rates generally precedes a drop in rents. Unsurprisingly, the highest vacancy rates city wide are for luxury product—exactly the sort of units that Forest City Ratner is proposing to develop at Atlantic Yards. KPMG’s financial feasibility study proposed that the market rate units would be 714 SF and rent for \$45 per square foot per year (\$2,677 per month). In addition, in the same document in 2006, it was projected that the market’s vacancy among units over \$2,500 was in the range of 2.9% to 4.9%.¹⁵ While that may not seem like a substantial difference, it represents a significant number of units that are vacant, and the current vacancy rate of 7.2%, is historically unprecedented in this market segment.

The basic problem with the current state of the housing market in Brooklyn is the level of overdevelopment. There is a glut of projects that have been completed. As anticipated in the FEIS (and described in Appendix A), a substantial amount of new development in and around Downtown Brooklyn has been completed recently or is currently under construction— although a number of anticipated commercial office projects have been changed to residential projects—due in part to the rezoning of this area in 2004. Several of the projects that have been completed, as well as others on the FEIS list, have been modified since the FEIS. Specifically, the projects that have been modified would create over 600 additional residential units compared to the No Build projections utilized in the FEIS. There are also 28 new projects in the study area that were not identified in the FEIS list, and which have either been recently completed or are anticipated to be complete by 2019. Most of these projects are residential in nature.¹⁶

If anything, there will be even more residential development in the future. To quote ESDC:

In summary, changes in background conditions since 2006 and future conditions anticipated through 2019 would not substantially alter the conclusions presented in the FEIS for land use. Although there is more of a trend toward residential and hotel development than office uses and

¹⁵ Review of Certain Cash Flows and Assumptions in Connection with Forest City Ratner Companies Development of the Atlantic Yards, KPMG LLP, page 16, December 19, 2006, <http://dddb.net/documents/economics/KPMGreport.pdf>

¹⁶ Source: ESDC Technical Memorandum, June 2009, page 9, http://nylovesbiz.com/pdf/AtlanticYards/Technical_Memo_text.pdf

additional No Build projects have been added, the essential land use patterns within the study area have remained similar to what was expected in the FEIS.¹⁷

Of course, the question isn't whether or not the market is currently unhealthy. The question is how long will this continue and what impact prolonged delays will have on the financial feasibility of the proposed development. We will explore this concept in greater detail in the next section.

¹⁷ Source: ESDC Technical Memorandum, June 2009, page 10-11, http://nylovesbiz.com/pdf/AtlanticYards/Technical_Memo_text.pdf

FINANCIAL FEASIBILITY

The study, Review of Certain Cash Flows and Assumptions in Connection with Forest City Ratner Companies Development of the Atlantic Yards, that was prepared by KPMG at the end of 2006 was based almost entirely on information and estimates provided by FCRC. These included but were not limited to the development and absorption of housing, retail, office and a sports arena. Like the analysis provided by KPMG, this analysis will use the information provided by Forest City Ratner as a basis, while taking into account the economic events that have occurred and which continue to affect the overall viability of the Atlantic Yards Project. To this end, this analysis will examine several major components of the development plan with a goal to update current feasibility within the timeline set forth by Forest City Ratner, and supported by KPMG.

Residential Development

The residential component of the proposed Atlantic Yards project would be comprised of a mix of rental units, both market level and “affordable”, as well as condominiums. The projected internal rate of return (“IRR”) of the mixed use component of the development was 9.86% in 2006.

Note that a very minor change in cash flows can destroy the projected IRR and make the project impossible to finance by private sources. For example, if it was projected that a project would take 5 years to generate an IRR of 9.86%, a simple delay of two years would cut the internal rate of return to 5.74%.

		0	1	2	3	4	5		
		-							
IRR	9.86%	10,000	2,447	2,547	2,647	2,747	2,847		
		0	1	2	3	4	5	6	
		-							
IRR	7.25%	10,000	0	2,447	2,547	2,647	2,747	2,847	
		0	1	2	3	4	5	6	7
		-							
IRR	5.74%	10,000	0	0	2,447	2,547	2,647	2,747	2,847

Unfortunately, without access to FCRC’s financial model, it is impossible to fully replicate what a delay in the timing of the project would result in. Nonetheless, the key point is that even a minor delay in the project’s timing will make it very difficult to complete.

It is expected that the development would contain 4,500 rental units, two-thirds of which would be market rate, with the remaining slated for affordable housing. In the analysis, the market rate units would be expected to rent at about \$45 PSF. A 1-bedroom, typically about 700 SF could be expected to rent for \$3,200, and a 2-bedroom, which is typically about 1,000 SF could be expected to rent for \$4,500.

Current Rental Environment

To some extent, Brooklyn is more resilient to downward pressure on rents in the current economic environment. This is due in large part to the fact that most apartment blocks are small and are owned by smaller investors who are less willing to reduce rents. More often, they resort to other options such as including various amenities with the unit such as internet access and/or cable. In contrast, owners of large newly developed buildings have resorted to rent abatements and rent decreases in order to keep units occupied. As an example, the Standish, a rental tower

with 94 units pays all brokerage fees, includes full gym membership, and has decreased asking rents on a number of its underperforming units.¹⁸

Compounding the issue of lower rents is the number of condos and coops that remain unsold. Many large scale projects are turning to the rental market to fill the units in order to achieve some cash flow. The former condo buildings that have turned rental are generally of higher quality than traditional rental units. The resulting effect is downward pressure on rental units that do not offer the same suite of amenities.

Current Rental Market

Based on our research and discussions with market participants, the average rent PSF is about \$35.50.¹⁹ It is relevant to note, that the numbers are skewed higher by the inclusion of Dumbo into the comparative data. Dumbo itself is adjacent to the East River, and the specific units included are unsold condo units, whose amenities, layout and overall quality are superior to those of an average rental building. Without the inclusion of Dumbo into the analysis, average rent PSF would decrease by about 5%.

Despite Dumbo's inclusion in the analysis, the rent PSF is substantially less than the \$45 amount that would be required for the prospective Atlantic Yards project. Brooklyn has typically been a low-rise community, where renter options are typically in Brownstones and low-rise apartment complexes. The introduction of large rental buildings in this area may result in higher rents, but the gap between projected rents and the current rental environment is substantial. Using \$35.50 as an average, which equates to about \$2,070 for a 1-bedroom, and \$2,950 for a 2-bedroom, an increase by \$9.50 PSF represents over a 26.6% increase.

Assuming a growth rate of 3% per year beginning in 2010, and continuing unabated, the rental market average would only pass the \$45 PSF threshold in year 9. Even assuming this optimistic outlook, it would be highly difficult to support a sustained demand for luxury product. Given the high vacancy rate in the luxury market, as well as the inherent challenges of creating a new luxury hub out of an area considered "blighted" by the ESDC, it is not reasonable to expect the development to be successful.

Current Occupancy

Historically, Brooklyn, like the other boroughs, has had a relatively low vacancy rate average of below 2%. According to Marcus and Millichap, which has been maintaining records of vacancy since 1980, the previous high in terms of vacancy was in 2003 when it reached 4% levels. Due to continued job losses, and new construction, vacancy is currently hovering around 3%, a 50 basis point increase over the prior year.²⁰ This number is expected to remain in the same range largely because of the future delivery of 2,300 for sale units in Brooklyn, many of which will not sell for some time.

As stated earlier, the most significant contributing factor to the deterioration of the rental market is unemployment. In 2008, Brooklyn lost around 6,000 jobs, and this number is expected to jump to 17,000 job losses in 2009. The unemployment rate, which currently stands at 7.6%, has increased by 310 basis points since the beginning of 2008. Without a decrease in unemployment, vacancy will remain relatively high, as will the glut of newly developed condo projects.

In addition to current stock, almost 2,000 new permits were issued for market rate multi-family development projects. Despite representing a 72% drop from the previous year, this will likely only increase existing vacancy.

¹⁸ <http://www.observer.com/2009/real-estate/brooklyn-rent-check?page=1>

¹⁹ See Appendix D for a breakdown of current rental units in the subject market.

²⁰ <http://therealdeal.com/newyork/articles/record-apartment-vacancy-rate-predicted-for-next-year>

Condo Market

In Williamsburg, a high sales volume neighborhood in Brooklyn, sales in 2009 are down 70% as compared to the previous year. Despite this, new units of buildings that were started prior to the decline in the real estate market continue to come online. According to Miller Samuels, a prominent New York appraisal firm, overbuilding has resulted in 2,820 units being on the block this year. Moreover, this total does not account for the new units currently slated for completion next year, which will add roughly the same number to the marketplace.²¹ Many developers have also resorted to pulling units off the market due to the lack of sales volume. Among new condo buildings not listed, but unsold are a 575-unit complex called the Edge, and Two Northside Piers, a 270-unit complex.

The issues confronting Brooklyn's real estate market are similar to those of Manhattan, where excess development has resulted in significant over building. Industry experts contend that New York as a whole has not experienced a real estate bottom and that an additional 15% price reduction is required for that to happen.²² This poses an additional challenge to the outer boroughs because their development is fueled in part by high condo prices in Manhattan, particularly in the luxury market. As a result, many would-be buyers can now consider Manhattan as a reasonable alternative.

A number of Brooklyn developers are attempting to maintain their prices on apartments of between \$750-775 PSF, despite market pressure to decrease. According to Miller Samuel, these prices do not reflect the market correction that has taken place since September 2009 when there was a 20 percent drop in values after the collapse of AIG and Lehman Brothers. Prices in Manhattan dropped from \$1,500 or \$1,600 to \$1,200 or \$1,300. Applying the same prices decreases on a percentage basis to the Brooklyn market, the Brooklyn properties should be in the \$600 PSF range.²³ When taking into account the already low IRR of the development project as documented by the original study, any decrease in sales and/or leasing pricing will have a devastating effect on the real feasibility of the project from an IRR perspective.

Overall, Brooklyn saw 1,428 sales in the second quarter, 29.7% below the 2,031 sales in the prior year quarter. The average sales price for a Brooklyn property was \$495,120, 15.9% below the \$588,441 average sales price from the prior year quarter.²⁴ There were 6,330 properties listed for sale, up about 5% from the prior quarter. While luxury properties have declined more than any other type, all product types have continued to fall from the prior quarter year.

According to HMS Associates, a separate appraisal firm, the biggest drop was in the amalgamated neighborhood of DUMBO, Boerum Hill and Downtown Brooklyn, where the average price crashed 22 percent to \$754,000. The area is crammed with new luxury high-rise buildings, and brokers have had a hard time unloading their stock.

Sale prices PSF for the proposed Atlantic Yards project were underwritten at \$850 PSF (2006 dollars). The market correction has resulted in a significant reduction in residential prices. Conservatively, if prices sell for 15%-20% less than projected, this would severely impact the financial viability of the project, and force a longer unit delivery period.

Office

²¹ <http://www.craigslist.com/article/20090809/SMALLBIZ/308099970>

²² <http://gothamgazette.com/article/issueoftheweek/20090223/200/2836>

²³ <http://gothamgazette.com/article/issueoftheweek/20090223/200/2836>

²⁴ http://www.prudentialelliman.com/NYCPHOTOS/retail_reports/Brooklyn_Q2_2009.pdf

Brooklyn's office market is correlated directly to the health of the financial services industry. It is among other things, considered a back office hub for front office located in Manhattan. Since 9/11, a number of firms have moved their entire staff out of Manhattan and to downtown Brooklyn. To date, 14,800 jobs have been lost in Brooklyn, 6,100 office using personnel.

Overall vacancy has been continually rising in Brooklyn and is currently at 9.7%, while class A vacancy is at 12.4%. Compared to many other markets, Brooklyn has fared relatively well, as only 179,000 square feet of office space has been delivered since the 2nd quarter of 2008. In addition, there is only 340,000 square feet of new office space proposed for future projects. Due to continued market pressure, vacancy is expected to continue to rise an additional 80 basis points in 2009. The Atlantic Yards project calls for 339,000 square feet of office space. While it may be possible for Forest City Ratner to attract a tenant to the area, it is a considerable amount of class A space. Given the rising vacancy rate, and declining rents, it may prove difficult to attract tenants willing to pay enough to justify the cost of construction. The general outlook for Brooklyn office space is for the price per square foot to continue to decline. Across all office classes, rent is expected to decrease about 4.4% in 2009 to \$27.69 per square foot, with class A space at \$33.56 per square foot. While office rent is not expected to decrease significantly more, growth is not expected until businesses once again begin hiring new personnel, and this may not occur in any significant numbers for several years. Forest City projected that they would lease space for \$39 PSF. It may be possible that tenants are willing to pay a premium to be near the new arena, but this will depend on the vacancy in the overall class A market. Premiums of 10% to 15% may be achievable, but assuming more than that may be aggressive and prove challenging.

Absorption

Given the almost unprecedented economic climate, and the resulting rise in unemployment, the absorption of new units will be heavily correlated to a job creating recovery. In 2008, about 7,300 units were completed in the entire borough. To put the proposed Atlantic Yards development in perspective, its nearly 6,500 units represents almost the entire number of units that were brought to market during the booming construction years of the early and mid 2000's. In contrast, the number of units built in the late 1990's was less than 2000 throughout the borough. In relation to population growth, Brooklyn experienced a 10% increase in population from 1990 to 2000. The units that were developed during the 2000's were a direct response to this population increase. From 2000 to 2008, the population increased a more modest 3.7%, which is more in line with a pattern of stable long term growth. If we assume that the population will continue to grow at the same rate over the next decade as the current decade, we can expect an additional 95,000 inhabitants in the borough. If the average number of persons per household is 2.61, and without taking existing stock into account, an additional 37,600 units will be required over a 10-year span. ²⁵

The current number of housing units in Brooklyn is about 930,000.²⁶ The current vacancy is about 3.5%. 3.5% of 930,000 is 32,000 housing units. Assuming that 2% is a reasonable level of vacancy in this market, there exist roughly 13,000 excess units in the current market. When deducting this excess stock from future requirements, the number of new homes is about 20,000. Given that the median income level in Brooklyn is \$32,135²⁷, the vast majority of the required units will be for middle to lower income households. If we assume, somewhat optimistically, that 25% of the required units will be for high income earners, the total required number would be 5,000 for the entire borough. To put this in perspective, the Atlantic Yards development includes about a minimum of 4,000 high end units, including both condos and apartments. This represents 80% of the total estimated demand over a ten year period.

²⁵ <http://www.fedstats.gov/qf/states/36000.html>

²⁶ <http://www.city-data.com/housing/houses-Brooklyn-New-York.html>

²⁷ <http://en.wikipedia.org/wiki/Brooklyn#Demographics>

According to this author, it is patently unreasonable for one development, in one very limited physical area of Brooklyn to absorb 80% of all high end units in the entire borough over a ten year period. Looking at the development from this perspective alone, one can surmise that it will take at least twice as long to construct, meaning that it will require at least 20 years to fully absorb all of the units. The FCRC plan calls for development to continue unabated for almost 10 years irrespective of the state of the overall economy. In reality, buildings will not be developed if demand is lacking. Not only will they not be able to be filled, but no financing will be made available by the private sector and the public sector is generally not in the business of financing the development of market rate housing, especially if comparable properties remain vacant. This lack of demand and financing would inevitably stretch out the development period to one that is more sustainable, likely over 20 years.

Impact of Timing

The FEIS analyzed two build years: 2010 (Phase I), which included development of the entire program slated for the project site west of 6th Avenue and the new LIRR rail yard; and 2016 Atlantic Yards Arena and Redevelopment Project (Phase II), when the buildings at the eastern end of the project site—together with the Phase I development—were anticipated to be developed and occupied. At full build-out, the approved project would comprise the 150-foot-tall arena and 16 other buildings with maximum heights ranging from approximately 184 feet to approximately 620 feet.²⁸

Table 2

FEIS and Revised Construction Phasing

Project Component	FEIS		Revised	
	Duration	Time Period	Duration	Time Period
Phase I				
LIRR Rail Yard*	42 months	2006-2010	79 months	2007-2013
Arena**	32 months	2007-2009	29 months	2009-2012
Building 1	41 months	2007-2010	35 months	2010-2013
Building 2	22 months	2008-2009	22 months	2010-2012
Building 3	32 months	2008-2010	32 months	2010-2013
Building 4	36 months	2008-2010	36 months	2011-2014
Site 5	41 months	2007-2010	37 months	2011-2014
Phase II				
Platform Block 1120	23 months	2009-2011	29 months	2011-2014
Building 5	24 months	2011-2012	24 months	2013-2015
Building 6	21 months	2011-2012	21 months	2014-2016
Building 7	30 months	2011-2013	32 months	2014-2017
Site Preparation Blocks 1121 & 1129	71 months	2006-2012	107 months	2007-2014
Platform Block 1121	20 months	2011-2012	20 months	2014-2015
Building 8	18 months	2012-2014	18 months	2015-2017
Building 9	21 months	2014-2015	21 months	2017-2018
Building 10	20 months	2015-2016	20 months	2018-2019
Building 11	18 months	2015-2016	18 months	2018-2019
Building 12	21 months	2015-2016	20 months	2018-2019
Building 13	18 months	2014-2015	18 months	2017-2018
Building 14	15 months	2012-2013	15 months	2015-2016
Building 15	31 months	2010-2012	32 months	2012-2015
Notes: *Extended schedule reflects periodic suspensions of construction activity since commencement of the temporary yard in 2007.				
**Includes excavation				

Source: ESDC Technical Memorandum, June 2009, page 6, http://nylovesbiz.com/pdf/AtlanticYards/Technical_Memo_text.pdf

²⁸ ESDC Technical Memorandum, June 2009, pages 1-2, http://nylovesbiz.com/pdf/AtlanticYards/Technical_Memo_text.pdf

In the revised construction schedule for the project, work on Building 1 would begin in November 2010 and would conclude in August 2013, a period of 35 months. The other buildings on the arena block would be constructed at roughly the same time, with the arena and Building 2 completed in 2012, Building 3 completed in 2013, and Building 4 completed in 2014. If the development of Building 1 were delayed, however, it is assumed for the purposes of ESDC’s analysis that construction of this building would begin after the other buildings on this block are completed. In this scenario, construction of Building 1 would start in June 2014 and extend through March 2017 (see Table 1). The period of construction would remain the same, at 35 months. Although under this scenario Building 1 could be constructed at anytime during the project’s Phase II build out, it was conservatively assumed in this discussion that construction of Building 1 would occur during the Phase II peak construction activity. Thus, Building 1 would be under construction at the same time as buildings are slated to come on line during Phase II of the project, specifically Buildings 5, 6, 7, 8, 14, and (for a short period) 15.

Table 1

Arena Block Construction Phasing

Project Component	Revised Project Schedule		Building 1 Delay Scenario	
	Duration	Time Period	Duration	Time Period
Arena	29 months	2009-2012	32 months	2009-2012
Building 1	35 months	2010-2013	35 months	2014-2017
Building 2	22 months	2010-2012	21 months	2010-2012
Building 3	32 months	2010-2013	32 months	2010-2013
Building 4	36 months	2011-2014	36 months	2011-2014

According to the MGPP until construction of Building 1 commences, the future Urban Room area at the southeast corner of Flatbush and Atlantic Avenues would be occupied by an outdoor urban plaza. The urban plaza would follow the basic use and design principles of the Urban Room in order to create a significant public amenity.

The potential delay in the completion of Building 1 would have certain implications for arena operations as well as for the construction-period uses of this building site. The uses identified for the Urban Room would still be provided; the urban plaza would still serve as a new access point to mass transit for the neighborhoods to the south, east and west of Atlantic Avenue, providing new escalators, an elevator, stairways, and passageways leading to the subway station below.²⁹

The problem with this plan is that it envisions a stunning level of new ground-up residential and/or office development to start essentially in 2010 and 2011. Under the “Building 1 Delay Scenario”, the problem of overdevelopment and competing with one’s own projects is essentially kicked forward to 2014 when Building 1 is built at the same time as many of the buildings of Phase II. In addition, it’s not as if any of these buildings are inconsequential.

²⁹ ESDC Technical Memorandum, June 2009, page A-1, A-2, http://dddb.net/documents/environmental/2009/Technical_Memo_text.pdf

Atlantic Yards Building Heights & Square Footages (revised)		
General Project Plan	Height	Gross Square Footages <small>(retail/community facility space evenly divided among the buildings in each block)</small>
Block 927		
Site 5 - Residential / Commercial	250'	439,050
Block 1118, 1119 & 1127 (Arena Block)		
Building 1 - Mixed Use/ Commercial	620'	1,106,009
Building 2 - Residential/ Commercial	322'	380,687
Building 3 - Residential	219'	343,632
Building 4 - Residential	511'	824,629
Phase One Total Not to Exceed		2,691,000
Phase One Total (Including Arena) Not to Exceed		3,541,000
Block 1120		
Building 5 - Residential	397'	635,443
Building 6 - Residential	219'	445,060
Building 7 - Residential	460'	733,810
Block 1121 & 1129		
Building 8 - Residential	283'	523,336
Building 9 - Residential	419'	674,142
Building 10 - Residential	313'	475,601
Building 11 - Residential	202'	330,778
Building 12 - Residential	287'	317,185
Building 13 - Residential	241'	327,215
Building 14 - Residential	184'	283,971
Block 1128		
Building 15 - Residential	272'	341,910
Phase Two Total Not to Exceed		4,434,000
Project Total (Without Arena) Not to Exceed		7,125,000
Project Total (Including Arena) Not to Exceed		7,975,000
<small>* Approximate ground floor retail square footages are included in all buildings * Heights are the maximum height of the last occupiable floor * The commercial variation allows Site 5, building 1 and building 2 to be all commercial above the ground floor * The aggregate gross square footages of the individual buildings are greater than the maximum square footage that would be developed in each phase to allow for individual building square footage changes. However, no individual building would exceed the height listed and the total square footage built in each phase would not exceed the square footage maximum for that phase.</small>		

Source: ESDC Modified General Project Plan June 23, 2009, page 51, <http://nylovesbiz.com/pdf/AtlanticYards/MODGPP2009.pdf>

Buildings 1, 2, 3, and 4 encompass 2,251,950 square feet of residential, retail, and office development. While it should be noted that while Building 1 is an office building, the retail portion will compete with the other retail that is being brought online at the same time.

Cost of Construction

The project's budget is currently estimated as set forth below. Compared to the budget estimate included in the FEIS, this estimate includes costs, such as land and other soft costs which were excluded from the estimate used to calculate the economic benefits of the project in the FEIS. In addition, neither the project budget included in the FEIS nor this GPP includes financing costs.³⁰

Use	Amount
Site Acquisition	417,000,000
Arena	772,000,000
Residential	2,645,000,000
Office/Hotel	255,000,000
Infrastructure	717,000,000
Miscellaneous	92,000,000
Total	\$4,898,000,000

While estimates vary, the cost of interest is substantial. As a general rule of thumb, financing can add approximately 10% or more to the overall cost of the development. We find it telling that the ESDC did not show how the project would be potentially financed; in today's unusually erratic credit markets, this is probably the most important issue for any developer. See Appendix B for an example of how interest costs can substantially increase the cost of a hypothetical 2- year construction project.

As is typical for New York City, residential developments within the project are expected to be financed in a number of ways, depending on the type of development. Affordable housing is expected to be financed through tax-exempt bonds provided under existing and proposed City and State housing programs, such as the City's 50-30-20 program. Market-rate condominiums will be financed through conventional means, as will commercial office and retail developments. Through construction, because ESDC will continue to hold the fee interests, leasehold financing will be used. After conveyance of the fee interests to the developer/owner entity, the mortgages could be spread to cover the fee. FCRC will create condominium regimes for the residential condominium developments.³¹

The larger issue for the affordable housing portion of the project is whether or not there is sufficient bonding capacity to enable its successful development. The development of 2,250 affordable housing units is substantial. While a full analysis of the State's capacity to issue bonds is beyond the scope of this report, it's not clear whether or not the City and State has sufficient capacity in the near and long-term future to finance their share of this project. Furthermore, if the City and State do not issue a sufficient amount of bonds to subsidize the development, it is unclear whether or not FCRC must still build the affordable housing. If they were to be required, the weight of building 2,250 housing units and renting them for substantially below market could easily sink any development.³²

Timing of Payments to Purchase Land

Previously, in 2006, FCRC had planned to pay \$100M upfront for all of the MTA property (both Phase I and II) representing a significant commitment of resources to secure all of the rights for the real property held by MTA necessary to complete the project. Similarly, ESDC was committing to acquire all of the privately held properties in Phase II as part of a single phase of eminent domain acquisition.

³⁰ ESDC Modified General Project Plan June 23, 2009, page 27, <http://nylovesbiz.com/pdf/AtlanticYards/MODGPP2009.pdf>

³¹ ESDC Modified General Project Plan June 23, 2009, page 31, <http://nylovesbiz.com/pdf/AtlanticYards/MODGPP2009.pdf>

³² <http://atlanticyardsreport.blogspot.com/2009/08/documents-show-affordable-housing.html>

FCRC has renegotiated the purchase agreement with MTA so that is only paying \$20M for the Phase I MTA lands. The amended agreement allows FCRC to start paying the MTA \$2M/yr for four years starting on 6/2012 for the air rights over the blocks for Phase 11, followed by an \$11M/yr payment for 15 years starting on 6/16 for the balance of the air rights.³³ The new agreement is structured so that FCRC is able to abandon Phase II as early as 2012 with no penalty or by 2016 with a relatively small penalty of at most \$8M. The effect of the agreement is to permit FCRC to secure rights to the property at minimal risk or commitment of funds and to extend payments well into the future to allow for demand to recover and the capital markets to support the project.

This new structure demonstrates two things. First, it indicates that FCRC knows that the project will not be completed by 2019 and, in fact, is unlikely to be completed until 2030. 2030 is the date for the final payment to the MTA and the agreement provides that title to a particular building footprint will not be transferred until payment is made for that parcel. FCRC is apparently less confident in its ability to obtain financing for Phase II than it was in 2006. It has thus renegotiated the original deal to allow it to abandon the project either as early as 2012 when the first \$2M payment is due, each year thereafter on the annual \$2M payment, or by 2016 when the payments increase to \$11M. Of course, it is very unlikely that if the project is delayed until 2016 FCRC will actually want to pay \$11M per year to stay in the project.

The authors believe that the renegotiation of the original 2006 agreement is the clearest example that the developer now realizes that there is substantial uncertainty surrounding the financial feasibility of the project and that the original timeframe is now completely unrealistic. It appears that the project is so speculative that FCRC is unwilling, at this time, to commit the resources necessary to secure the MTA properties which comprise the core and primary justification for the project.

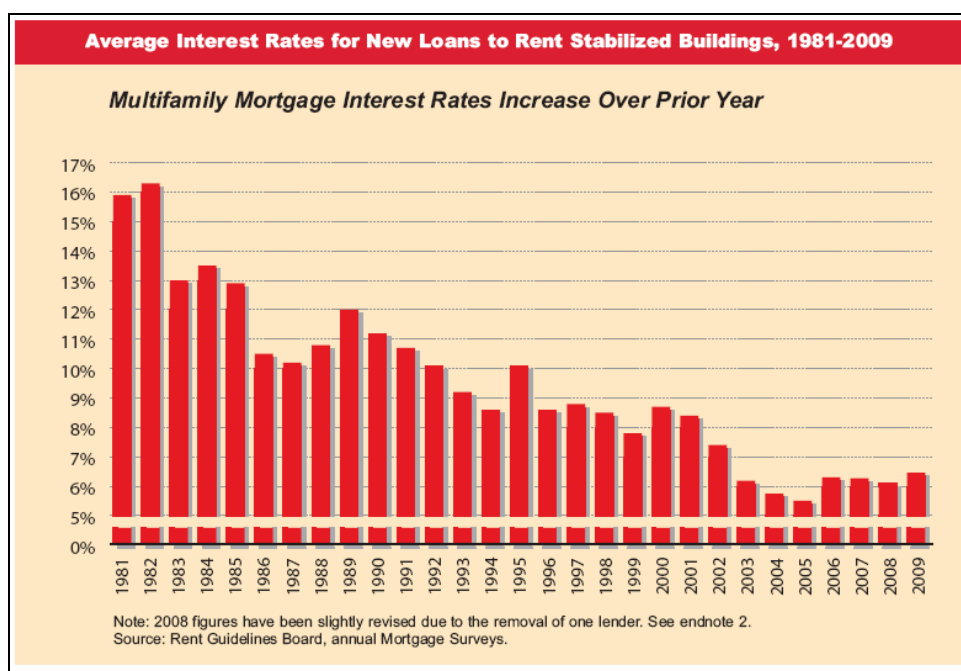
³³ "Atlantic Yards Project" Staff Summary, Gary J. Dellaverson, Metropolitan Transportation Authority, June 22, 2009

STATE OF THE CAPITAL MARKETS

Availability of Financing for Residential Development

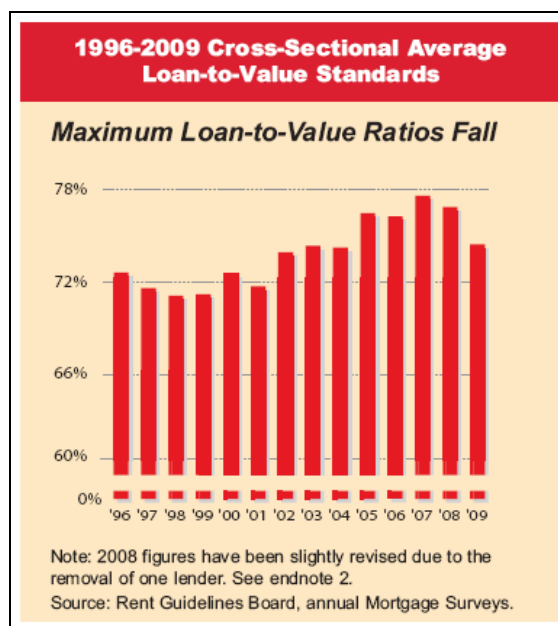
One of the most useful surveys on the availability of financing for in place residential buildings in New York City is the Mortgage Survey Report that is put out by the Rent Guidelines Board every year. Section 26-510 (b)(iii) of the Rent Stabilization Law requires the Rent Guidelines Board to consider the “costs and availability of financing (including effective rates of interest)” in its deliberations. To assist the Board in meeting this obligation, each winter the RGB research staff surveys lending institutions that underwrite mortgages for multifamily rent stabilized properties in New York City. The survey provides details about New York City’s multifamily lending market during a given calendar year as well as the first few months of the next year.

The availability of financing has been a challenge. On one hand, interest rates have dropped pretty much consistently since in the early 1980’s. Even with all of the recent financial crises, the rates remain low.



Source: 2009 Mortgage Survey Report, New York City Rent Guidelines Board, p.4, housingnyc.com

The issue is not whether or not the rates are low; the issue is whether or not financing is available. For example, lenders are providing less financing even for the most stable of products – rent stabilized apartment buildings in New York City.



Source: 2009 Mortgage Survey Report, New York City Rent Guidelines Board, p.7, housingnyc.com

While the most commonly cited change in underwriting practices were declines in the maximum loan-to-value ratio (LTV), reported by 38% of the lenders; an increase in monitoring requirements (31%); and higher points (25%). One could wonder whether or not this survey is applicable to market rate non-rent stabilized buildings. The survey also asked lenders whether their lending standards differ for rent stabilized buildings as opposed to non-stabilized multifamily properties. Respondents were asked whether their new financing rates, refinancing rates, loan-to-value ratios, and debt service coverage requirements for rent stabilized properties were higher, lower, or the same as for other properties. The vast majority (86%) reported that standards were no different for stabilized buildings.³⁴

General Capital Market Issues

There are also broader economic issues affecting the economy. The general collapse of the credit markets that started in 2007 and has continued until now has had broad impacts for the real estate development industry.

At the risk of being dramatic, no one really knows how long this current financial crisis will last. The last time we encountered a triple crisis (banking, currency, and trade) was the Great Depression; while it would be hyperbolic to state that we're going to be in this for 15 years, this is not a normal "producer-led" recession.

The closest recession to our current one in terms of its effect on the real estate industry would be the one that we last went through in the early 1990's. Our collective experience of the length of that recession has interesting implications for the one we are currently mired in. In short, the last time we were in a recession, there had been an excess of lending from savings and loan institutions. While the reasons for the specific crisis can be debated, the important fact is that when the United States went through the Savings and Loan crisis in the late 1980's and early 1990's, it took a number of years for the system to work itself out.

³⁴ Source: 2009 Mortgage Survey Report, New York City Rent Guidelines Board, p.7, housingnyc.com

The Federal government had to intervene, shut down the Federal regulator, FSLIC, and establish a new entity called the Resolution and Trust Corporation (“RTC”) that was charged with unwinding the investments that the savings and loans had made.

Thrift Failures, 1986–1995

(\$Millions)

Year	FSLIC		RTC	
	Number	Assets	Number	Assets
1986	54	\$ 16,264		
1987	48	11,270		
1988	185	96,760		
1989	9	725	318	\$134,520
1990			213	129,662
1991			144	78,899
1992			59	44,197
1993			9	6,148
1994			2	137
1995			2	435
Total	296	\$125,019	747	\$393,998

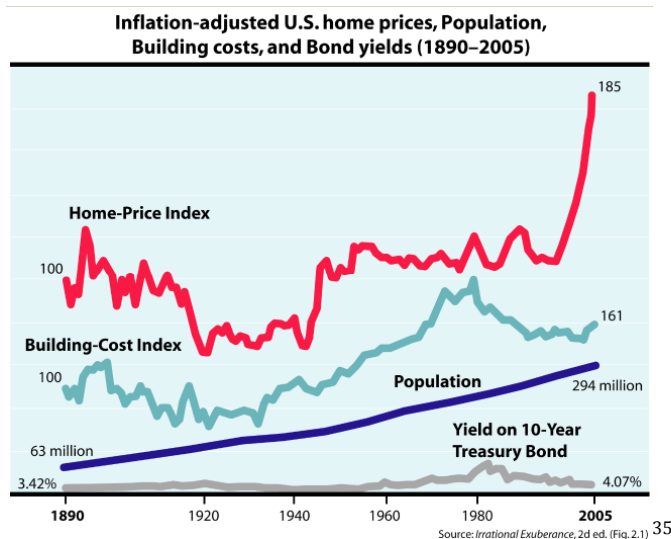
Source: FDIC.

Note: Data are for the period January 1, 1986, to December 31, 1995.

Source: The Cost of the Savings and Loan Crisis: Truth and Consequences, FDIC Banking Review, Timothy Curry and Lynn Shibus, December 2000

In that crisis, the RTC took a little short of 10 years to close 747 banks and dispose of their real estate assets in an orderly way. Current evidence suggests that this crisis will produce a similar level of distressed asset sales, if not much higher.

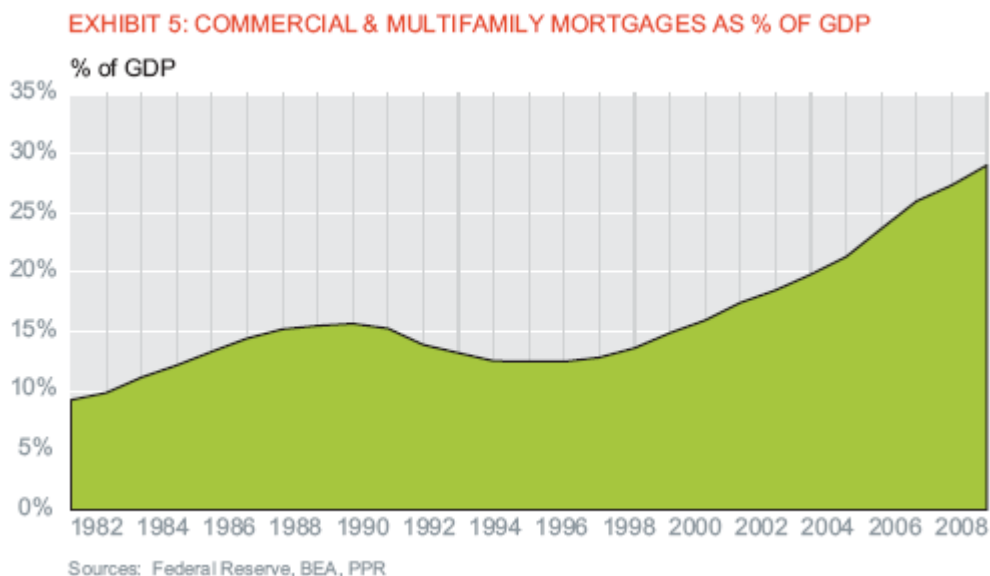
It can also be argued that the increase in house prices that we have witnessed over the last 20 years will not be seen for another generation.



If you look at the history of house prices going back for over 100 years, what we have just witnessed in housing prices will probably result in a prolonged period of price decline. When the original KPMG study was completed, prices were at a high, and construction cost was relatively flat in comparison. If we assume that the pricing curve returns to a more historically accurate trajectory, the adjustment which we are continuing to experience will be both significant and long lasting.

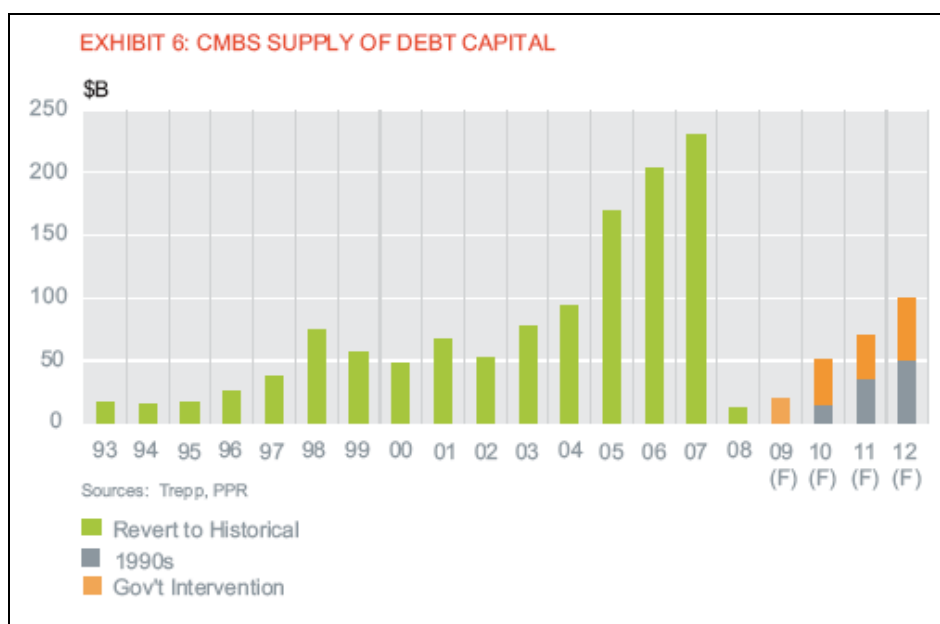
³⁵ This graph was repackaged on wikipedia.org from the original data set.

In addition, the financing binge that the real estate industry went through over the last 25 years is truly historic. When one looks at the outstanding balances of commercial and multifamily mortgages in relation to the overall economy, it's truly remarkable.



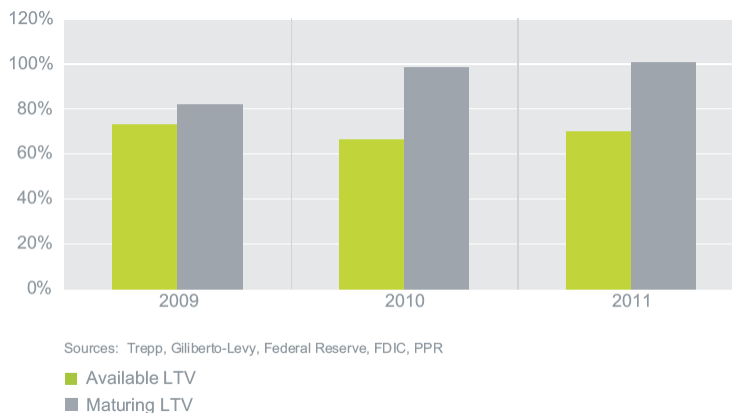
Source: The "Capital Cap" In Commercial Real Estate, Mark Fitzgerald, Steve Miller, *Real Estate/Portfolio Strategist*, Property and Portfolio Research, Volume 13, Number 5, May 2009, page 5.

Essentially, as the economy grew, the level of mortgage debt grew substantially faster. To a large extent, this was not due to the increase of bank financing. As the 1990's and 2000's ground on, financing was increasingly available in the form of commercial mortgage backed securities. In other words, investors on Wall Street were providing financing directly through a bond product as opposed to through traditional intermediaries such as banks. With the credit crisis, the commercial mortgage backed securities ("CMBS") tap of capital was essentially shut off. As you can see in the table below, in 2008, the CMBS industry stopped providing capital.



Source: The "Capital Cap" In Commercial Real Estate, Mark Fitzgerald, Steve Miller, *Real Estate/Portfolio Strategist*, Property and Portfolio Research, Volume 13, Number 5, May 2009, page 6.

With government intervention, there is the possibility that capital will return. As we enter 2010, with any luck, Wall Street will start investing in real estate mortgages again. The more interesting question is what if they don't? The short answer is if lenders don't start lending money again, there will be a remarkable number of foreclosures of commercial and residential assets.



Source: The "Capital Cap" In Commercial Real Estate, Mark Fitzgerald, Steve Miller, *Real Estate/Portfolio Strategist*, Property and Portfolio Research, Volume 13, Number 5, May 2009, page 13.

As you can see on the chart above, there will not be sufficient capital to refinance existing commercial assets as we enter 2010 and 2011. The United States has so much real estate with debt that is maturing in a market of declining values that the effective loan to value will be essentially 100%. As banks are generally not in the business of lending a borrower 100% of the value of an asset (as the standard for commercial assets is more in the range of 75%), the logical conclusion is that there will be a high number of foreclosures of commercial assets. It seems unlikely that lenders will be willing to lend money for the development of new assets when existing assets can be purchased for less than the cost of new construction.

State of Forest City Enterprises

This credit crisis has also greatly affected Forest City Enterprises itself. Its current market capitalization (as of 8/19/09) is a little over \$1 billion. This is a substantial loss from its peak in 2007 when its value was in excess of \$10 billion.



Source: google.com

While the author fully acknowledges the vagaries of the stock market, the reality is that Forest City, as is the case with almost any major real estate developer in the United States, is far less capable of completing this project than they were at the height of the market in late 2006 and early 2007.

APPENDIX A: DEVELOPMENTS THAT ARE RECENTLY COMPLETED OR
ANTICIPATED TO BE COMPLETE FROM THE JUNE 2009 ESDC TECHNICAL
MEMORANDUM

Table 3

Development in the Study Area Recently Completed or Anticipated to be Complete by 2019

Map No. ¹	Project Name/Address	Development Proposal/Program	Study Area	Build Year ⁹
1	LIU Recreation and Wellness Center (site of present Goldner Building and LIU tennis courts)	10,000 sf for Brooklyn Hospital Center/athletic staff; 117,000 sf wellness/recreation center with natatorium, tennis courts, track, 3,500 seating for athletic events	Primary	Completed
2	The Greene House, 383 Carlton Avenue between Lafayette and Greene Avenues	27 dwelling units	Primary	Completed
3	Atlantic Terminal	425,000 sf office, 470,000 sf retail, rehabilitated LIRR station ³	Primary	Completed
4	One Hanson Place (Williamsburgh Savings Bank Building)	178 [189] dwelling units; 30,000 sf dental offices; 23,000 sf retail	Primary	Completed [2007]
5	South Portland Avenue at Atlantic Avenue (Block 2004)	32 3-family houses	Primary	Completed
6	Atlantic Terrace (aka 669 Atlantic Avenue), Atlantic Ave. between South Portland Ave. and South Oxford St.	80 dwelling units; 12,100 [11,960] sf ground-floor retail, 87 subgrade parking spaces Rezoning: C6-1 to C6-2 ⁴	Primary	2010 [2008]
7	567 Warren Street between 3rd and 4th Avenues	20 dwelling units	Primary	Completed [2006]
8	The Washington, 35 Underhill Avenue between Pacific and Dean Streets	39 dwelling units	Primary	Completed [2006]
9	On Prospect Park/1 Grand Army Plaza [17 Eastern Parkway]	102 [200] dwelling units	Primary	Completed [2007]
10	Bond Street Garage	14,000 sf retail; 4,000 sf community facility	Primary	Completed
11	State Renaissance Court [Schmerhorn between Hoyt and Bond Streets (Block 171)]	158 [135] units, 14,700 sf ground-floor retail and 50 parking spaces, 14 townhouses ⁵	Primary	Completed [2009]
12	80 DeKalb Avenue between Hudson Avenue and Rockwell Place	335,000 [430,000] sf residential (365 residential units)	Primary	2010 [2009]
13	BAM LDC South (Block 2108 bounded by Ashland Place and Lafayette and Flatbush Avenues) ²	180 housing units, 187,000 sf rehearsal studio, cinema, visual arts space ⁹ [140,000 sf visual and performing arts library, 40,000 sf theater, 15,000 sf commercial, 466 car public parking facility]	Primary	2013
14	BAM LDC North (Block 2107 bounded by Ashland and Rockwell Places, Lafayette Avenue, and Fulton Streets)	299 seat/30,000 sf [50,000 sf] theater, office/rehearsal space, public outdoor space, 187 [570,000 sf] residential units, 4,000 [10,000] sf retail space [7,000 sf open space, 43,000 sf dance center, 160,000 sf museum/gallery, 465-space parking facility]	Primary	2013
15	395 Flatbush Avenue Ext. ²	12,000 sf retail/office expansion	Primary	2013
16	Atlantic Center	850,000 sf residential, 500,000 [550,000] sf commercial, 395,000 sf retail on lower levels (same as in existing conditions)	Primary	TBD [2013]
17	254 Livingston Street ²	186,000 sf residential, 21,000 sf commercial	Primary	2013
18	230 Livingston Street at the southwest corner of Bond Street (Block 165, Lots 17-19 and 58) ²	271 unit/260,000 sf [163,000 sf] residential [18,000 sf commercial]	Primary	2013
19	Fulton Street/Rockwell Place (aka 29 Flatbush Avenue)	333 [140] dwelling units	Primary	2013 [2007]
20	The Forte: Fulton Street/Ashland Place	108 [100] dwelling units	Primary	Completed [2007]
21	BAM LDC East: 620-622 Fulton Street	150 [80] residential units (100,000 sf), 60,000 sf community facility [7,200 sf retail]	Primary	2013 [2009]
22	Ingersoll Community Center	18,250 sf community center (replaces former 9,000 sf center)	Secondary	2009 [2006]
23	City Point: Flatbush Avenue at Albee Square West (Block 149, Lots 1 and 49) ²	360,000 [1,233,000] sf office, 520,000 [415,000] sf retail, 650 unit/900,000 sf residential, 404 parking spaces (113,962 sf) ⁶	Secondary	2013

Table 3 (cont'd)

Development in the Study Area Recently Completed or Anticipated to be Complete by 2019

Map No. ¹	Project Name/Address	Development Proposal/Program	Study Area	Build Year ²
24	Sheraton Aloft Hotel: 222-228 Duffield Street: Willoughby Street between Gold and Duffield Streets (Block 146, Lots 2, 7, 11-18, 23, 29, 34-37, 41-43, and 46-52) and Hotel Indigo (237 Duffield Street) ³	500 plus 180 hotel rooms (2 hotels), 1.25-acre [1.15-acre] public space (Willoughby Square), 700 -space [694-space] public parking facility [999,000 sf office, 48,000 sf retail]	Secondary	2009 [2013]
25	505 Fulton Street: Willoughby Street between Duffield and Bridge Streets (Block 145, Lots 8, 10, 13-16, 18-22, 26, and 32) ²	544,000 sf residential [office], 50,000 sf retail	Secondary	2013
26	Red Hook Lane: Adams Street/Boerum Place at Fulton Street (Block 153, Lots 3, 14, and 15; Block 154, Lots 1, 5, 11, 12, and 36-40) ²	788,000 sf office, 70,000 sf retail	Secondary	2013
27	53 Boerum Place	99 dwelling units, 85 parking spaces	Secondary	Completed
28	Schermerhorn House and Hoyt-Schermerhorn I and II: ESDC/HS (Block 170, south of Schermerhorn Street between Smith and Hoyt Streets)	440 dwelling units (including 217 [200] affordable)	Secondary	2009 [2008]
29	The Smith Condominiums and Hotel (75 Smith Street at Atlantic Avenue)	50 dwelling units, 93-unit hotel, 15,000 sf ground floor retail, 8,500 sf community facility, 130 space parking facility [31,500 sf commercial/office use]	Secondary	Completed [2007]
30	Toren, Myrtle Avenue at Flatbush Avenue (Block 2060, Lots 22-27, 32 [part], and 122; Block 2061, Lot 1 [part]; Block 2062, Lot 6 [part]) ²	280 residential units [300,000 sf], 60,000 sf retail; 457-space public parking facility	Secondary	2009 [2013]
31	Catsimatidis Red Apple/218 Myrtle Avenue between Fleet Place and Ashland Place (Block 2061, Lot 1 [part]) ²	660 residential units [259,000 sf], 22,000 sf [86,000 sf] retail	Secondary	2011 [2013]
32	The Collection 525 (525 Clinton Avenue)	30 dwelling units, 15,500 of medical office, 41 parking spaces	Primary	Completed [2007]
33	557 Atlantic Avenue	72 dwelling units	Primary	Completed [2006]
34	477 Atlantic Avenue	21 dwelling units	Primary	Completed [2006]
35	Waverly Avenue Charter School	Conversion of existing 80,000 sf building to a charter school	Primary	2009 [2008]
36	Park Slope Court (110 Fourth Ave near Warren)	49 residential units	Primary	2009
37	126 Fourth Avenue	50 residential units	Primary	Completed
38	255 Fourth Avenue	41 residential units	Secondary	2009
39	Elan Park Slope (255 First Street)	21 residential units	Secondary	Completed
40	Crest (302 2nd Street at 4th Avenue)	68 residential units	Secondary	Completed
41	159 Myrtle Avenue by Avalon Bay	650 residential units, 5,000 sf retail, parking	Secondary	2009
42	470 Vanderbilt Avenue	376 residential units, 115,424 sf retail, 579,645 sf office, 397 accessory parking spaces ⁷	Primary	2011
43	Rockwell Place	37 residential units	Primary	Completed
44	111 Lawrence Street (Block 148, Lot 1)	500 residential units	Secondary	2010
45	150 Fourth Avenue	95 residential units	Primary	2019
46	181 Third Avenue	130 room/65,785 sf hotel	Primary	2019
47	252 Atlantic Avenue/97 Boerum Place	65 residential units, ground floor retail, on-site parking	Secondary	2019
48	Brooklyn House of Detention (275 Atlantic Avenue)	Expansion of current jail from 815 to 1,478 beds (renovation and 40,000 sf of new construction)	Secondary	2012
49	Holiday Inn, 300 Schermerhorn Street (Block 174, Lot 24)	247 room/108,163 sf hotel	Primary	2010
50	307 Atlantic Avenue	26 residential units (27,462 sf)	Secondary	2019
51	316 Bergen Street	39 residential units (63,434 sf)	Primary	2019
52	388 Bridge Street	360 residential units	Secondary	2019
53	462 Baltic Street	35,551 sf office, 61 parking spaces	Primary	2019
54	611 DeGraw Street	25 room/12,625 sf hotel	Primary	2019
55	675 Sackett Street	38 residential units	Primary	2019
56	340-346 Bond Street	22 residential units	Secondary	2019
57	265 Third Avenue	57-room hotel	Secondary	2019
58	Consolidated Edison (block bounded by First and Third Streets)	52,000 sf office	Secondary	2019
59	225 Fourth Avenue	40 residential units	Secondary	2019
60	238 St. Marks Avenue	20 residential units	Primary	2019
61	324 Grand Avenue	29 residential units	Primary	2019

Table 3 (cont'd)

Development in the Study Area Recently Completed or Anticipated to be Complete by 2019

Map No. ¹	Project Name/Address	Development Proposal/Program	Study Area	Build Year ²
62	76 Lexington Avenue	21 residential units	Secondary	2019
63	1124 Bedford Avenue	67 residential units	Secondary	2019
<p>Notes: Projects noted as complete (not bold text) were complete as of the FEIS. Projects noted as complete (bold text) have been finished since the FEIS. Changes in projects since the FEIS are noted with bold text; the portions of these projects that are no longer accurate are noted [in brackets] and <i>in italics</i>.</p> <p>¹ See Figure 6.</p> <p>² Projects anticipated as a result of the Downtown Brooklyn rezoning.</p> <p>³ The LIRR station rehabilitation is currently under construction.</p> <p>⁴ Rezoning to C6-2 completed.</p> <p>⁵ The townhouses are currently under construction.</p> <p>⁶ Includes 373,000 sf of existing retail; project will add 147,000 additional sf of retail</p> <p>⁷ Includes 578,554 sf of existing office and 200 existing parking spaces; project will add 1,091 sf office and 197 accessory parking spaces</p> <p>⁸ Projects for which completion dates were not available were assumed to have a build year of 2019.</p> <p>⁹ Development plan still being finalized.</p> <p>Sources: Downtown Brooklyn Council, New York City Economic Development Corporation, New York City Department of City Planning, New York City Department of Housing Preservation and Development, AKRF, Forest City Ratner Companies.</p>				

Source: ESDC Technical Memorandum, June 2009, page 7-9, http://nylovesbiz.com/pdf/AtlanticYards/Technical_Memo_text.pdf

APPENDIX B: IMPACT OF FINANCING COSTS ON THE OVERALL COST OF A DEVELOPMENT

Annual Interest Rate	7.00%
Monthly Interest Rate	0.58%
Loan to Cost	80%

DRAWS

Index Month	Cost of Construction	Construction Draw	Interest	Total Draw	Ending Balance
0				0	0
1	416,667	333,333	0	333,333	333,333
2	416,667	333,333	1,944	335,278	668,611
3	416,667	333,333	3,900	337,234	1,005,845
4	416,667	333,333	5,867	339,201	1,345,045
5	416,667	333,333	7,846	341,179	1,686,225
6	416,667	333,333	9,836	343,170	2,029,395
7	416,667	333,333	11,838	345,171	2,374,566
8	416,667	333,333	13,852	347,185	2,721,751
9	416,667	333,333	15,877	349,210	3,070,961
10	416,667	333,333	17,914	351,247	3,422,208
11	416,667	333,333	19,963	353,296	3,775,505
12	416,667	333,333	22,024	355,357	4,130,862
13	416,667	333,333	24,097	357,430	4,488,292
14	416,667	333,333	26,182	359,515	4,847,807
15	416,667	333,333	28,279	361,612	5,209,419
16	416,667	333,333	30,388	363,722	5,573,141
17	416,667	333,333	32,510	365,843	5,938,984
18	416,667	333,333	34,644	367,977	6,306,961
19	416,667	333,333	36,791	370,124	6,677,085
20	416,667	333,333	38,950	372,283	7,049,368
21	416,667	333,333	41,121	374,455	7,423,823
22	416,667	333,333	43,306	376,639	7,800,462
23	416,667	333,333	45,503	378,836	8,179,298
24	416,667	333,333	47,713	381,046	8,560,344
	<u>7,500,000</u>	<u>6,000,000</u>	<u>560,344</u>	<u>6,306,961</u>	

Bank Fees and Taxes	189,209	3.00%
Interest	560,344	
Fees + Interest	<u>749,553</u>	
Cost of Construction	7,500,000	

9.99% (Fees + Interest)/Cost of Construction

APPENDIX C: OTHER MEGA PROJECTS IN NYC: BATTERY PARK CITY AND METROTECH

The size of Atlantic Yards must also be put in perspective relative to other “mega-projects” or a comparable size and scope. In specific, the history of two projects in particular can teach us important lessons about the viability of mega-projects in New York City. To build a project of this size, it requires more than financial viability; it must also be politically viable. This section discusses the history and timeframe of the construction of Battery Park City and Metrotech.

Battery Park City (“BPC”)

Battery Park City is a 92-acre planned community at the southwestern tip of the island of Manhattan. The land on which it stands was created from dirt and rock excavated for the World Trade Center.

History

In the 1800’s and the early 1900’s, the area around Battery Park City was known as the Greek quarter. By the late 1950’s, the area had become dilapidated with a number of unused shipping piers. By the 1960’s, under governor Nelson Rockefeller, a plan was announced to completely build out the area as a master planned community to be comprised of residential buildings, light industrial and social infrastructure.

Urban Renewal

In 1968, the Battery Park City Authority (BPCA) was established to oversee the development. In 1972, after 3 years of planning, the BPCA issued \$200M in bonds to begin development. By 1976, 4 years after raising the capital, the landfill was complete. Due to various issues mostly relating to public finances, the development stalled. In 1979, the original plan was redesigned to incorporate a greater residential component. Construction began on the first building in 1980, followed by construction of the World Financial Center in 1981 by Olympia and York. By 1985, the World Financial Center was completed, and the first tenants moved in.

Throughout the 1980’s the Rector Place neighborhood and the River Esplanade were developed. In total, the 1980’s saw 13 buildings developed. In the early 1990’s, Stuyvesant High School was built, as well as 6 additional buildings. Since the turn of the century, an additional 13 buildings have been developed, including the ongoing construction of the new Goldman Sachs headquarters, which is adjacent to the World Financial Center.

From the initial excavation and landfill of the area, the project has been undergoing constant development for about 35 years. A total of 29 buildings both residential and commercial, but largely residential, have been completed since the 1980’s.

In 2000, the population of Battery Park City was slightly under 8,000. Currently, the population is about 10,000. The total number of residences in Battery Park is about 6,000. Most of the current residents are upper-middle class or upper class, with the majority of households earning in excess of \$100,000 in annual income. It is anticipated that over the next 10-20 years, the population will reach a maximum of about 14,000 as the remaining available areas are filled in and developed.

Other Factors

Due to the events surrounding 9/11, many residents chose to leave the area permanently. A number of buildings sustained damage due the neighborhood’s proximity to Ground Zero, and there continues to be significant health concerns about the area due to toxic dust resulting from the collapse of the World Trade Center towers.

As of 2009, most of the redevelopment has been completed. However, the redevelopment of Ground Zero will take at least 10 years and potentially much longer. As a result, it is expected that the general area will continue to experience redevelopment for at least the next 5 years, resulting in noise, construction and traffic problems.

In addition to building construction, the West side Highway adjacent to Battery Park continues to undergo a significant upgrade. This has resulted in heavy traffic, and many idling taxis and limousines in the residential areas, which results in regular complaints from the community board.³⁶

Overall, Battery Park City has successfully resulted in the development of an underutilized area, while adding much needed housing to the island of Manhattan. However, the process has taken a significant amount of time due to the natural pace and issues that result from large scale redevelopment, as well as unforeseen issues such as the tragedy of 9/11.

Metrotech

History

Metrotech center occupies about 10 city blocks in downtown Brooklyn. Originally one of the earliest areas settled in Brooklyn, the area's streets were once lined with homes, churches, factories, and shops. However, unlike Brooklyn Heights which was built with grand brick and stone structures, the downtown area was built with simple wood framing and other modest buildings.

In the mid 1970's, Brooklyn Borough President Howard Golden and Polytechnic University President George Bugliarello conceived of and advanced the idea for the Metrotech project. They wanted to create a research and innovation center on the Eastern Seaboard that could rival Silicon Valley. In 1979, a study was commissioned which determined that downtown Brooklyn could serve as a separate and viable commercial business district (CBD).³⁷

Urban Renewal

In the early 1980's the City's Public Development Corporation (PDC) agreed to designate Polytechnic University as the urban renewal sponsor for the Metrotech project. Polytechnic in turn chose Forest City Ratner as the principal master developer of the area.

In 1987, prior to construction, Forest City won two major tenants in the Brooklyn Union Gas Company and the Securities Industry Automation Corporation, a Wall Street firm.

After several delays, construction began in 1989 on the first office building. Between 1989 and 1992, three more buildings have opened in Metrotech, including Polytechnic's \$42 million library and research center in January and a 23-story tower that in February became the new headquarters for the Brooklyn Union Gas Company. The total size of the office space at Metrotech at the time was roughly 2.9 million square feet.

Over the next 15 years, large office buildings were developed in Metrotech. In late 2002, work began on 9 Metrotech South, a 670,000-square-foot building for 1,300 employees of Empire Blue Cross and Blue Shield, further expanding the workforce in Downtown Brooklyn. Before the events of 9/11³⁸, Forest City did not have an anchor tenant for the site. It was considered mainly as a back office location for Manhattan, but companies now saw it as viable alternative to place their entire offices in Brooklyn. This building was considered to be the last major building developed with the 16 acre Metrotech complex.

³⁶ http://www.nytimes.com/2007/10/21/realestate/21livi.html?_r=2&oref=slogin

³⁷ <http://www.metrotechbid.org/community.php?sub=story>

³⁸ <http://www.nytimes.com/2002/01/27/realestate/in-brooklyn-projects-plans-and-hopes.html?pagewanted=2>

The completion of 9 Metrotech was the last building in the Metrotech redevelopment area, reaching a total of about 5.3 million square feet. Having begun construction on the first office tower in 1989, the final building was completed in 2003, spanning a total of 15 years.

APPENDIX D: RENT COMPARABLES

Prospect Heights

Address	Description	Source	1-Bedroom	2-Bedroom
FRANKLIN at UNION ST	New Renovation	http://newyork.craigslist.org/brk/abo/1339511002.html	\$1395	
Classon and Franklin Ave	New	http://newyork.craigslist.org/brk/fee/1333085337.html	\$1600	
Classon Ave.& Lincoln Place	New	http://newyork.craigslist.org/brk/abo/1341721618.html		\$1950
St. John's Place between Washington Avenue and Underhill Avenue	New Renovation	http://newyork.craigslist.org/brk/fee/1303750728.html		\$2000

Boerum Hill

prime state street tree line block	Prime Location (Deck, Backyard)	http://newyork.craigslist.org/brk/abo/1341995969.html	\$2595	
Bergen St between Hoyt and Bond.		http://newyork.craigslist.org/brk/fee/1341615976.html	\$2200	
Boerum Place,	24-Hour Doorman Live-in Super On-Site Laundry Gym	http://newyork.craigslist.org/brk/fee/1341171748.html		\$3300
-	New Development in Sought-After Boerum Hi	http://newyork.craigslist.org/brk/abo/1341150049.html		\$3000

Cobble Hill

PRIME COBBLE HILL	Newly renovated 800+ sq/ft - 1BR	http://newyork.craigslist.org/brk/abo/1341713397.html	\$2500	
431 Hicks Street, Brooklyn, NY 1120	beautiful landmark building in the heart of Cobble Hill.	http://newyork.craigslist.org/brk/nfb/1341438280.html	\$1700	
PLAZA ST E VANDERBILT	NEWLY RENOVATED	http://newyork.craigslist.org/		\$3200

AVE & BUTLER ST	LARGE 3BR 1100 SQ FT LARGE NEW FULL BATHROOM	brk/abo/1342025672.html		
CHEEVER PLACE between: DEGRAW AND KANE	1100 Sqft approximately, Terrace, Dishwasher, Washer & Dryer in the apartment	http://newyork.craigslist.org/ brk/abo/1341648436.html		\$3500

Carroll Gardens

-	RENOVATED SPACE	http://newyork.craigslist.org/brk/fee /1342096256.html	\$2000	
only a few blocks from the best shopping and dining Brooklyn has to offer	Convertible 2 Bedroom DUPLEX!	http://newyork.craigslist.org/brk/fee /1341496332.html	\$1950	
-	Huge 2-Bed, Flooded With Light! DISHWASHER & WASHER/DR YER	http://newyork.craigslist.org/brk/fee /1342094179.html		\$2950
WOODHULL ST between: HICKS AND COLUMBIA	1200 Sqft approximatel y, Terrace, Dishwasher, Washer & Dryer in the apartment	http://newyork.craigslist.org/brk/ab o/1341587113.html		\$3150

Dumbo

http://newyork.craigslist. org/brk/nfb/1341899019. html	High End Condo LAUNDRY & GYM INCLUDED (DUMBO)	http://newyork.craigslist.org/b rk/nfb/1341899019.html	\$2800	
foot of the Manhattan Bridge right off of Flatbush Avenue	\$2500 / 1br - 1 BR 1.5 Bath with 2 balconies in LUXURY Building w/ Option to Buy (DUMBO/Downtown Brooklyn)	http://newyork.craigslist.org/b rk/abo/1341614751.html	\$2500	
-	TALLEST CONDO TOWER 2Bedroom 2bath 1260 SOFT High Floor	http://newyork.craigslist.org/b rk/abo/1341988427.html		\$4800
	2BR/1Bath,1200Sq,SSA pps,ALL NEW,W/D,Terrace, Roof Deck	http://newyork.craigslist.org/b rk/abo/1341587113.html		\$3150

APPENDIX E: AUTHORS' BIOGRAPHIES

Joshua Kahr

Joshua Kahr is the founder and principal of the company. He is a nationally recognized expert in real estate market analysis, finance, and investment. His primary responsibilities include managing the operations of the firm, business development, and overseeing projects.

Consulting Experience

Since he launched his consulting business in 2002, he has completed the following assignments:

- Constructed numerous financial models for a wide range of real estate investments including condominiums, rental apartments, office buildings, industrial parks, and shopping centers. The firm is now established as a "go to" firm for the audit and review of existing financial models. Examples include a \$200,000,000 three phase, mixed use transit oriented development in Salt Lake City and a \$1,000,000,000 project in Bethesda, Maryland.
- Developed leading workshops including "Advanced Pro-forma Modeling with Excel" and one for Argus, the dominant real estate financial package for real estate analysis. Outside of the manufacturer of Argus, we are the only company that provides regular courses nationwide. Clients include business schools (U. Chicago, Wharton, and Harvard), investment firms (Credit Suisse, Blackstone, and General Electric), industry organizations (Urban Land Institute), and conference organizers (Terrapinn Financial). He has personally delivered these seminars throughout the United States and in foreign location such as Tokyo, Dubai, London, Hong Kong, and Singapore.
- Ran over 30 two day seminars for United States Environmental Protection Agency and affiliated State agency employees on how government officials could better work with the private sector to help redevelop environmentally contaminated properties.
- Analyzed inequalities in the tax assessment system for New York City's commercial real estate. It concluded that properties were under-assessed by approximately 40% relative to the City's own published guidelines. This study received significant local press; it took up half a page on page 2 of the New York Post, New York City's largest circulation daily, on 12/3/2004.

Previous Work Experience

The last traditional job that he held before dedicating himself full time to his consulting business was as Director of Research at The Steven L. Newman Real Estate Institute at Baruch College. His key responsibilities were to originate and manage research projects that would further the mission of the Institute. He left this position in mid-2004.

After working on the "buy side" of the business, he applied his skills to the "sell side" as a Senior Director in the Real Estate Investment Banking division at GVA Williams. His work involved the identification of potential acquisition opportunities, the management of dispositions, and the supervision of transactions. While there, he sold 18 properties for a Fortune 100 client including 510 Fifth Avenue, New York, NY. This 62,000 SF office building deal was nominated for REBNY's "2000 Most Ingenious Deal of the Year Award"

Previously, he was a Senior Analyst at Brookhill Redevelopment. Brookhill Redevelopment was funded by Credit Suisse First Boston and specialized in the purchase and remediation of environmentally contaminated properties. He was responsible for the research, due diligence, and financial modeling of potential acquisitions. The company was formerly known as Dames & Moore/Brookhill.

His career in institutional real estate began at SL Green Realty Trust, a real estate investment trust that owns and manages Class B office buildings in New York City. As an Analyst, he conducted financial analysis in support of their acquisition efforts and assisted in the preparation of documents for their initial public offering.

Academic Experience:

He is on the faculty at Columbia University as an adjunct associate professor and New York University as an adjunct assistant professor. He currently teaches the year long real estate finance course in Columbia's MS in Real Estate program to all of the approximately 100 students. He has taught other real estate subjects including real estate market analysis.

Publications:

In addition to articles that have appeared in academic and business journals, he is the author of the textbook, Real Estate Market Valuation and Analysis (John Wiley and Sons: 2005). He also wrote a book on the state of the housing market, Beyond the Bubble (Amacom Books: 2007) and is currently at work on a third book on real estate modeling using Excel. He has been widely quoted on real estate finance, investment, and development in such national periodicals as The New York Times, The Wall Street Journal, and The Christian Science Monitor.

Education and Affiliations:

He has a Master of Science in Real Estate from New York University and a Bachelor of Arts in Economics from Reed College. He is on the Board of Directors for Monmouth Real Estate Investment Corporation (Nasdaq: MNRTA), a publicly traded Real Estate Investment Trust. He is licensed as a Real Estate Broker and Real Estate Instructor in the State of New York.

Jonathan Feifer

Jonathan Feifer joined Kahr Real Estate Services in the summer of 2006. In his capacity as Vice President, Mr. Feifer is responsible for business development, and in the execution of Kahr's three main business platforms; expanding Kahr's real estate acquisition arm through the sourcing of real estate deals and the expansion of Kahr's equity base, serving as feasibility advisor for medium to large scale acquisition and development projects both domestically and internationally, and thirdly, in providing training on real estate feasibility through Kahr's real estate training arm.

Completed projects include the advisory on the purchase of a \$250M mixed use portfolio of buildings in Manhattan, a financial feasibility study for a \$10 Billion multi phase development in Dubai, a \$50 Million resort redevelopment in Jackson Hole, Wyoming, and serving as a the financial feasibility arm of an acquisitions company based in South Carolina for the acquisition of grocery anchored retail centers in the South East US.

Mr. Feifer is currently in the final stages of editing a book he coauthored with Josh Kahr on Excel Modeling in for the real estate industry. This book is slated to be released in the first quarter of 2010.

Mr. Feifer holds a B.A. from McGill University in Montreal, Quebec, and an Msc from NYU in real estate finance and investments.