

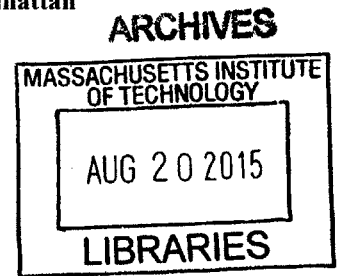
Finance of the Fallow Firmament: Valuing Air Rights in Contemporary Manhattan

by

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B.A., Archaeology, 2001

Cornell University



**Submitted to the Program in Real Estate Development in Conjunction with the Center for Real Estate in
Partial Fulfillment of the Requirements for the Degree of Master of Science in Real Estate Development**

at the

Massachusetts Institute of Technology

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ABSTRACT

Two tall residential towers in midtown Manhattan were under construction in 2014, prominently setting records for both height and for the early sale prices of their condominium units. These are to be followed in the next several years by at least five more such luxury skyscrapers in the same district. This phenomenon has renewed public interest in the use of air rights in New York City. Despite widespread media attention and studies by community groups, examination of transferrable development rights usage in New York has not included the application of rigorous financial analysis.

This paper first provides a comprehensive account of the history of various forms of air rights in New York City, particularly chronicling how such air rights have developed and changed over time to the present day.

Following on this understanding, and using these two recently-constructed residential towers as examples, this paper provides detailed narratives describing how these projects assembled their development rights, and how this spatial envelope was used. The paper concludes with a canonical comparison of the acquisition prices of these development rights with their final sales prices and a regression of the price on floor height and size.

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A heartfelt expression of gratitude is also due to Dr. Andrea Chegut, whose enthusiasm for student work in general and for exploring the frontiers of real estate financial and economic research has been a significant source of energy and assistance throughout the program, and I deeply appreciate Dr. Chegut's support in this project.

Lastly, this paper is dedicated to my husband, John Sheehy, who patiently waited through numerous sunny days and warm nights of a beautiful New England June and July, waiting for me to finish this work. I owe everything to your kindness, caring, attention and love.

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Acronyms

CPC	City Planning Commission
EDR	Excess Development Rights
EMS	East Midtown Subdistrict
FAR	Floor Area Ratio
LPC	New York Landmarks Preservation Commission
LPL	Landmarks Preservation Law
MACNY	Municipal Art Society of New York
SSSS	South Street Seaport Subdistrict
SWCS	Special West Chelsea Subdistrict
TDR	Transferable Development Rights
ULURP	Uniform Land Use Review Procedure
ZLM	Zoning Lot Merger
ZR	City of New York Zoning Resolution

Definitions

Air Rights: In general, legal, and regulatory usage, and for the purposes of this paper, “Air Rights” refers to any and all spatial Development Rights available from one property or group of properties, or granted via civic authority through a bonus scheme, acquired from such properties and through such schemes, whether a Zoning Lot Merger, Landmark Transfer, or City-Regulated Bonus Incentive Scheme.

District Improvement Bonus/District Improvement Fund: A regulatory practice in which contributions from private parties, such as real estate developers, to a city-controlled fund is rewarded with an additional allowance of FAR.

District Zoning: A Regulatory Procedure in which a particular district or neighborhood is granted specific zoning rights, privileges, or mechanisms, particularly an expanded or relaxed allowance for the transfer of development rights within a particular zone.

Downzoning: A change in zoning laws governing a particular property, neighborhood, or district, in which the amount of permitted building height, bulk or floor area is decreased. This normally results in existing buildings which exceed the new zoning to be grandfathered in, but would affect any unused development rights, including property TDRs.

Excess Development Rights: A technical term often employed in Zoning Lot Development Agreements, which refers to unused FAR from a particular lot or merged group of lots which is available to be employed in a new development. The term is usually interchangeable with the common understanding of the term “air rights.”

Floor-Area Ratio (FAR): A term often used the maximum allowable building permitted by zoning, FAR measures the total sum all of a building’s floors to the size of the building’s zoning lot. See Illustration 1.1.

FAR Bonus: Any amount of FAR which is granted to a particular property or development by a city agency above the normal base amount permitted by zoning, normally in exchange for the provision of a public plaza (Plaza Bonus) or arcade, for the provision of affordable housing (See Appendix D), for a contribution to a District Improvement Fund (see above).

Floating Rights: A term commonly employed to characterize the freer movement of TDRs throughout a wider area and/or larger pool of receiving sites through the designation of a subdistrict.

Inclusionary Housing: The New York City program for encouraging and regulating the private development of affordable housing. See Appendix D.

Landmark Preservation Law: A 1961 City Ordinance that grants authority to a Landmarks Preservation Commission to designate buildings and neighborhoods of architectural or historical merit, and which thereafter mandates that the owner of such landmarks maintain the building's exterior in good repair.

Purchasable Development Rights: This term of art generally characterizes FAR Bonus schemes that the City of New York has instituted and/or proposed, in which additional development rights are available to private real estate developers in exchange for monetary contributions to civic programs and accounts (See District Improvement Bonus, above).

Receiving Zone: A specific area within a Zoning District that is specifically designated to transmit bulk or density, as a source of FAR transfers.

Sending Zone: A specific area within a Zoning District that is specifically designated to accept increased bulk or density as the destination for FAR transfers.

Supertall: A term first coined in the 1990s to specifically refer to skyscrapers over a height of 300 or 380 meters, as technological advances made such heights increasingly structurally, mechanically, and financially feasible for development.

Transferable Development Rights: The ability of one property to give, grant or trade away any spatial rights with another property, whether through easement or outright transfer.

ULURP: A public review process mandated by the City Charter, for all proposed zoning map amendments, special permits and other actions such as site selections and acquisitions for city capital projects and disposition of city property.

Upzoning: A change in zoning laws governing a particular property, neighborhood, or district, in which the amount of permitted building height, bulk and/or floor area is increased.

View Corridor: An architectural-aesthetic term, generally referring to the restriction of bulk or height in order to preserve public vantage angles of famous buildings or landmarks.

Zoning Lot Merger: The practice by which individual property owners on the same block agree to come together into a single, unified lot under zoning regulations. Normally undertaken by a developer to assemble EDRs on a particular block to realize a new development. See Illustration 2.2.

1. Introduction: The Changing Landscape of Manhattan



In late August 2014, the Empire State Building ceased to be the tallest building in midtown Manhattan for the first time since its steel frame was topped out in March of 1931, in the depths of the Great Depression. Eighty-three years later and twenty-three blocks to the northeast, at the corner of Park Avenue and 57th Street, the concrete poured atop 432 Park Avenue settled into its formwork at a height of 1,280 feet, with more than 100 feet to go before topping out at 1,391 feet.¹

The newly paramount 432 Park Avenue also became the tallest residential building in all of New York City. This title had changed more frequently: 432 Park took the distinction from a newly-completed skyscraper located just four blocks to the

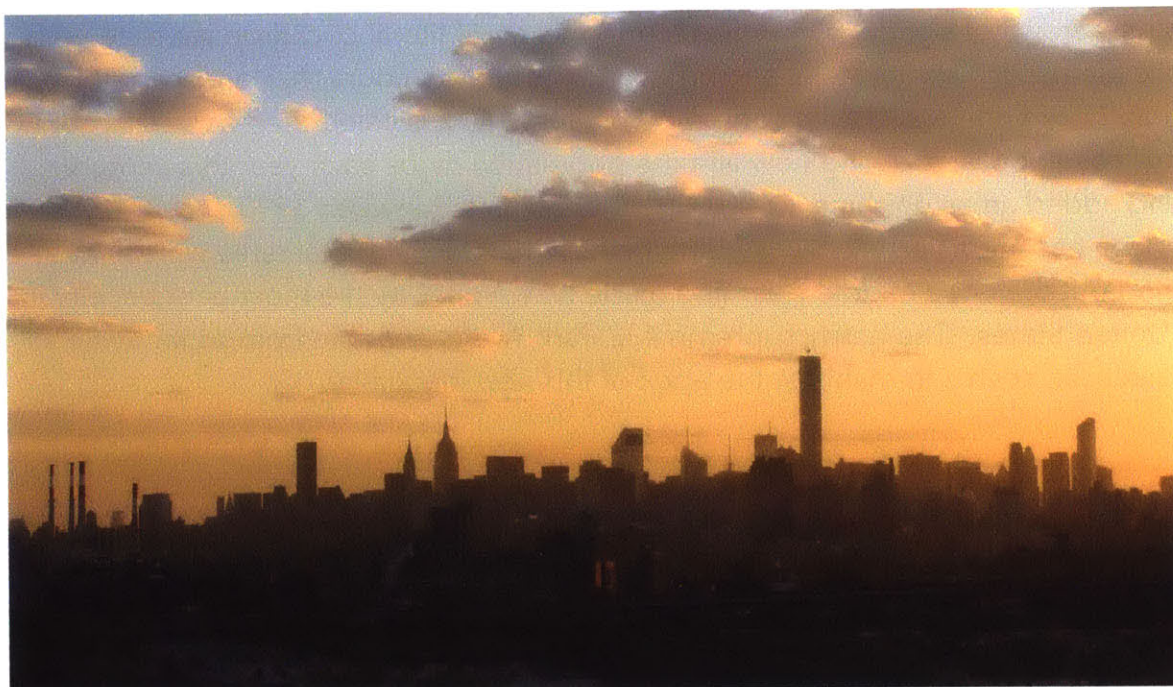
west, on 57th Street between 6th and 7th Avenues. The tower at 157 W. 57th Street, marketed as ONE57, had itself only gained the title that same year, representing the first in a new generation of prominent, “supertall”² luxury condominium towers to rise in the heart of Manhattan since the turn of the century.

Despite losing out in the race for height, ONE57 would make even bigger headlines in December 2014, when its top-level condominium, a 10,923 square foot penthouse laid out over the 71st and 72nd floors, sold for a record-breaking \$100.47 million: the most

Illustration 1.1: 432 Park Avenue under construction, as seen from street level on 56th Street, October 2014. ©Matthew M. Jones.

¹ Fedek, Nick, “432 Park Now Midtown’s Tallest Building,” *New York YIMBY*, August 27, 2014, <http://newyorkyimby.com/2014/08/432-park-avenue-now-midtowns-tallest-building.html>, accessed July 29, 2015.

² See Definitions. The term “supertall” came about in the 1990s to specifically classify skyscrapers over a height of 300 or 380 meters. Similar definitions offered by the Council on Tall Buildings and Urban Habitat (CTBUH): <http://www.ctbuh.org/HighRiseInfo/TallestDatabase/Criteria/tabid/446/language/en-GB/Default.aspx> or by the Skyscraper Museum in New York: http://skyscraper.org/EXHIBITIONS/SUPERTALL/defining_supertall.php



expensive condominium ever sold in New York City, and the first condominium sales price to ever cross the nine-figure mark.³

ONE57 and 432 Park Avenue are just the first two completed projects of at least seven prominent, skyline-altering luxury condominium towers that are in various stages of development across midtown Manhattan. Clustered across the southern edge of Central Park, mostly along 57th Street and mostly rising above the symbolic threshold of 1,000 feet in height, they have been pejoratively nicknamed “Billionaires’ Row” in reference to astronomical prices of their residential sales.⁴

Illustration 1.2: The silhouette of the midtown Manhattan skyline viewed from Queens, April 2015. 432 Park Avenue is the tallest building in the photo. ONE57 is the tallest building between 432 Park Avenue and the right-hand side of the photo. The tops of the Empire State Building, Chrysler Building, and Trump World Tower can be seen at left. ©Matthew M. Jones.

³ Willet, Megan, “Inside One57, Where New York’s Most Expensive Penthouse Just Sold For A Record-Breaking \$100 Million,” *Business Insider*, January 20, 2015, <http://www.businessinsider.com/inside-one57s-100-million-penthouse-2015-1>, accessed July 29, 2015. For public record of the transaction see CRFN 2015000020810 at the New York City Department of Finance, Office of the City Register online database: a836-acris.nyc.gov

⁴ For an early example of this term used in reporting of the development of residential buildings in midtown, see Barbanel, Josh, “New Tower to Join ‘Billionaires Row’,” *The Wall Street Journal*, March 24, 2014, <http://www.wsj.com/articles/SB10001424052702303725404579459791911579648>, accessed July 29, 2015.

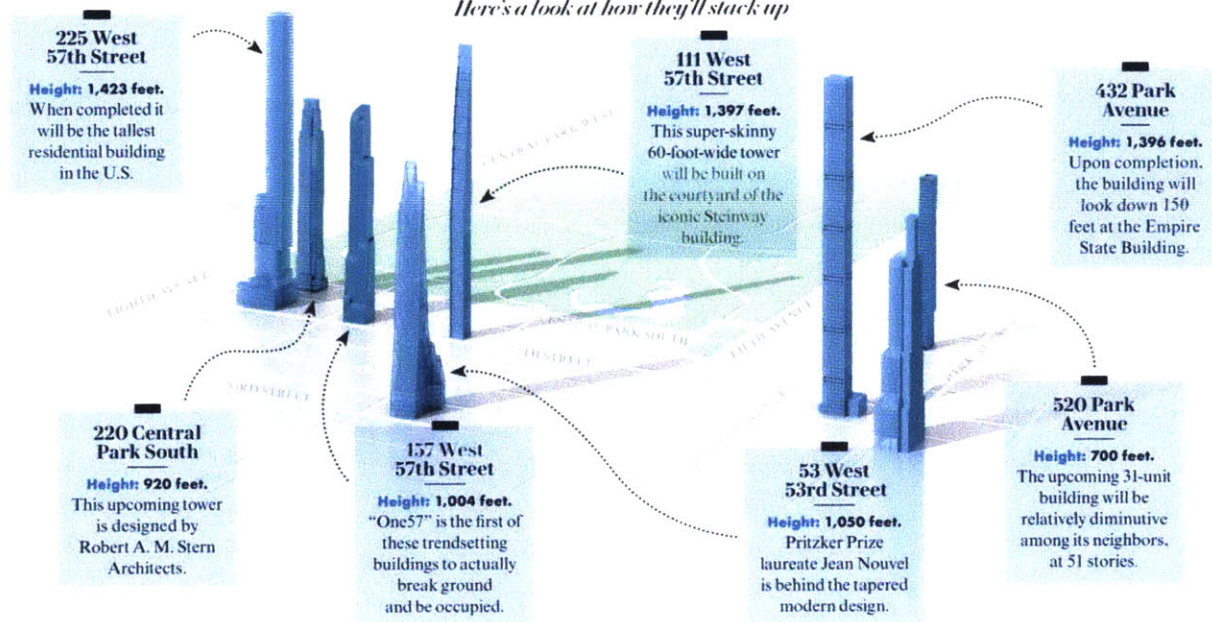
This new crown of slender spikes has formed a sort of literal backdrop for renewed public discussion, about the changing economic and demographic landscape of 21st century New York City. While contemporary New York is celebrated as a resurgent, global cosmopolis, reaching new all-time population highs each year this century, having added an astonishing 1,000,000 new residents between 1990 and 2010,⁵ this has been accompanied by new all-time highs in residential rental rates which have pushed out the city's middle class and made New York City the most unequal city in the United States.⁶ The newly supreme 432 Park Avenue, visible from as far away as Connecticut, seems to manifest the apex of this new inequality.

⁵ New York City Global Partners, "Best Practice: Zoning Bonus to Promote Affordable Housing," May 27, 2011 Global Partners Innovation Exchange, available at: http://www.nyc.gov/html/ia/gprb/downloads/pdf/NYC_Planning_InclusionaryZoning.pdf, accessed July 29, 2015.

⁶ Roberts, Sam, "Gap Between Manhattan's Rich and Poor is Greatest in U.S., Census Finds," *The New York Times*, September 18, 2014: "The mean income of the top 5 percent of households in Manhattan soared 9 percent in 2013 over 2012, giving Manhattan the biggest dollar income gap of any county in the country, according to data from the Census Bureau. The top 5 percent of households earned \$864,394, or 88 times as much as the poorest 20 percent, according to the Census Bureau's American Community Survey, which is being released Thursday and covers the final year of the Bloomberg administration." <http://www.nytimes.com/2014/09/18/nyregion/gap-between-manhattans-rich-and-poor-is-greatest-in-us-census-finds.html>, accessed July 29, 2015.

RACE TO THE TOP

*Upon completion, the superscrapers will transform Midtown Manhattan.
Here's a look at how they'll stack up*



The visual and financial prominence of the new Billionaires Row has thus also fostered new wave of media interest and public debate about the civic rules and regulations that permit such radical physical transformation. Newspaper editorials and publications from civic groups have called for greater public input and oversight of the mechanisms by which real estate practitioners increase the allowable size of their proposed building, particularly the various means to acquire "air rights"⁷ from other properties to increase a development's bulk. A recent study calculated that more than a third of all building erected below Central Park from 2007-2012 employed such air rights,⁸ while public sentiment ranges from outrage at the desecration of the current cityscape⁹ to wariness of the political forces that control the city's physical alteration.¹⁰

Illustration: The collection of luxury condominium projects known as Billionaire's Row, visualized as part of a *Vanity Fair* essay on the phenomenon by Paul Goldberger, May 2014. Full article available at: <http://www.vanityfair.com/unchanged/2014/05/condo-towers-architecture-new-york-city> Image ©Condé Nast.

⁷ See Definitions.

⁸ The Furman Center for Real Estate and Urban Policy, New York University, *Buying Sky: The Market for Transferable Development Rights in New York City*, October 21, 2013, p.2.

⁹ For example, Kimmelman, Michael, "Seeing a Need for Oversight of New York's Lordly Towers," *The New York Times*, December 22, 2013.

¹⁰ See the Municipal Art Society of New York, "The Accidental Skyline," December 2013, for a critical analysis of the aesthetic impact of Billionaires Row, available at: <https://www.scribd.com/doc/193282206/Accidental-Skyline>, accessed July 29, 2015.



While these various studies have amalgamated and analyzed the transactional data of recent air rights trades,¹¹ there has yet to be any attempt to comparatively analyze this public record to form an understanding of how developers acquire, use, and realize the gains from air rights.

This paper performs such an analysis in its final section, illustrating how both ONE57 and 432 Park Avenue came to be realized through strategic, long-term assemblies of buildings and air rights on their respective blocks, and juxtaposing the costs incurred for these spatial parcels with the premium condominium prices these same spatial parcels commanded in this finished development by employing the canonical rate of return formula.

Illustration 1.4: The crenulation of Midtown skyscrapers seen from the southernmost portion of Central Park, October 2014. ONE57 is at far right, while 432 Park Avenue is seen in the distance in the left background.

¹¹ Most notably the Furman Center for Real Estate and Urban Policy at New York University, which has compiled GIS data related to development rights transfers at <http://furmancenter.org/data>

This provides a more precise measurement of the impact of air rights on the development of supertall buildings by estimating the individual and aggregate added values of the air rights parcels over and above the development parcel's original, allowable building envelope.

To provide a factual basis for that analysis, this paper will first provide a brief but comprehensive background on the evolution of various forms air rights as a concept in New York's civic zoning regulations and an aspect of transactions between property owners—how air rights behave as a form of real property in law and private contracts.

This history will also survey many of the contemporary issues and forthcoming civic proposals regarding the issuance, trade, and employment of these various types of air rights, both as a spatial tool of the real estate developer and a planning tool of city government, including the recent and increasing use of air rights as revenue source for the private real estate market to support infrastructural improvements, maintenance of public goods and affordable housing.

As the city seeks to maintain Manhattan's position as one the world's foremost financial capitals, and also permit the landmarks it designates to enjoy the concessions that it granted to mitigate their preservation burden, this civic purpose of development rights has itself been transforming over the decades.¹² Although the city has repeatedly expanded and in many ways relaxed the rules regarding the use of air rights in the 99 years since the first zoning code was published in 1916, the propositions most recently put forth by the city government represent another paradigm shift not only in regulating the market for air rights, but also the increasing participation of the city itself as a market actor in the trade of development rights.

Mechanisms granting real estate practitioners additional development rights are increasingly designed not as facilities to transfer air rights between private parties, but as funding platform for various public goods, from affordable housing to public transport. This shift risks subverting the original or previous *raison d'être* for air rights, particularly with regards to landmark properties. What was once created by regulation to ameliorate restrictions on a property owner's development rights instead competes for municipal exactions from real estate projects—a transfer of a different kind. This practice of creating new development rights to be auctioned off—the “minting” or

¹² See Marcus, Norman. “Air Rights In New York City: TDR, Zoning Lot Merger and the Well-Considered Plan.” *Brooklyn Law Review* 50, no. 4, 1984.

“coining” of TDRs¹³ —can conveniently relax the constraints of fiscal discipline of that tax-generated capital budgets traditionally require.

Burgeoning Manhattan seems destined to fill out its allowable building envelope, with a market driven by unprecedented forces manifest in rapid and significant changes in the cityscape, at the same time that the city’s government struggles to provide adequate transportation infrastructure and affordable housing.

The city’s real estate industry constantly lobbies for ever-greater spatial permission at the ability to invent new air rights to bid out tempts a municipality eager to fill budgetary gaps. New York City thus appears on the threshold of a new era in the use of air rights, not only as a mechanism to control the physical development of the city, but increasingly as a civic funding instrument.¹⁴

Undermining public debates about air rights, and inhibiting efforts to institute a fairer, more transparent, and more equitable regulation and use of transferrable development rights is a more comprehensive understanding of their economic value. Only recently have studies sought to analyze transactions for various forms of air rights,¹⁵ and these endeavors have been stymied by a lack of transparency regarding development rights transactions.¹⁶

While the city has commissioned professional appraisals¹⁷ to estimate an appropriate price for air rights, this paper will be first to apply canonical financial analysis to air rights pricing in recorded transactions as a means to better understand the value of air rights in New York City.

¹³ An expression coined by Judith Welch Wegner in “Utopian Visions: Cooperation Without Conflicts in Public/Private Ventures,” *City Deal Making* 57, 68 (Terry Jill Lasser, ed.) 1990.

¹⁴ Been, Vicki and Infranca, John, “Development Rights Programs: ‘Post Zoning?’” New York University School of Law, *Public Law & Legal Theory Research Paper Series*, Working Paper No. 12-50, December 1, 2012, p.439: “TDR programs have shifted toward using TDRs as a tool to channel development in the service of the city’s goals, rather than as a flexibility device for property owners.”

¹⁵ The Furman Center’s *Buying Sky* report refers to itself as the first such comprehensive analysis of TDRs.

¹⁶ *Ibid.*, p15.

¹⁷ The New York City Economic Development Corporation commissioned the firm Landauer Valuation and Advisory to produce a market study and appraisal report to establish a price for the District Improvement Bonus for the proposed East Midtown Rezoning, issued on September 23, 2013 as available at: http://www.nyc.gov/html/dcp/pdf/east_midtown/residential_dib_appraisal_report.pdf?635152225538900000, accessed July 29, 2015.

2. A Brief History of Air Rights Zoning in Manhattan

A. The Origins of Air Rights and the Invention of the Zoning Lot Merger

New York City has one of the oldest-existing regulatory frameworks governing the spatial scope and appearance of its built environment, having adopted the Zoning Resolution in 1916. Interestingly, this code did not specifically contemplate or set forth the transfer of development rights from one parcel to another.¹⁸ Yet, through property owners' creative interpretation of these regulations, transfers of air rights were made among adjacent properties by private agreement among the owners, thus allowing new developments to grow in volume while technically remaining within the Zoning Resolution rules of height, set-back, and total lot area occupancy.¹⁹ These innovative arrangements came to be formalized as the Zoning Lot Merger (ZLM). Such assemblies were not disallowed by the city, yet the Zoning Resolution did not explicitly incorporate ZLMs until 1961.²⁰

Many properties in Manhattan were built well within the limits permitted by the city's zoning code, an envelope that since 1940 has been measured by Floor Area Ratio (FAR)²¹—normally a figure by which the area of the ground lot can be multiplied to designate the maximum allowable square footage of a building on the site. ZLMs allow the transfer of unused FAR, (commonly referred to as transfer development rights, "TDRs," and also contractually defined as excess development rights, "EDRs") from one or more under-built properties to a development site within the same city block, thus allowing the development site to overcome its own original limits of buildable square footage.

Fundamentally, ZLMs inventively distinguish between each individually-owned property, designated by regulation as a Tax Lot, and the combination of one or more such properties into a single Zoning Lot strictly for the purposes of treatment of zoning specifications (see Illustrations 2.1 and 2.2 for a diagrammatic explanation).²²

¹⁸ Marcus, Norman, 1984, section I.B.

¹⁹ Ibid.

²⁰ Ibid. See also New York City Zoning Resolution ZR§12-20, subsection (d).

²¹ See Definitions and Diagram 1.

²² Aside from the visual and verbal explanations provided in herein, many of publications referenced throughout this paper offer detailed verbal and visual explanations of the ZLM concept and practice, especially McStotts, Jennifer C., *A Preservationist's Guide to Urban Transferable Development Rights*, published by the National Trust for Historic Preservation.

Illustration 2.1 A Visual Explanation of Floor Area Ratio (FAR) How FAR Zoning governs building size, bulk, and height

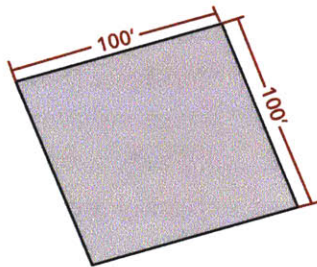


Fig 1: The size of a Tax Lot is simply the lot's gross area measured from its property limits

Lot Coverage = 100%
Floors = 5
FAR = 5

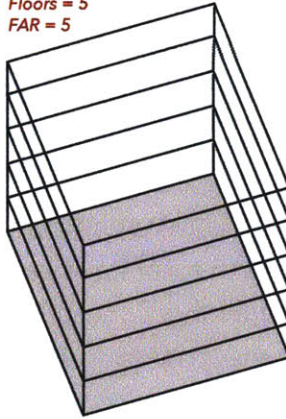


Fig 2: The Floor-Area Ratio is the total amount of floor space which zoning permits on a site as a multiple of the lot size

Floors = 7
FAR = 5

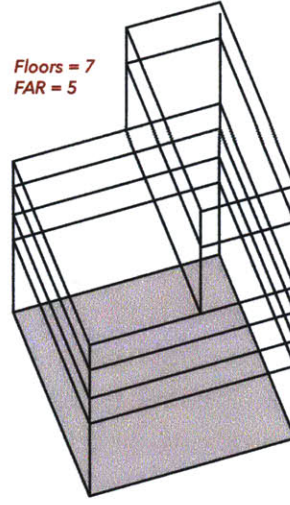


Fig 3: As long as the building stays within any overall height limit and other setback required by zoning regulations the FAR can be used without regards to height.

Lot Coverage = 50%
Floors = 10
FAR = 5

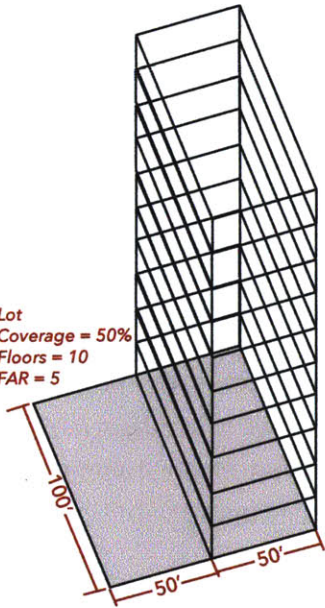


Fig 4: As long as the building follows any height, setback, and/or minimal lot coverage area or footprint requirements, the allowable FAR can be expended across a greater number of floors, in order to rise higher

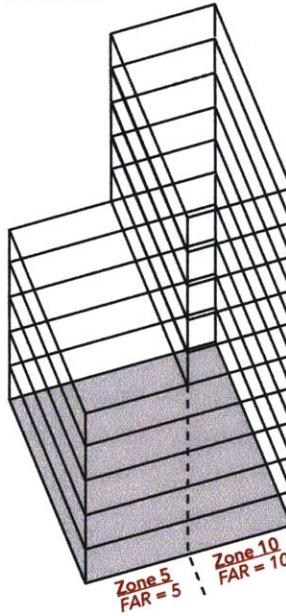


Fig 5: If a tax lot lies within more than one zoning area, each portion of the property must follow the zoning regulations of each zone within which it lies.

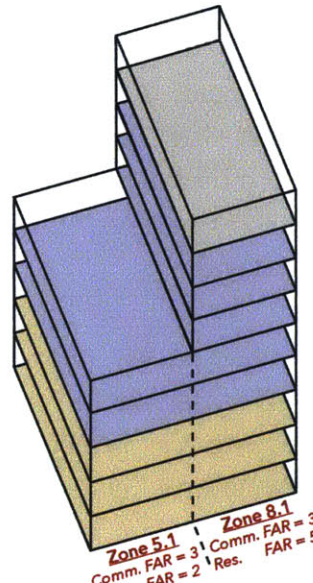


Fig 6: Regulations for various zones often specify different FAR allowances for different types of use, such as Commercial or Residential. Also, in New York City, Mechanical Levels do not count against FAR.

Through a ZLM, separate properties—which perhaps have the same owner but quite commonly are owned by unrelated parties—agree to unify so that the sum of their EDR can be employed by the development site.²³ ZLMs do not necessarily involve the outright acquisition of any other adjacent parcel in the block by the developer, but merely an agreement or set of agreements between the owners of the participating properties for the transfer of FAR. These agreements have been regularized in standard Zoning Lot Development Agreements (ZLDA or “Zelda”),²⁴ with other understandings memorialized in a Declaration of Restrictions that sets forth any easements or other transactional details.²⁵

Participating properties must not only be within the same block, but joined in a contiguous chain connected by at least 10 feet of shared property lines.²⁶ This can give substantial leverage to intervening or “linkage” lots, which may themselves not be contributing any unused FAR to the assemblage, but merely acting as intermediaries to unify properties into a single zoning lot over which FAR can shift.²⁷ Indeed, some lots with older buildings may be historically overbuilt, with their structures containing more FAR than is permitted by presented zoning, and thus subtract available FAR from the merged Zoning Lot but allow access to larger parcels of EDRs from other tax lots on the block. Such is the case with several of the tax lots which joined in to the ZLM which brought about ONE57.

As any EDRs acquired by one parcel are merely a subtraction of the development rights of another parcel on the same block, the overall allowable bulk of that particular city block remains unchanged, and all the properties in the ZLM must fall within zoning districts permitting the same uses and with the same maximum FAR designation, and otherwise follow all other zoning regulations.²⁸

²³ As will be seen in the analysis of the ONE57 and 432 Park ZLMs in the final sections of this paper, multiple tax lots themselves can be merged by a common owner into a single tax lot.

²⁴ The ZLDAs which register the Zoning Lot Mergers for ONE57 and 432 Park Avenue are discussed in the Section 3 of this paper, and recorded as CRFN 20100000331260 and 2011000394772, respectively, at the New York City Department of Finance, Office of the City Register online database: a836-acris.nyc.gov

²⁵ A detailed description and professional legal opinion on the proper execution of ZLDAs, Declarations of Restrictions, and Easements of Light and Air, see Israel, Marc and Harris, Caroline G., “Higher and Higher: Acquiring Development Rights Through Zoning Lot Mergers...” *New York Law Journal*, January 16, 2007.

²⁶ N.Y.C. Zoning Resolution ZR§12-10 (1961).

²⁷ *Ibid.*, see also Been and Infranca, “Post-Zoning,” 2012, p.442-3.

²⁸ Been and Infranca, “Post-Zoning,” 2012. p. 446.

Illustration 2.2 A Visual Explanation of the Zoning Lot Merger (ZLM)
 How Development Rights are transferred as-of-right
 between neighboring properties on the same block

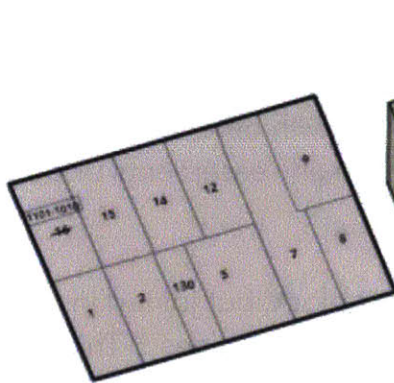


Fig 1: City Blocks are divided into Tax Lots. While Tax Lots can have multiple owners, or the same entity can own multiple lots, each parcel is tracked as a separate property for city records. Tax Lots can be created by the division of an original lot, called apportionment, such as is the commonly the case with properties that become condominiums (Lot 16 becomes Lots 1101-1010 in the example above). A single owner of multiple properties can also merge Tax Lots, extinguishing one or more lot numbers.

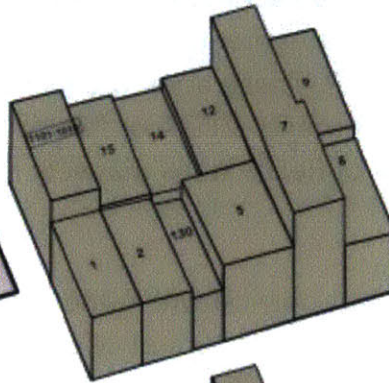


Fig 2. In almost all cases, each Tax Lots consists of a single property, and one property exists only on one Tax Lot. In the absence of any Zoning Lot Mergers on the block, each property also constitutes its own Zoning Lot.

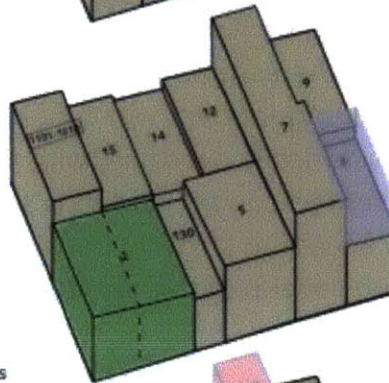


Fig 3. When a developer acquires multiple properties, their Tax Lots can be merged so that a single new development can be built on the parcel (green). This newly-unified parcel also constitutes its own Zoning Lot. If the developer identifies a Lot on the same Block which is underbuilt—that is built below its allowable FAR limit—the developer can enter an agreement with the owner of that property to acquire these Excess Development Rights.

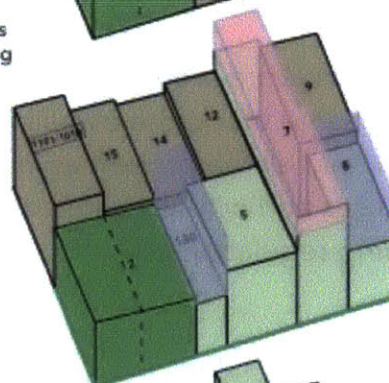


Fig 4. In order to transfer these EDRs from the underbuilt property, the Developer's and the EDR owner's Tax Lots must merge into a single Zoning Lot, and can only do so if all intervening lots also join in this Zoning Lot Merger, so that there is a contiguous Zoning Lot (light green). If any of the intervening properties are overbuilt—using more FAR than current zoning allows—this FAR overage must be subtracted from the total pool of EDRs available for the new development (pink). Tax Lots in the ZLM may or may not possess, or agree to transfer, their own EDR to the new development as part of the ZLM.

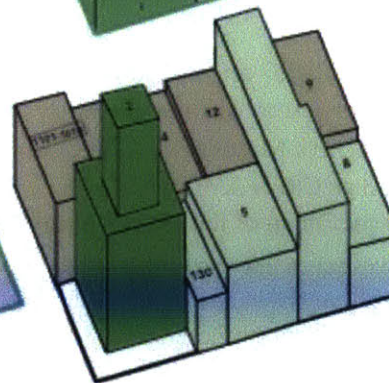
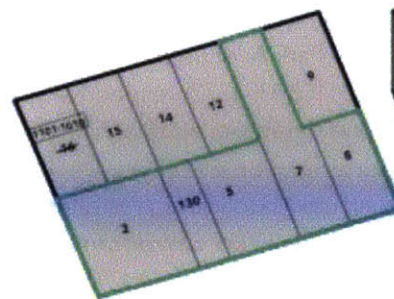


Fig. 5 Once the developer has assembled whatever properties which possess, or provide access to, available EDRs into a single Zoning Lot Merger (light green), All unused FAR of the entire ZLM can be transferred to the lot that the developer controls, for the construction of a new building. As long as the development meets existing zoning regulations, no city approval is required.

In theory, the outer limit of a ZLM is the total building envelope of the entire block. While block dimensions vary even within midtown Manhattan's semi-regular orthogonal grid, the average dimension are approximately 201 feet to 265 feet by between 750 and 920 feet, for a total block area of somewhere between 150,000 and 243,800 square feet.²⁹ The Empire State Building is among the earliest and most prominent examples of a single structure absorbing the entire buildable potential of a city block,³⁰ although other large towers have subsequently come close.³¹

Critically, ZLMs are allowed as-of-right: although the ZLDA must be submitted for public record, and the transfer of air rights between parcels is only permitted if the merging of lots is conducted under zoning regulations, the process is not subject to governmental approval and the arrangements between the lots and combination of FAR are private transactions.³² This lack of a civic review or permitting avoids the expense of time and resources and the uncertainty that real estate developers typically regard civic permitting processes.³³

Despite their light regulation, the assembly of multiple parcels into a single zoning lot is often lengthy and complex, as both ONE57 and 432 Park fully demonstrate.³⁴ As available sources of FAR are limited to those properties within the same block built beneath their allowable limits, the developer needs to successfully execute a transaction with each property owner, as well as any intervening properties required to connect the lots into a single, unified ZLM.

In practice, worthwhile opportunities are limited to potential assemblages of available EDR located on the same city block as a suitable redevelopment site which can be successfully unified through multiple bilateral or collective agreements into a single zoning lot. The market for air rights through ZLMs is therefore bound by many of the same the real estate market forces which restrain fee simple (ground) development sites.

²⁹ John Tauranac. *Manhattan Block by Block: A Street Atlas* (New York: Tauranac Maps, 2008).

³⁰ Marcus 1984, Section I.A.

³¹ The Empire State Building has a floor area of approximately 2.3 million square feet, which its Lot Area (approximately 190,000 square feet) multiplied by the allowable FAR (12) at the time of its construction.

³² Augspach, Francisco, "Development Rights Purchases by Zoning Lot Merger in New York City." *New York Real Property Law Journal*, Vol. 37, No. 3, Summer 2009, p.24.

³³ Boffard, Brandon Keith, "Transferable Development Rights in New York City," Seton Hall University, *Law School Student Scholarship*, Paper 413, May 1, 2014, pp.11-12. Available at: http://scholarship.shu.edu/student_scholarship/413, accessed July 29, 2015.

³⁴ See Tables 3.1 and 3.2.

ZLMs are by far the most frequent transfer of additional development rights.³⁵ In granting property owners broad flexibility in trading buildable area directly with their neighbors without discretionary review, yet remaining within the original density limits mandated by the city, ZLMs are considered the most equitable of all the forms of air rights—for both developers and the public—that New York’s various regulatory mechanisms allow.³⁶

Nonetheless, in the last decade there have been prominent calls for greater regulatory oversight and public review of air rights assemblages that currently take place by right.³⁷ Particularly, civic groups and newspaper editorials have published criticism of the new supertall condominium towers and called for greater control over these maximal amalgamations.

In previous real estate cycles, reaction to specific new buildings have generated nearly-identical protestations, from Ada Louise Huxtable’s legendary excoriations of the Pan Am Building in the 1960s³⁸ to the denunciations of the Trump World Tower in the 1990s, a development which successfully absorbed a wide congregation of adjacent air rights only to stack this FAR into an 895-foot tower occupying only 13% of the total lot area.

The negative public reaction to the Trump World Tower was so pronounced that it engendered specific regulatory action, curtailing the packing of FAR by setting minimum lot-coverage area, known as “footprint controls.”³⁹ While concentrating the

³⁵ Been and Infranca, “Post-Zoning,” 2012, p.440.

³⁶ Marcus, 1984, Section IV. See also Mills, David. E, “Transferrable Development Rights Markets,” January 12, 1978, *Journal of Urban Economics* 7, 63-74 (Charlottesville: University of Virginia, Department of Economics, 1980), p.65.

³⁷ In an editorial titled “*Seeing a Need for Oversight of New York’s Lordly Towers*,” published on December 22, 2013, the *New York Times* architecture critic Michael Kimmelman stated, “the city should put a limit on air rights that can be merged without public review. Exceptional height should be earned, not just bought. Let community groups and city agencies weigh in.”

³⁸ For a full index of Ada Louise Huxtable’s *New York Times* columns on the various plans to use the air rights above Grand Central Station, as well as discussion of the impact of her architectural criticism of various development projects in midtown, see Clausen, Meredith L.: *The Pan Am Building and the Shattering of the Modernist Dream* (Cambridge, MA: MIT Press, 2005).

³⁹ N.Y.C. Zoning Resolution ZR§12-10 (2012) requires a development occupy a certain percentage of the merged zoning lot. See also Dunlap, David W., “A Complex Plan’s Aim: Simpler Zoning Rules,” *New York Times*, January 30, 2000: “Intended to curtail the transfer of development rights, [the ‘packing the bulk’] rule is despised by developers.” And also Dunlap, David W., “Battle Lines Drawn on New Zoning Plan,” *New York Times*, June 4, 2000: “This [requirement] was intended to prevent the harvesting of air rights up

mass on the lower portion of a tower is somewhat in keeping with the earliest setback rules, which resulted in the classic “wedding-cake” ziggurats of Park Avenue, other experts have questioned the wisdom of mandating street-level bulk rather than embracing the advantages of the slender supertalls.⁴⁰

B. Landmarks Designation and the Advent of Transfer Development Rights

At the same time that Manhattan’s skyline is transformed by some of the tallest buildings that the city has ever seen, made possible in part through the use of air rights, millions of square feet of air rights remain unused, “stranded” above many of Manhattan’s most famous and celebrated buildings, such as Grand Central Station and St. Patrick’s Cathedral, whose predicament is illustrated in Illustration 2.3.⁴¹

These historic landmarks, mandated by law to remain unaltered, have been unable to successfully match with a buyer who qualifies under existing regulations to accept their long-dormant air rights. In the heart of one of the world’s premier business districts, home to some of the most expensive office spaces in the world,⁴² huge volumes of space zoned for development has remained empty air for decades. Major landmarks, burdened by regulation to maintain their appearance at great cost, continue to forego perhaps hundreds of millions of dollars due to the inability to trade these rights.

Just as the history of ZLMs can be told in large part through the appearance of major alterations to Manhattan’s skyline over the last century, the story of Transfer Development Rights begins with the disappearance of a major Manhattan landmark and the civic actions to prevent any further vanishings. TDRs are the somewhat-unlikely result of the destruction of Pennsylvania Railway Station in 1963.⁴³ The loss of this

and down a block and piling them on a single building site, as was done at Trump World Tower, which occupies only 13 percent of the merged zoning lot.”)

⁴⁰ See Marcus, 1984, Section IV.

⁴¹ Barbanel, Josh, “Up in the Air: Development Rights of New York City Landmarks” *The Wall Street Journal*, April 5, 2015.

⁴² Cushman & Wakefield, *Office Space Across the World*, March 2015. This annual report analyzes the world’s most expensive office rental markets. Midtown Manhattan ranked 3rd behind London and Hong Kong in this most recent survey with an average occupancy cost of \$131 per square foot per year. Other sources note that office rental prices of \$200 per square foot are common across Midtown Manhattan. Available at: <http://www.cushmanwakefield.com/en/news/2015/03/osatw-2015/>, accessed July 29, 2015.

⁴³ For a more detailed discussion on the legal principles of Landmark TDRs, see Stinson, Joseph D., “Transferring Development Rights: Purpose, Problems, and Prospects in New York,” *Pace Law Review*, Volume 17, 319 (1996), available at: <http://digitalcommons.pace.edu/plr/vol17/iss1/6> as well as Abuhoff,

beloved city landmark, a private property bulldozed for redevelopment as Madison Square Garden, provoked a public outcry that led directly to the promulgation of the Landmarks Preservation Law of 1965 (LPL).⁴⁴

As sweeping as the loss of Penn Station was to the city, the breadth and power of the LPL seemed equally radical. The LPL granted the municipality, through the Landmarks Preservation Commission (LPC), extraordinary power to all-but-extinguish the development rights of private properties deemed historically or culturally important, and furthermore charge the owner with the explicit responsibility to maintain the landmark in a preserved state.⁴⁵

As a concession to owners of such designated properties, the LPL set out an appeal process, contemplating the possible delisting of a landmark due to the owner's economic hardship. The private owner could appeal for tax relief or outright exemption due to the financial burdens of preservation and maintenance.⁴⁶ In exchange for the curtailed ability to redevelop, the LPL created the first "Density Transfer Mechanism (DTM)," recognizing that many historic buildings were built well within the allowable development envelope permitting by zoning (zoning which in many cases was instituted long after the building's original construction).⁴⁷ Thus the original TDR mechanism was designed specifically to ease the economic liabilities imposed on private property owners due to inequitable zoning restrictions and their related burdens, in exchange for the public and civic value of an enduring historic landmark and the legacy of the city's architectural landscape.⁴⁸

This DTM initially permitted restricted transfers of portion of the landmark's EDR to certain neighboring properties, initially limited only 20% of the landmark's EDR to any one adjacent lot.⁴⁹ The DTM's definition of adjacency extended to sites across the

Lawrence Evan, "The City of New York and the Transfer of Development Rights," University of Pennsylvania (Masters Thesis), 1998, available at: http://repository.upenn.edu/hp_theses/249

⁴⁴ The Yale Law Journal. "Development Rights Transfer in New York City," *The Yale Law Journal*, Vol.82. No. 2, 1972, pp.338-372. Available at <http://www.jstor.org/stable/795117>, accessed July 29, 2015.

⁴⁵ Marcus, 1984, Section IV.

⁴⁶ Ibid.

⁴⁷ Ibid.

⁴⁸ For a more detailed discussion on the legal principles of Landmark TDRs, see Stinson, Joseph D., "Transferring Development Rights: Purpose, Problems, and Prospects in New York," *Pace Law Review*, Volume 17, 319 (1996), available at: <http://digitalcommons.pace.edu/plr/vol17/iss1/6> For a more detailed discussion of the promulgation of the Landmarks Preservation Law, see Marcus, 1984.

⁴⁹ New York City Department of City Planning, "Survey of Transferable Development Rights Mechanisms in New York City," 2015.

street from the landmark, and so for the first time contemplated the shifting of air rights outside of the city block in which the original EDR was located.

As many of Manhattan's prominent landmarks occupy the majority, or even the entirety, of a single city block, this was perhaps only logical to designate a wider receiving area, yet it marked an important first step in loosening the boundaries within which EDR could transfer, while retaining the notion that EDR would remain in the immediate vicinity of its origin. This aspect would continue to expand in later TDR programs in future decades.

The DTM, and the broader LPL, were famously challenged by the Penn Central Transportation Company when their attempt to radically alter the appearance of Manhattan's remaining great railway terminal, Grand Central Station, was blocked by the LPC in September, 1968. When Penn Central first brought suit against the city, the LPC reacted quickly to further loosen some of the original restrictions on the DTM, presumably to undermine the plaintiff's case.⁵⁰

The case was ultimately decided by the U.S. Supreme Court in June 1978, which upheld the concessionary benefit designed by the city in the form of the DTM, and rejected Penn Central's characterization of the station's landmarking as an unconstitutional taking.⁵¹ Critically, the court's majority opinion specifically classified the terminal's TDRs as sufficient compensation for the loss of the rights to redevelop the terminal itself or otherwise occupy the space above the station.

⁵⁰ Radford, R.S. "Takings and Transferable Development Rights in the Supreme Court: The Constitutional Status of TDRs..." *Stetson Law Review*, Vol. XXVIII, 1999, p.686.

⁵¹ Ibid. For a detailed legal analysis of the judicial reasoning as well as the practical and constitutional implications of the *Penn Central* ruling, see Stinson, 1996 as well as Radford, 1999.



Illustration 2.3 St. Patrick's Cathedral occupies an entire block bounded by Madison and Fifth Avenues and 50th and 51st Street (yellow). Although it owns more than 1 million square feet of EDRs, the landmark has not found a seller among neighboring properties (eligible lots within the blue bounding box, as it is itself surrounded by many other buildings that are either officially landmarked (dark red) or famous buildings, such as the Saks Fifth Avenue department store, which are highly unlikely to be redeveloped, and thus possible receive St. Patrick's development rights

C. The Failure of Landmark TDRs

Despite relaxation of the DTM's rules, and despite the enviable location of Grand Central Station mentioned previously, the station still sits below the majority of the TDRs granted by the LPL. Nearly four decades after challenging the concept at the Supreme Court, the building still holds more than a million square feet of transferrable FAR.⁵²

Grand Central is not alone in holding such an enormous volume of unused FAR. Other large midtown landmarks, such as St. Patrick's Cathedral and several other historic congregations, likewise sit beneath millions of square feet of excess development rights.⁵³ The buildings are not only landmarked, but their TDRs are landlocked—stuck on an island, surrounded by a sea of ineligible receiving sites. In most cases, their neighbors are either (a) fully built out, and thus unable to purchase FAR (indeed many older properties in East Midtown actually exceed the 1961 zoning limits, and were grandfathered in) or (b) not able to economically undertake redevelopment or (c) are themselves landmarked. Such as is the case with St. Patrick's Cathedral, with the New York Palace Hotel to the east, Saks Fifth Avenue to the south, and Rockefeller Center to the west, as shown in Illustration 2.3.⁵⁴

This problem has not only stagnated, but has grown. Grand Central and St. Patrick's not only share their predicament with each other, they now share it with many other buildings, as the number of landmarked properties across Manhattan has ballooned over the decades since the law's inception from a few hundred in the 1960s to around 1,400 by December 2013, estimated by New York University's Furman Center for Real Estate and Urban Policy to hold at least 33 million square feet of unused development rights.⁵⁵

Beyond the proximity issues hindering the greater exercise of Landmark TDRs, the law's appeal is greatly dissipated by the stringent requirements set forth by the city to

⁵² Furman Center, "Buying Sky," 2013, p.16.

⁵³ Barbanell, "Up in the Air," notes that St. Patrick's Cathedral holds between 1 million and 1.17 million square feet of unused FAR, according to various estimates. See also Geiger, Daniel, "Last Air Rights," *Crain's New York Business*, November 25, 2012, which states that 3 of Midtown's most prominent landmarked houses of worship: St. Patrick's Cathedral, St. Bartholomew's Church, and the Central Synagogue, together hold some 2 million square feet of air rights, with the Central Synagogue holding 200,000 square feet.

⁵⁴ Ibid.

⁵⁵ Furman Center, "Unlocking the Right to Build," March 2014, p.6, citing the rolls of the LPC.

obtain approval for TDR transactions. Landmarked properties are required to enter a binding agreement detailing a maintenance plan to ensure the conservation of the landmark before being eligible to market their TDRs.⁵⁶ Furthermore, the transfer itself does not occur as of right, but must be certified by the City Planning Commission, which itself requires a full public assessment through the city's Uniform Land Use Review Procedure (ULURP) which is universally regarded as lengthy and expensive, and the primary deterrent to making use of Landmark TDRs.⁵⁷

Until the ULURP process is successfully cleared, there is no guarantee that the TDRs can be transferred. Developers, behaving generally as rational market actors seeking the most profitable development with the least risk of time and expense and the least exposure to uncertainty, avoid the Landmark TDR process as such transactions are subject to discretionary approvals. As a result, landmarks which are sufficiently adjacent to eligible receiving sites have either not entered into an agreement to transfer TDRs or the parties make use of a ZLM instead of the Landmark TDR procedure.

The inability of many of the city's largest and most famous landmarks to monetize their EDRs undermines the original mitigating rationale for the Landmark EDM which was ruled sufficient compensation for the foregone development options of the landmark owner.

For at least a decade and a half, the City has acknowledged the need for Landmark TDR reform.⁵⁸ While subsequent innovations in TDR mechanisms have allowed greater flexibility in the brokering of EDRs to a wider range of sites, the city's most recent proposals for zoning reforms have subjugated Landmark TDRs to newer "bonus" mechanisms, which Purchasable Development Rights (PDRs) directly available to developers from the city, and even going to far as to mandate that these PDRs are accessed before any Landmark TDR can be acquired. As the city expands these bonus PDR mechanisms, the government continues to thwart landmarked properties from a more just exercise of their rights through TDRs.

⁵⁶ See N.Y.C. Zoning Resolution ZR§74-792(e)(3). For more detailed explanation of the TDR mechanism permitted by the LPL, see Loflin, John J., "Zoning and Historic Districts in New York City," *Law and Contemporary Problems*, Volume 36, Issue 3, Summer 1971, p.363.

⁵⁷ Furman Center, "Unlocking the Right to Build," March 2014, p. 7, compiles sentiments from real estate industry professionals.

⁵⁸ See Furman Center, "Unlocking the Right to Build," as well as the Municipal Art Society of New York, "East Midtown: A Bold Vision For the Future," February 2013.

D. The Advent of District Zoning

The City has not only sought to conserve significant individual buildings as landmarks, but to preserve the character of the city's historic districts. This movement brought about the next phase in the development of TDR programs, with the rise of District Zoning.⁵⁹

District Zoning more broadly and comprehensively designates sending districts—properties classified as eligible to transfer FAR— and receiving districts, designated areas specifically permitted to receiving these TDRs. As the Landmarks Preservation Law had expanded the latitude of adjacency, the trend was greatly widened to allow much more distant acceptable of FAR transfers, often many blocks away. Such so-called “floating air rights”⁶⁰ created a flexible arrangement with larger pools of sellers and buyers.

E. The South Street Seaport Subdistrict & The Implementation of TDR Banking

New York's inaugural designation of a subdistrict attempted to preserve “an historic but extraordinarily uneconomic...part of the city ripe for development”⁶¹ —a small quarter of two-hundred year-old buildings just south of the Brooklyn Bridge, surrounding the Fulton Fish Market. Known as Schermerhorn Row, these three buildings were in 1972, at risk of foreclosure, demolition, and redevelopment.

The South Street Seaport Subdistrict (SSSS) program designated five multi-block parcels and three waterfront piers as qualified receiving sites, and overall permitted 1.4 million square feet to be transferred from both Schermerhorn Row and several “demapped” streets.⁶² Between 1983 and 2008, at least six transactions transferred a total of more than 1 million square feet as part of the SSSS, so that the area both preserved its historic buildings and enjoyed additional commercial real estate development.⁶³

⁵⁹ Several papers referenced herein offer more detailed analyses of historic districts and development rights. See especially Loflin, 1971, Stinson, 1996, and Stevenson, 1999,

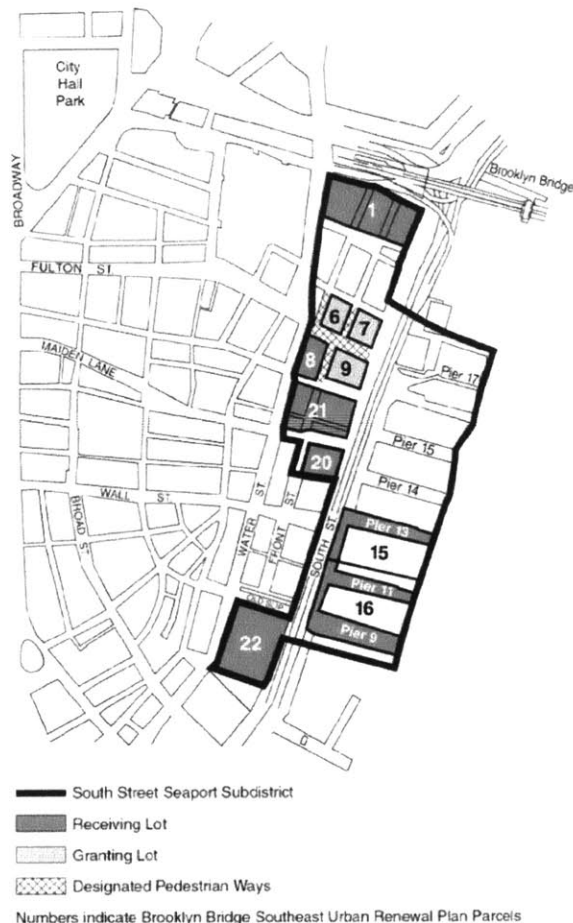
⁶⁰ See Definitions.

⁶¹ Quoted from Marcus, 1984, Section III.B.

⁶² City Planning, “Survey of Transferable Development Rights Mechanisms,” 2015, p.27.

⁶³ *ibid.*, p.26.

Although it was the first, and thus far the smallest zoning subdistrict mandated by the city, remarkably the SSSS is the only such designated transfer area in New York City that has ever included a so-called TDR Bank as component of its design. This TDR Bank created several advantages. It firstly allowed the landmarked properties of Schermerhorn Row to alleviate their immediate fiscal by partially meeting their overdue mortgage obligations by paying TDRs to their note-holding banks.⁶⁴ This syndicate of banks, in turn, held the TDRs as assets until such time as eligible receiving sites entered redevelopment and thus became end-user purchasers of the TDRs.



Thus the TDR bank mitigated the impediment of timing that continues to hamper the original Landmark TDR mechanism.⁶⁵ The mortgage banks were able to accept the TDRs and sell them on later when opportune, which provided a superior return to the coupon of the forgiven mortgage debt.⁶⁶ In turn, the landmarked properties were granted immediate relief, and did not have to wait to match with an interested and able receiving site. Newly unburdened by first-lien debt, the historic properties took on new investment to finance their restoration.⁶⁷

The SSSS TDR bank has been considered quite successful, even if around 400,000 square feet of the TDRs absorbed by the bank and may never be sold on to a development site.⁶⁸ TDR Banking has been widely recognized to solve the critical

Illustration 2.4: Map of the South Street Seaport Subdistrict. ©New York City Department of Planning.

⁶⁴ For a more detailed analysis of the designed of the SSSS TDR Bank, and TDR Banking more broadly, see Stevenson, Sarah J., "Banking on TDRs: The Government's Role as Banker of Transferable Development Rights." *New York University Law Review* 73-1329, 1999.

⁶⁵ *Ibid.*, pp.1338, 1342, and 1345.

⁶⁶ *Ibid.*, p.1346.

⁶⁷ N.Y. City Planning, "Survey of Transferable Development Rights," 2015, p.26

⁶⁸ *Ibid.*, pp.27-8.

problem of timing in successfully enabling preservation properties to more flexibly and immediately realize the upside of their TDRs, and such banks have been instituted as components of land management and conservation programs from Long Island to Maryland to Seattle.⁶⁹

However, although New York City's government has delimited larger and larger portions of Manhattan into special zoning subdistricts, TDR Banking has yet to be employed in subsequent subdistricting. In a comprehensive analysis of TDR banking published in 1999, legal scholar Sarah J. Stevenson details an array of political criticisms and structural problems with TDR banking.⁷⁰ Chief among these concerns is the persistent difficulty in valuation, particularly by a government entity which, in designating landmarks, risks legal exposure to suits against unconstitutional takings of property, and therefore must offer property owners adequate compensation for their extinguished and transferrable development rights.

F. The Special Theater Subdistrict⁷¹ & the Advent of Bonus Development Rights

In January 1966, when John Lindsay assumed the office of Mayor of New York, the Times Square area had endured decades of steady deterioration, plagued by blight and vice which detracted from the touristic and cultural appeal of the city's famed but struggling theater industry.⁷² At the same time, the commercial district centered about Grand Central Station in East Midtown had slowly begun pushing west across Sixth Avenue.⁷³

To further encourage this development vector while at the same time saving the lights of Broadway from going dim, the city created the Special Theater District plan in 1967. This included a Theater Bonus, which granted developers a 20% bonus in allowable FAR if a new, legitimate theater was included in their new project.

If measured in the construction of new theaters, this Special Theater District Bonus would qualify as a success, as four new developments included five new theaters in the

⁶⁹ Stevenson, 1999, offers a detailed analysis of TDR banking in other locations across the U.S.

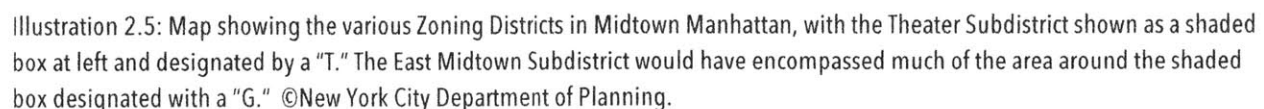
⁷⁰ Ibid.

⁷¹ For a more substantial and intricate chronicle of the promulgation of the Special Theater Subdistrict and its political advancement over the decades, see Kruse, Michael. "Constructing the Special Theater Subdistrict: Culture, Politics, and Economics in the Creation of Transferable Development Rights," *The Urban Lawyer*, Volume 40, Number 1, Winter 2008.

⁷² Kruse, 2008, p.109

⁷³ Ibid., p.108

⁷⁵ Ibid.



With the culturally-powerful theater owners threatening the extinction of their widely-loved industry in alliance with some of the most powerful developers in the city ready to exterminate the low-rent sin of West Midtown's red light district through newly-taxable redevelopment, substantial force brought a greatly-liberalized TDR program into being, although political wrangling delayed its onset until 1987.

Twenty-eight of Broadway's forty-four "listed" theaters were landmarked, yet with much broader transfer privileges than landmarks outside the Subdistrict. These designated theaters could send TDRs to any site within the Subdistrict. Such transfers were designed to perform in a similar fashion to the SSSS, but a much wider and more

centrally located zone: initially bounded by West 43rd to the south and West 50th Street to the north, in 1997 the city expanded the district from 40th to 57th Street between Sixth and Eighth Avenues: an entire swath of the center of the city could now trade in TDRs without any requirement of physical adjacency or linkage of continuous properties. Critically, the 1997 reforms could be undertaken as-of-right.⁷⁶

Beyond this dilation of transferability, the Special Theater program allowed developers of certain sites in the Subdistrict to purchase a 1.0 FAR bonus from a listed theater, if that theater's owner entered into a covenant guaranteeing the continued existence of the theater for the longevity of the bonus.⁷⁷ This Theater Retention Bonus was severable from any other TDR that the theater might engage in, so the 1.0 FAR bonus could be brokered to one developer while the theater's TDRs could be transferred elsewhere in the Subdistrict, in addition to the possible shift to a neighboring site through a ZLM.⁷⁸

This is among the first such examples of the creation of Bonus FAR as additional development rights to be traded as part of a large zoning subdistrict's incentive scheme.

G. District Zoning and Manhattan's Last Development Frontiers: The High Line & Hudson Yards

By the turn of the century, the city's political and planning leadership had successfully directed Manhattan's development forces across Times Square: New York's erstwhile vice district was remade as a tourist mecca and an extension of the midtown business district, hosting half a dozen new office towers as many of the city's largest financial firms migrated from Wall Street and Lower Manhattan to midtown, although as the area filled out, the expansion of the business district further westward was thwarted by strong neighborhood opposition in Clinton, Hell's Kitchen, and the Garment District.

New York City was enjoying a renaissance, and reaching all-time population highs—surpassing 8 million inhabitants for the first time in 2001.

As districts in the center of Manhattan such as SoHo, Chelsea, and the East Village enjoyed new-found preference among residents, real estate development began

⁷⁶ Kruse, 2008, p.101

⁷⁷ Ibid., p.116

⁷⁸ Ibid., p.114

marching to the far west side of the borough, to the underdeveloped industrial, warehouse, and logistical areas along the West Side Highway between the Lincoln Tunnel to the Holland Tunnel entrances.

In particular, the Meatpacking District exploded spectacularly, within a few short years transforming from a food distribution center into one the city's most desirable locations for luxury shopping, dining, and nightlife.⁷⁹

The appeal of the Meatpacking District was even further elevated by the opening of the High Line, a unique public park created from the derelict west side elevated railway which was used to transport livestock through the tunnels to west side slaughterhouses.⁸⁰

In tandem with the creation of the High Line, the city created the Special West Chelsea District (SWCD) in 2005. This latest zoning subdistrict directed density away from the High Line, aiming to preserve a 100-foot wide shoulder of open space along the new park as it runs northward along Tenth Avenue from West 19th Street to West 30th Street.⁸¹ This High Line Transfer Corridor also compensated owners of property surrounding and underneath the High Line whose development rights were curtailed by the park's establishment. The SWCD receiving area was bound by Tenth and Eleventh Avenues from 30th to 17th Streets, with a clamtoe extending south between West 19th to West 15th encompassing most of the blocks between Tenth and Ninth Avenues.

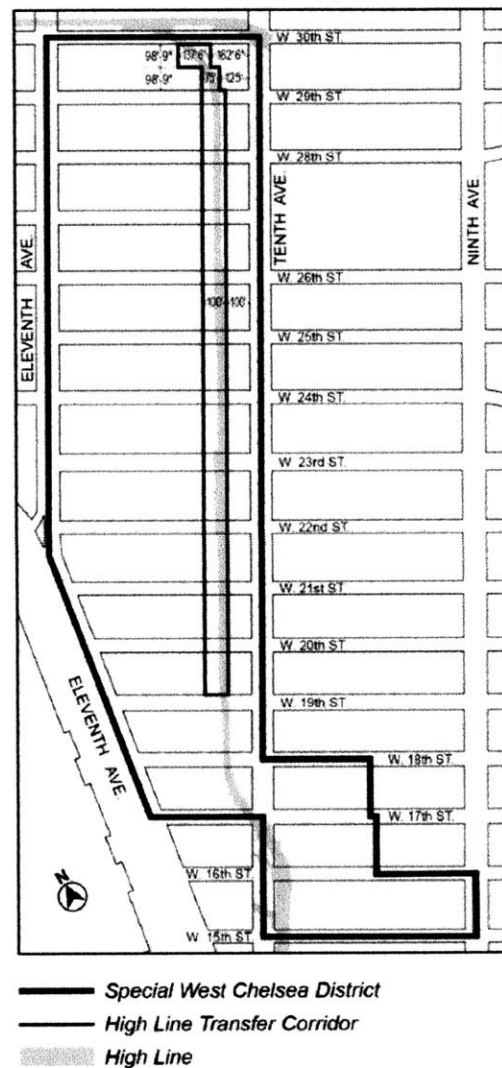


Illustration 2.6: Map of the Special West Chelsea Subdistrict, showing the High Line and High Line Transfer Corridor. ©New York City Department of Planning.

⁷⁹ As declared, for example, in "Meatpacking District Walking Tour," *New York Magazine*, August 6, 2013. See <http://nymag.com/visitorsguide/neighborhoods/meatpacking.htm>

⁸⁰ For a more detailed chronicle on the gestation of the High Line, see Been and Infranca, "Post Zoning," pp. 449-451.

⁸¹ See N.Y.C. Zoning Resolution ZR§98-00 through ZR§98-62 (2012)

In addition to the TDR mechanism channeling unused FAR away from the HLTC to other parts of the SWCD, the city instituted a series of Bonus TDR tranches—but subordinate to the privately-sourced TDRs. Monetary contributions to the High Line Improvement Fund or the outright underwriting or provision of restorations and improvements to the park infrastructure itself, such as the installation of elevators and stairways, would be award the property additional TDRs.⁸² Development sites in the SWCD also qualified for FAR bonuses for the provision of affordable housing by co-designated in the SWCD as an Inclusionary Zoning area.⁸³

Crucially, the TDR transfers carefully designed under the SWCD scheme were permitted merely by Notification to the city, and did not require discretionary review—the least onerous consent process for TDRs that the city had thus far ever enacted.

The High Line's success generated enormous excitement and global attention, and the high-end development that had started in the Meatpacking District blazed a trail northward along the newly planted wild grasses of the High Line.

As a result of this sizzling real estate market and regulatory ease with which the TDRs could be exchanged, the SWCD became one of the most active and successful in the city's history. Another 26 transfers shifted more than 400,000 square feet between July 2006 and April of 2014, with a further ten in process.⁸⁴

At the northern end of the High Line, an even larger development was beginning to take shape: Hudson Yards.⁸⁵

G. The Formation of the East Midtown Subdistrict And the Ascension of Purchasable Development Rights

By the time the excavations for the foundations of Hudson Yards had commenced, the focus of the city's zoning changes had migrated back to the center of Manhattan. What had previously been instituted as a small subdistrict around Grand Central station in

⁸² Been and Infranca, "Post-Zoning," 2012, p.450

⁸³ See Appendix C for a further explanation of the Inclusionary Housing Bonus program

⁸⁴ N.Y. City Planning, "Survey of Transferable Development Rights," 2015, p.25

⁸⁵ For a more detailed chronicle of the development of Hudson Yards, see *Ibid.*, and also Been and Infranca, "Post Zoning," p.452-3.

1992 was reimaged by the administration of Mayor Bloomberg a radical rezoning of Midtown. The proposed East Midtown Subdistrict (EMS) would be the largest yet by area and involve the largest volume of TDRs ever unleashed—including a complex set of bonus mechanisms which could dramatically upzone⁸⁶ certain preferred sites to higher FAR allowances than had ever been authorized by the city.⁸⁷

The EMS was first publicly unveiled in July 2012 as a 70-block area from East 39th Street to East 57th Street, roughly between 3rd and 5th Avenues. The city rationalized this proposition by arguing for a need to update the stock of commercial office space in the center of Manhattan, estimated at more than 70 million square feet, to fortify the area around Grand Central Station as one of the world's premier business districts.⁸⁸

While the city's fear-mongering over losing corporate headquarters to Tokyo or London without such a dramatic rezoning were not supported by direct evidence, the office towers in this area were undeniably ageing, and the city appeared sufficiently aware that more than a million square feet of FAR remained landlocked above Grand Central, more than thirty years after the Supreme Court deemed these very TDRs as adequate compensation for the station's landmarking.⁸⁹

The EMS proposal did include more flexible mechanisms for the transfer of these TDRs. Focusing exclusively on commercially-zoned sites, the EMS would have privileged certain "Qualifying Sites" —those with full Avenue frontage, and with a minimum lot size of 40,000 around the terminal and 25,000 square feet elsewhere in the district, which were decreed to be best-suited to absorb additional density.

However, the movement of Landmark TDR was made subordinate to two bonus FAR mechanisms: a District Improvement Bonus and Housing Improvement Fund⁹⁰. Ironically, while the huge bulk of long-stranded Landmark TDRs over Grand Central station was one of the primary reasons for the city to focus on reforming the area's

⁸⁶ See Definitions.

⁸⁷ See MACNY, "East Midtown," 2013, p.55

⁸⁸ The Municipal Art Society report, "East Midtown: A Bold Vision for the Future" is available at: <https://www.scribd.com/doc/127599215/Municipal-Art-Society-Report-A-Bold-Vision-for-the-Future-in-East-Midtown>, accessed July 29, 2015.

⁸⁹ Been and Infranca, "Post Zoning," p.437.

⁹⁰ MASNY, "East Midtown," 2013, pp.35-37.

zoning, the publicly-unveiled draft had inserted capital-generating bonus PDR schemes in a superior position to the Landmark TDRs.⁹¹

Leveraging these mechanisms together, first through the city's PDRs and secondly through Landmark TDRs, Qualifying Sites immediately adjacent to the terminal could potentially realize an FAR upgrading from the 15.0—already the maximum permitted anywhere in Manhattan and expedient enough to produce the supertalls of Billionaire's Row—to an unprecedented 24.0. Other Qualifying Sites elsewhere in the proposed subdistrict, particularly along Park Avenue, could have enjoyed an FAR upgrade from 15.0 to 21.6. With improvement bonus schemes, the final top-out could have potentially reached an unprecedented 30.0 FAR. Altogether, the EMS rezoning would have contemplated the addition of approximately 3.8 million square feet of new office space to the east side of Midtown.⁹²

In February 2013, the Municipal Arts Society of New York (MAS), a non-profit organization that has frequently acted as public think-tank on New York's zoning, published a study of the EMS proposal. While enthusiastically endorsing the city's desire to maintain Midtown Manhattan as a major center for business and employment, and although the report tentatively supported more liberal zoning permissions and even expending public resources to regenerate the business district,⁹³ the MAS called much of the EMS scheme's upzoning and bonus programs into question.

In particular, the MAS report rejected the elevated prominence of the DIF to underwrite improvements to the public realm and transit upgrades, specifically impugning the reliability of the DIF mechanism, remarking: "it's not clear how much money will be in the fund and when that money will be there."⁹⁴

The MAS report challenged the city government to avoid re-orientation away from the general capital budget and toward special funding mechanisms such as the DIF, going so far as to outline the various municipal, state and federal funding sources already dedicated to transit improvements and streetscape maintenance. Explicit in these criticisms was the question of whether the city sought to leverage PDR schemes rather than address gaps in infrastructural investment and the yawning deficits of the municipal budget.⁹⁵

⁹¹ Ibid.

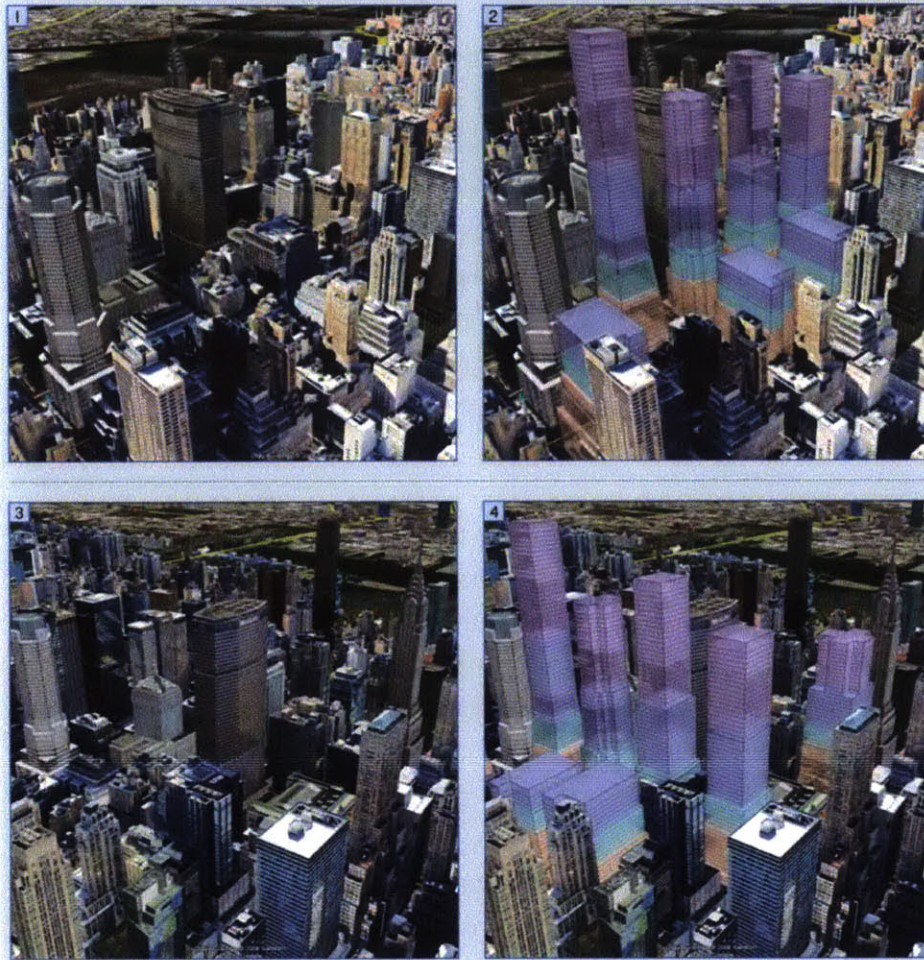
⁹² MASNY, "East Midtown," 2013, pp.35-37.

⁹³ Ibid., p.1

⁹⁴ Ibid., p.5

⁹⁵ Ibid.

IS THIS HOW EAST MIDTOWN SHOULD LOOK?



To illustrate how the City's plans might look once realized MAS employed the Environmental Simulation Center to create a series of renderings showing the size of office buildings the rezoning would permit. The City's proposal would allow the construction of some of the largest buildings in the city, in some cases adding 60% more space than what is currently allowed. As shown in these before and after images, world famous landmarks, such as the Chrysler Building, would disappear from view from many vantage points. The renderings also reveal the clustering that would occur around Grand Central Terminal. Allowing so many buildings of such great height in one location would darken area streets, and increase the number of people in the direct vicinity of the Terminal, further congesting already crowded streets.

View of East Midtown from the Northwest

- 1 Existing Conditions
- 2 Potential build-out (30.0 FAR) under City's proposal

Furthermore, with regards to the substantial upzoning potential of these bonus mechanisms, the MAS report graphically illustrated the superdensity that could result, rendering a cluster of skyscrapers walling off Grand Central Station. Aside from the aesthetic concerns over the loss of view corridors across Midtown to the Chrysler Building or subjective perceptions of foregone light and air, the MAS report questioned whether these exponential increases in density were designed with quantitative measurement to the increased burdens on foot traffic, transit ridership, and open space usage.⁹⁶

Illustration 2.7: Renderings of the New Density in the Proposed East Midtown Subdistrict, showing a crowd of towers around Grand Central Station with an FAR of 30.0 or more. Part of the MASNY's assessment of the rezoning proposal. See MASNY, "East Midtown, A Bold Vision," 2014. ©Municipal Art Society of New York.

⁹⁶ Ibid., p.55.

Just how these issues would impact the district, and how well these bonus programs would support the funding of civic improvements, and whether the upzoning of East Midtown would fortify its position atop the rankings of the world's financial centers, remained untested, as the City Council voted against the EMS in November 2013, rejecting Mayor Bloomberg's last major land use initiative.⁹⁷

While no new subdistrict was declared in the area before end of the Bloomberg administration, interest by the city and developers to rezone the Grand Central area remain alive. In early May 2015, a much-diminished proposal for a five-block area around Grand Central, known as the Vanderbilt Corridor was approved for a special permit by the City Council. This will specifically allow for greater density, which is already being realized by the 1,500-foot tall One Vanderbilt project by developer SL Green. The agreement allowing the 63-story, 1.6 million square foot skyscraper was specifically granted in exchange for \$220 million in public improvements in the form of a large public plaza and subway access.⁹⁸ As of June 2015, the rezoning was in the process of passing its final approvals.⁹⁹

Parties representing major area landmarks such as Grand Central terminal and St Patrick's Cathedral have protested the current Vanderbilt rezoning, as it provide a bridge between the city's white-hot real estate market and their landlocked TDRs.¹⁰⁰

⁹⁷ Smith, Stephen J., "Spurned Midtown East Plan Would Have Meant No More Subsidies for Office Builders." *Nextcity*, September 14, 2013. <http://nextcity.org/daily/entry/spurned-midtown-east-plan-would-have-meant-no-more-subsidies-office-builder>, accessed July 29, 2015.

⁹⁸ SL Green Realty Corp. "New York City Grants Final Approval to SL Green's One Vanderbilt Office Tower," May 27, 2015, (press release), available at: <http://www.businesswire.com/news/home/20150527006557/en/York-City-Council-Grants-Final-Approval-SL#.VYoN32Bqn5->, accessed July 29, 2015.

⁹⁹ Morris, Keiko, and Barbanel, Josh, "Rezoning of Midtown East Advances," *The Wall Street Journal*, June 14, 2015, available at: http://www.wsj.com/articles/rezoning-of-midtown-east-advances-1434331014?mod=rss_newyork_real_estate, accessed July 29, 2015.

¹⁰⁰ Hutchins, Ryan, "Planning Commission Approves Rezoning for Vanderbilt Project," *Capital New York*, March 30, 2015, available at: <http://www.capitalnewyork.com/article/city-hall/2015/03/8565140/planning-commission-approves-rezoning-vanderbilt-project>, accessed July 29, 2015.

3. The Value of Air Rights: An Analysis of Two Recent Supertall Zoning Lot Mergers

A. Notes on Terminology: The 100-story Tower in an 85-floor Building and How a 557,833-square foot Building Contains 719,996-square feet

As a prelude to the comparative analysis of sources and uses in the acquisition of FAR, its expenditure in the development of a property, and the realization of its value in residential condominium sales, it is critical to note the varying ways in which a building's space is measured for the purposes of zoning, construction, and marketing. Each of these three theaters of real estate has their own unique definition of floor area, with certain regulatory and legal implications. It is important to properly translate accounts of each type of cumulative measurement to ensure the validity of any comparison, such as the quantitative analysis presented here.

As has been previously stated, zoning is concerned with the FAR, the ratio of the total amount of floor area to the area of the ground lot itself, as has been already defined and illustrated (see Diagram 1 and Definitions). However, at least under New York's regulatory code, not all built space is counted as FAR. Most importantly, any mechanical space, including not just interstitial conduits and shaftways, but entire levels of a tall building set aside for heating, ventilation, plumbing, air conditioning, and other mechanical systems, are not deducted from the allowable FAR. Many circulation spaces, such as the bulkheads of elevators and stairwells, are also excluded from a development's FAR calculation. In the case of 432 Park Avenue, the residential tower alone includes 15 full floors of mechanical space, which are not deducted from the developments available FAR.

For this reason, the *gross floor area*¹⁰¹ of a building, the manner in which a building's total size is measured as defined by the city's building code, can and normally does exceed the same building's total FAR tally. In the case of 432 Park, the building was constructed to a total gross floor area of 719,996.58 square feet, yet is made possible by the assembly of only 557,833.38 square feet of FAR.

¹⁰¹ See Definitions. Incorporated from the New York City Building Code Section 1002.1.

Construction Floor	Marketing Floors	External Dimensions	Gross Floor Area	Marketed Area	FAR Used
74 to 79	91 to 96	93.5' x 93.5'	8,742 SF	8,255 SF	8,244.55 SF

Table 3.1: Spatial Measurements of 432 Park Avenue across Categories

Thirdly, it is important to note that, once a development is brought to the market, it develops a yet another set of measurement for marketing purposes. While there is no legal or even standard definition or measurement for square footages as colloquially and even contractually referenced in real estate brokerage, sales, and leasing, in large, high-end developments such as these two luxury condominium towers, the units are normally listed by their gross square footage, without deductions for wall thicknesses or mechanical or interstitial spaces. Only circulation spaces exterior to the unit would not be included, and therefore the condominium unit square footages on a particular floor would match the gross square footage of the construction floor, minus common lobbies, hallways, and circulation spaces such as stairwells and elevator shafts.

With further regard to marketing references, it is increasingly common, especially in terms of the sales campaigns of luxury condominium towers such as those analyzed here, for there to be a significant difference in terms of floor designations. These developer may re-index the building's construction floors into "marketing floors," to give a higher unit number than the construction floors would naturally designate, and liberally skip floor numbers to accommodate double-height units or for other purposes (and avoid the dreaded 13th Floor).

In the present examples, 432 Park Avenue has 85 construction floors, yet it's top floor is designated as the 102nd level.¹⁰² Floors 80-85, a total of 30,424 gross square feet, are not included in the FAR count. The highest occupied floor, the 79th, is designated as Penthouse Unit 96. The residences begin at the 22nd floor, yet the smallest "staff quarter" units are marketed from level 28.¹⁰³

Similarly, ONE57 was built out to 72 floors, yet its top level, two-story unit is marketed as the 90th floor penthouse. The next-largest unit number 75, contains 9,254 square feet of gross floor area over the 58th and 59th construction floors.

¹⁰² Pincus, Adam, "Macklowe, CIM Plan Another \$85m Penthouse at 432 Park," *The Real Deal*, July 9, 2013, available at: <http://therealdeal.com/blog/2013/07/09/new-penthouse-to-be-added-at-432-park-avenue/>

¹⁰³ Pincus, Adam, "432 Park Avenue Aims to Sell Some Staff Quarter Units for \$3m," *The Real Deal*, July 11, 2013, available at: <http://therealdeal.com/blog/2013/07/11/432parkavestaff/>, accessed July 29, 2015.

B. Data Collection and Comparative Methodology

In order to properly compare the parcels of developable floor area acquired in the development's assembly to the recorded transaction prices of its condominium units, it is critical to align each spatial index so that FAR can be translated into marketed and transacted square footage.

This requires the juxtaposition of a building's construction floor plan with the building's marketing plans, and also to correspond with the development's Zoning Diagram, known as a ZD1, which includes both a graphic projection of the building within its zoning envelope, along with a table of FAR use by construction floor (One57's ZD1 is included as Appendix C).

While a building's construction plans, zoning agreements, and marketing documents must all to be submitted to the various government agencies for record, not all three are automatically publicly available. As has been previously noted, Zoning Lot Declarations must be registered with the city Zoning Department, yet it appears that this does not necessarily require a ZD1 Zoning Diagram by a professional architect. The zoning lot needs to be merely described in words, in the same fashion that real property is verbally described in deeds and other transactional documents.

While the ZD1 for 432 Park Avenue is available on the city's automated information service, no such diagram is listed for ONE57, although a set of construction plans for that tower was attached to another submission, and is thus publicly accessible.¹⁰⁴

Likewise development's marketing documents must be submitted to the New York State Attorney General, in keeping with regulations governing the sale of securities. However, copies of these documents are only provided to members of the public through the successful application of a Freedom of Information Act request. While there exist multiple press reports which partially describe the marketing floor count of both buildings¹⁰⁵—and keeping in mind that the top floor unit can always be matched with the highest residential construction floor, therefore allowing for counting from the top of the tower down to match up penthouse condominium sales with construction floors.

¹⁰⁴ See CFRN 2013000343548 available from the New York Department of Finance Office of the City Register online database, known as ACRIS, at a836-acris.nyc.gov

¹⁰⁵ In particular, Pincus, Adam, "Macklowe, CIM Plan Another \$85m Penthouse at 432 Park," *The Real Deal*, July 9, 2013, available at: <http://therealdeal.com/blog/2013/07/09/new-penthouse-to-be-added-at-432-park-avenue/>, accessed July 29, 2105.

Alternatively, the deeds which officially register each condominium transaction note both each unit's marketing designation and its tax lot, as each condominium becomes a separate tax lot of assessment purposes. In the case of ONE57, these numbers are matched in the condominium declaration, which was registered with the city.¹⁰⁶

However, in the case of 432 Park Avenue, despite the presence of reported pre-sales, no such condominium has yet been declared, and the deeds for such sales have not been officially recorded with the city. While the reason for this is unclear, it appears that these are not required prior to the completion of construction and the issuance of the building's certificate of occupancy, which is not expected to be obtained before the end of 2015.

This somewhat inhibits the procurement of a full set of condominium transactions for 432 Park Avenue, and instead publicized sales-to-date of 15 condominiums recorded between April 2014 and May 2015 are incorporated into this analysis.¹⁰⁷

As ONE57's condominium units have been apportioned into Tax Lots 1608-1698, the New York City Department of Finance records the transaction prices of 29 condominium sales in ONE57 between April 2014 and April 2015.¹⁰⁸

Therefore, both ONE57 and 432 Park Avenue's publicly-available records provide only partial data sets for the purposes of this analysis. While a more complete record would provide further assurances of the figures analyzed herein, the records obtained provide a sufficiently-complete picture for both buildings to perform this analysis without resorting to sweeping assumptions.

The sometimes-challenging task of obtaining the purchase prices of Air Rights parcels will be discussed in the following two subsections, which narrate the Zoning Lot assembly campaigns of both ONE57 on Block 1010 and 432 Park Avenue on Lot 1292.

¹⁰⁶ See CFRN 2013000343548 available from the New York Department of Finance Office of the City Register online database, known as ACRIS, at a836-acris.nyc.gov

¹⁰⁷ Data on 14 transactions obtained from the well-regarded New York City real estate blog *Street Easy*, as indexed on http://streeteasy.com/building/432-park-avenue#tab_building_detail=2, accessed July 29, 2015. The sale of the top floor penthouse for \$95m was widely reported throughout 2013-15, for instance here: <http://therealdeal.com/blog/2015/05/28/saudi-billionaire-said-to-be-buyer-of-95m-penthouse-at-432-park/>

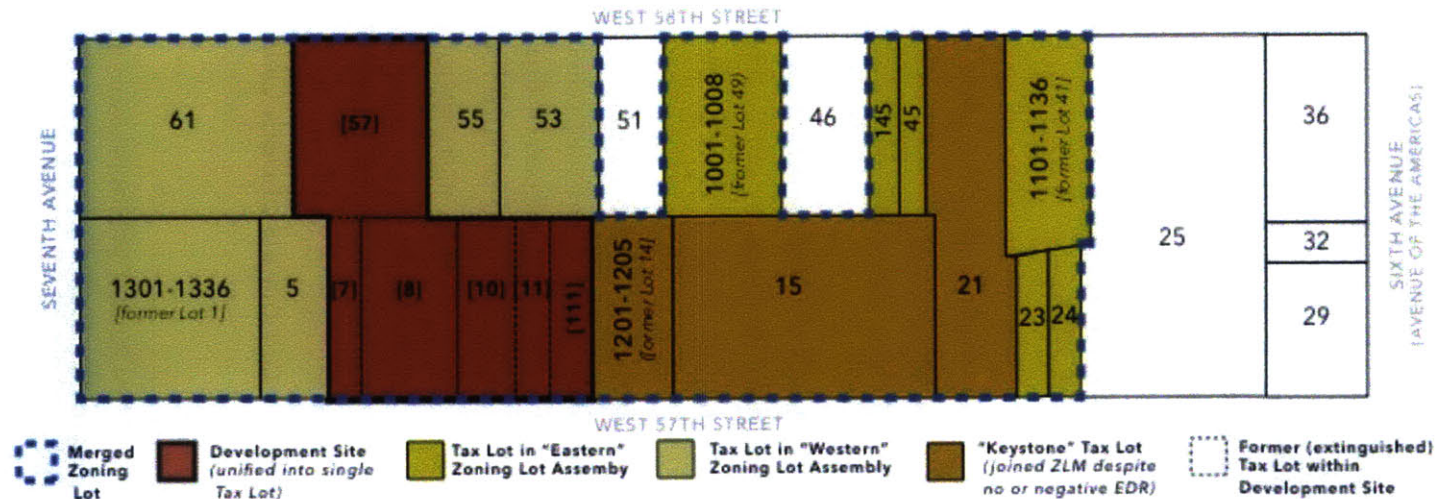
¹⁰⁸ See Appendix A for list of these condominium sales transactions.

Table 3.2 Transactions Related to the Zoning Lot Merger for ONE57

TRANSACTION DATE	TAX LOT(S)	STREET ADDRESS(ES)	SELLER and/or PROPERTY NAME	FAR ACQUIRED	ACQ. TYPE	RECORDED PRICE	PRICE PER SF	DEED or AGREEMENT CRFN (CITY REGISTER FILE NUMBER)	OTHER NOTES
03/27/00	05	165 W. 57th	Columbia Artists Mgmt.	38,000	A	\$ 5.250m	\$ 138.16	Reel 3087 Page 904	
04/11/01	07	161 W. 57th	Columbia Artists Mgmt.	24,120	F	\$ 7.000m	\$ 290.22	Reel 2087 Page 928	
10/31/01	1301-1336(01)	171 W. 57th	Briarcliffe Condominium	58,519	A	\$34.515m	\$ 589.81	Reel 3458 Page 2323 & 2272	
09/29/04	10	153 W. 57th		32,562	F	\$ 6.150m	\$ 188.87	2004000660258/59	
01/10/05	11	151 W. 57th		30,150	F	\$ 7.500m	\$ 248.76	2006000046146	
03/10/05	55	158 W. 58th	Muramac Management Co.	17,352	A*	\$ 1.713m	\$ 98.72	2005000341247	EDRs retained by Developer
04/11/05	24	115 W. 57th		17,356	A	\$ 5.750m	\$ 331.30	2005000271643	EDRs retained by Developer
11/01/05	111	147 W. 57th		55,777.5	F	\$20.000m	\$ 358.58	2006000275816	
01/30/06	53	152 W. 58th		20,500	A	\$ 4.100m	\$ 200.00	2006000159389/90	
03/14/06	1101-1136(41)	129 W. 58th	Park South, Penthouse Unit	27,368	A	\$ 5.394m	\$ 221.28	2006000387525	
06/08/06	61	911-917 7th Ave.	Alwyn Court	9,978	A	\$ 2.000m	\$ 200.44	2006000400660	Designated Landmark
06/08/06	57	166 W. 58th		78,330	F	\$41.400m	\$ 518.53	2006000400665	
06/27/06	23	117 W. 57th		15,653	A	\$ 2.000m	\$ 127.77	2006000416465	
07/11/06	08	157 W. 57th		55,778	F	\$10.509m	\$ 188.40	2006000411603	
11/29/06	1201-1215(14)	145 W. 57th	TAK Hawaii/Nippon Club	(267)	L	unknown	-	2006000669516/7	
09/19/07	21	119 W. 57th	Musart Associates	(7,582)	A	\$ 2.000m	-	2007000502360	
11/23/07	1101-1136(41)	129 W. 58th	Park South Condo Assoc.	see above	L	\$.662m	see above	2007000601252	
07/01/08	1001-1008(49)	140 W. 58th	Joyce Manor	23,668	A	\$ 5.769m	\$ 243.53	2008000283258	
05/18/09	15	123 W. 57th	Calvary Baptist Church	see below	L	\$10.000m	see below	2009000166042	
06/05/09	24 & 9024	115 W. 57th		see above	A*	(\$ 5.762m)	-	2009000233307	Lot 24's EDRs retained by Extell as Lot 9024
06/12/09	45 & 145	130/132 W. 58th		22,967	A	\$ 9.194m	\$ 400.31	2009000208599	
12/17/09	15	123 W. 57th	Calvary Baptist Church	45,000	A	\$28.600m	\$ 913.33	2010000183844	incl. provision of up to \$2.5m in "development services"
				606,675		\$204,243,669			

A = EDR Acquisition through ZLM F = Fee Simple Acquisition of Ground Parcel A* = EDR Acquisition through "Air Rights Parcel" L = Linkage of ZLM with no or negative contribution of EDRs
 Note: Excludes affiliate transactions between developer (Extell) and associate companies and entities. Extell, Imico, Intell, and other entities are all treated as the Developer.

Illustration 3.1 The Zoning Lot Merger within Manhattan Block 1010 for ONE57



C. The Assembly of Development Rights for ONE57

Extell Development Company¹⁰⁹ acquired the first property that would eventually be redeveloped into ONE57 in March 2000, five years before the building was first proposed, nine years before construction commenced, and fourteen years before construction was completed. Over the next nine years, Extell and its affiliate entities executed at least 22 arms-length transactions involving 18 different property owners, the city's records show. Table 3.2 lists these transactions, and the ZLM is mapped in Illustration 3.1.

This assembly campaign involved two separate ZLMs, which were merged into a single ZLM just prior to groundbreaking, and consisted of the outright purchase of six properties on the block which would form the eventual development site itself, as well as agreements governing twelve separate parcels of EDRs, two of which were bifurcated (apportioned) from the ground property beneath them into the own air right parcel tax lots.

Interestingly, one of these air rights apportionments, the creation of Tax Lot 9024 from its ground Tax Lot 24, also involved the later resale of the ground Lot 24 to a third party. Also notable in this ZLM are the inclusion of Tax Lots 21 and the 1201-1215 Lots for linkage, which reduced the available EDRs that the developer had accumulated, as will be discussed below. Also of note is Extell's purchase of the Penthouse unit (Tax Lot 1136) in the Park South Condominium building, which was a somewhat unusual way to obtain the unused development rights associated with that property.

While the public record of these transactions provides an insight into Extell's acquisition campaign that successfully resulted in ONE57, the documents publicly available through the city's register do not provide a complete picture. Indeed, there is not even a standard city form for such development agreements, although they tend to follow a similar format, they do not necessarily specify the amount of EDRs that is being brokered. It is common for a development rights agreement to simply reference the owning property's transfer of "all excess development rights." Helpfully, Extell submitted an FAR source and use table with each new ZLDA, so that even if a particular development rights agreement did not provide square footage amounts, these could eventually be learned from a subsequent ZLDA.

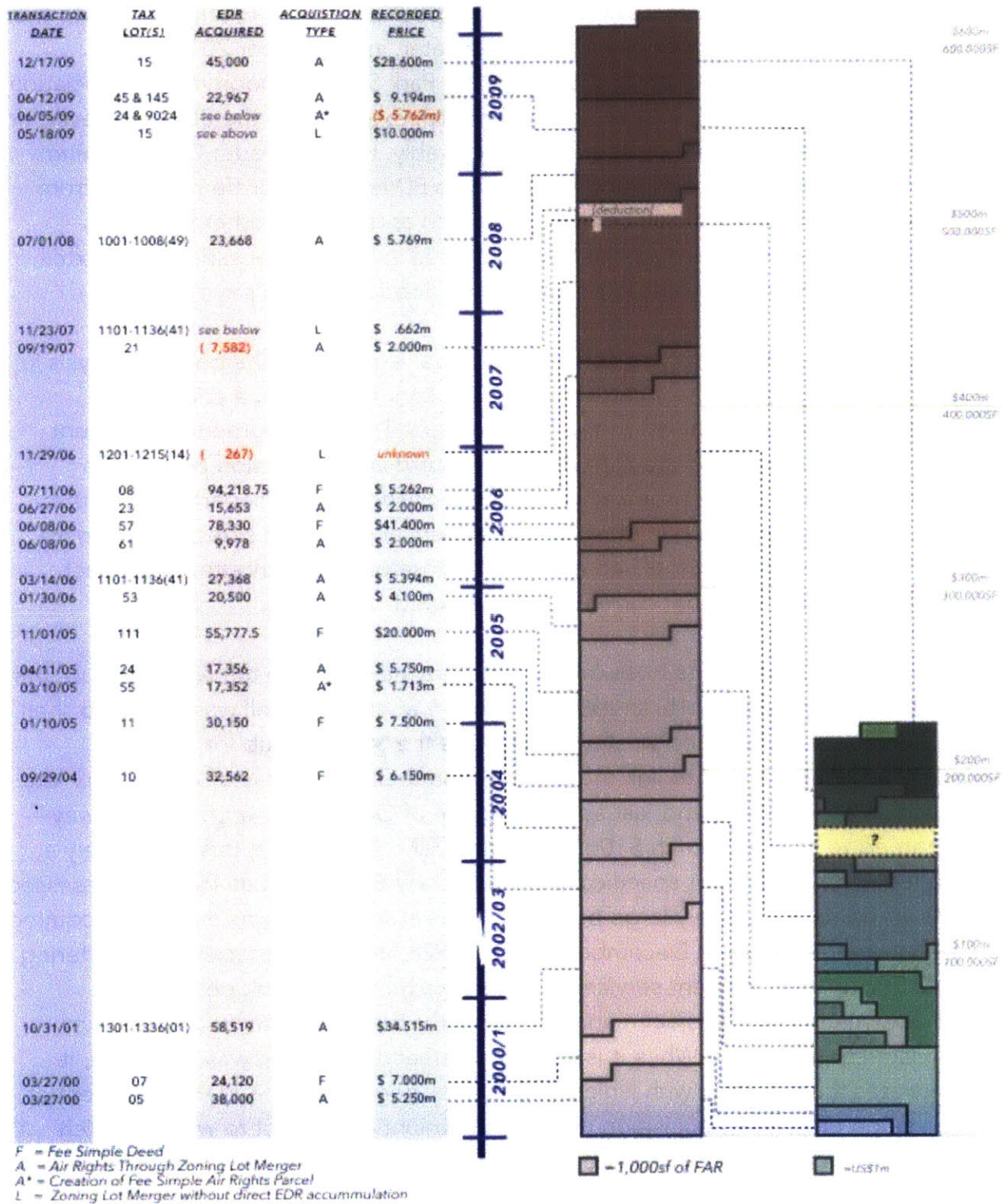
¹⁰⁹ As noted elsewhere, for the purposes of this analysis, no distinction is made between the various affiliated entities and holding companies which a single developer may incorporate or employ to acquire various parcels and properties.

Among the more challenging problems presented by the public record is that, while the transfer of a deed for real property must record the transaction price, other forms of agreement regarding development rights do not necessarily note the compensation paid, using the common contractual phrasing "for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged." At other times, a development rights transfer agreement references a price but the amount is not specified.

In the case of the ONE57 zoning lot merger, the compensation paid, if any, to join the ZLM is unknown, or the record is not fully reassuring regarding the recording the full compensation.

This is true with Extell's first transactions in March 2000, the purchase of Lot 7 from Columbia Artists Management (CAMI), with a simultaneous easement from the same owner for the EDRs of Lot 5 (which, incidentally, is a designated landmark). Since the easement involving Lot 5 was merely an agreement and not a transfer of real property, the consideration paid is not recorded. However, a year later, Extell participated in a \$5.25m mortgage with CAMI secured by Lot 5. Presuming the amount of this mortgage was paid by Extell on CAMI's behalf (which cannot be easily confirmed), this analysis assumes the total amount of the acquisition of Lot 5's EDRs to be the amount of this mortgage.

Illustration 3.2 Timeline of the Zoning Lot Merger for 4ONE57
 Showing Sequence the Spatial Assembly and Expenditure of Acquisition Costs



As noted previously, part of Extell's amalgamation of FAR on the block included the timely acquisition of the penthouse unit of Park South Condominium, Tax Lot 1136, in March 2006. This purchase and sale agreement specifically gives Extell the right to the air rights just above the penthouse. Over a year later, in November 2007, the Condominium Board representing the rest of the Park South Condominium association (Tax Lots 1101-1135) enters into an agreement with Extell to join the ZLM. However, no amount is recorded with this agreement. Conceivably, the Park South Condominium owners would have not objected to the building's EDRs being transferred away from the property, ensuring that their building remained as-is. On the other hand, it is surprising that the owners would not have extracted some compensation from Extell for joining the ZLM, yet the record provides no indication of such payment.

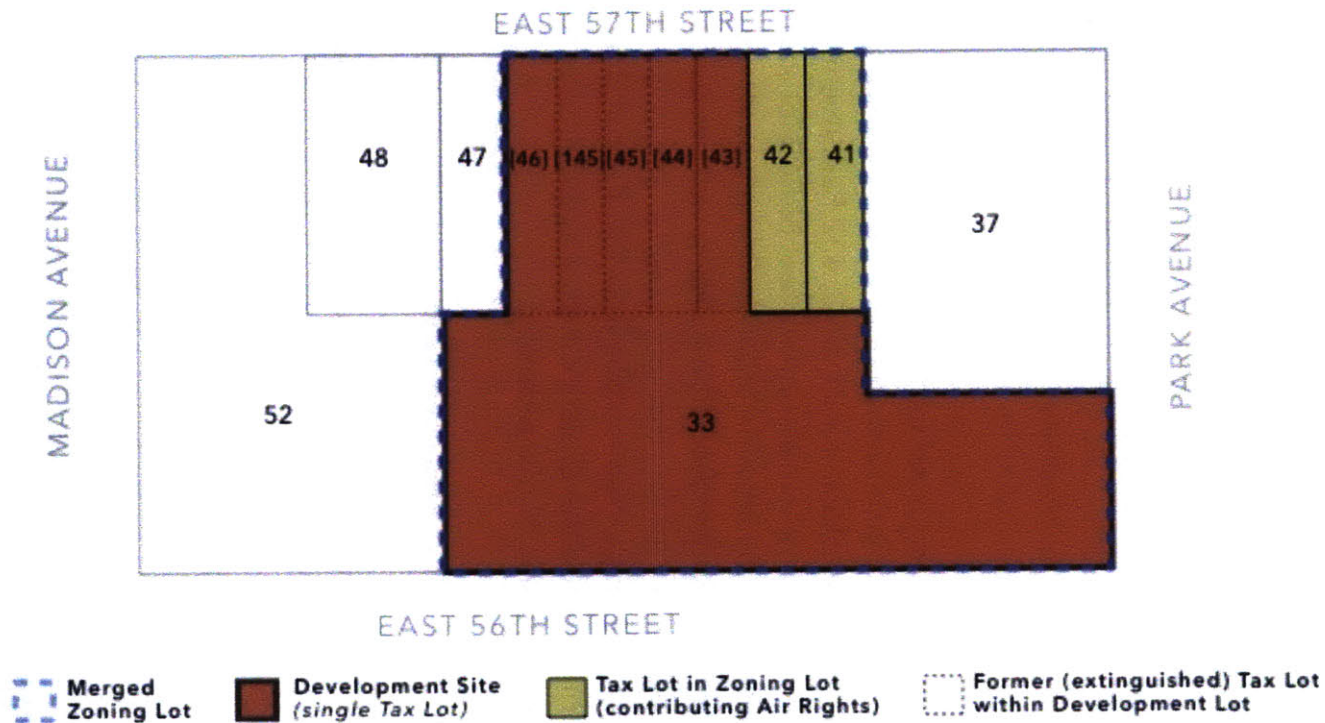
A more mysterious uncertainty, which will be further explored in the pricing analysis in the next section, involves the inclusion of the Tax Lots 1201-1215, a commercial condominium commonly known as the Nippon Club. The Development Agreement bringing these Tax Lots into the ZLM does not record any transaction price, even though the inclusion of this property was key to unifying the two separate ZLMs that Extell had slowly been amalgamating on the eastern and western sides of the block into a single ZLM, these tax lots had no EDRs themselves to contribute, and in fact were slightly overbuilt to what current zoning allowed.

Two subsequent transactions involving the property next door to the Nippon Club, the Calvary Baptist Church (Lot 15) shed some light on what fees Extell was willing to shell out to unify these eastern and western ZLMs. Like the Nippon Club lot, Calvary Baptist's Lot 15 was critical to link these two separate ZLMs. In May of 2009—very late in the acquisition process, and just as construction of ONE57 was getting underway—Extell agreed to pay the church \$10m to join the ZLM. At the time, this was merely a linkage fee—the agreement specifically excluded any EDRs that Lot 15 itself possessed. Lot 15's air rights, a relatively large packet of EDRs at 45,000SF, was only later acquired by Extell from the church in December 2009, for \$28.6m, plus a special clause offering up to \$2.5m in "development services" to the church by the developer, which presumably might cover project management of the building's renovation or other such construction services. While it is unclear whether this amount was ever paid, it demonstrates the creativity with which both parties negotiated this EDR agreement at the end-stage of Extell's acquisition process and might even point to ways in which Extell compensated the Nippon Club or Park South condominium owners for joining the ZLM.

Table 3.3 Transactions Related to the Zoning Lot Merger for 432 Park Avenue

TRANSACTION DATE	TAX LOT(S)	STREET ADDRESS(ES)	SELLER and/or PROPERTY COMMON NAME	FAR ACQUIRED	TRANSACTION TYPE	RECORDED PRICE	NOTES
01/24/06	33	434 Park Ave.	Host Marriott/Swissôtel The Drake	319,015.50	F	\$434.359m	Included real property & previously-acquired Air Rights
03/31/06	41	50 E. 57th		21,655.25	F	\$ 20.000m	
09/13/06	44	44 E. 57th	Daiva Brothers	22,172.00	A	\$ 5.543m	Acquisition of EDRs via ZLM; fee-simple purchase of building 03/06/07
10/13/06	45	42 E. 57th	East-Man Trading	23,189.00	A	\$ 5.797m	Acquisition of EDRs via ZLM; fee-simple purchase of building 05/24/08
12/04/06	42	48 E. 57th	Angel Enterprises/Turnbill & Asser	26,248.60	A	\$ 6.563m	
03/06/07	44	44 E. 57th		9,457.15	F	\$ 21.200m	Fee simple acquisition after previous ZLM acquired EDRs
03/09/07	46/145	38/40 E. 57th	(acquired by Dakota Travel)	62,734.16	F	\$ 60.000m	
05/24/08	45	42 E. 57th	T&A Holdings, Inc.	8,440.15	F	\$ 31.500m	Fee simple acquisition after previous ZLM acquired EDRs
12/23/10	43	46 E. 57th		26,734.16	F	\$ 42.052m	
				519,793.58		\$627,007,501	

Illustration 3.3 The Zoning Lot Merger within Manhattan Block 1292 for 432 Park Avenue



D. The Assembly of Development Rights for 432 Park Avenue

In comparison to Extell's nine year campaign to assemble development rights on Manhattan Block 1010, involving more than twenty transactions, the process by which Harry Macklowe¹¹⁰ acquired the development rights which became 432 Park Avenue is much shorter, covering barely four and half years, and consisting of only nine arms-length transactions related to just six neighboring properties.

Of special interest for the comparative analysis in the next section is to note two of the ground parcels, Lots 44 and 45, were acquired subsequently and separately from their EDRs; that is, Macklowe purchased both buildings after both had joined the ZLM and been compensated for their air rights.

As will be discussed further in the next section, Macklowe's development team made use of a city incentive scheme to gain additional FAR through the creation of a street level public plaza. In mid-2013, 432 Park Avenue was officially awarded a Plaza Bonus by city, at a rate of six square feet of FAR for each square foot of public plaza¹¹¹. Although construction of the building was already underway and the overall construction height of the building was unchanged, the 38,044.14-square feet of additional FAR was distributed within the building for additional floor spaces, including the late-stage creation of a new 79th floor at the top of the building (marketing floor 96). This lowered the project's overall acquisition costs, as the FAR was acquired outside of the purchase of real property.

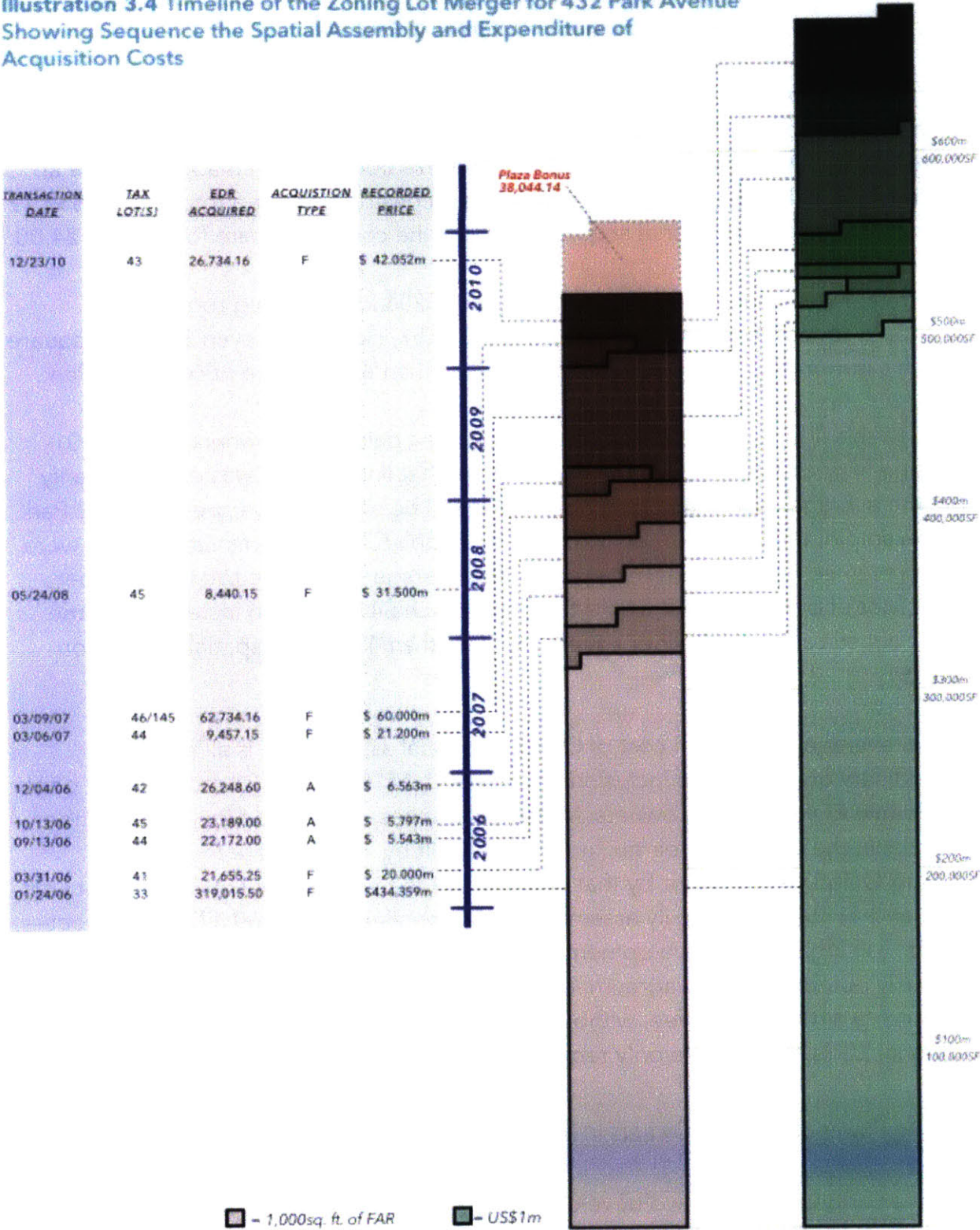
E. Comparative Analysis of EDR Acquisition Pricing in Zoning Lot Assemblies

The similarities of ONE57 and 432 Park ZLMs support a comparative analysis. The two ZLMs involve both the fee-simple acquisitions of different properties by the developer into a single tax lot, as well as the merger of other tax lots into a single zoning lot, and multiple agreements with neighboring properties to join the ZLM, all conducted

¹¹⁰ As noted elsewhere, for the purposes of this analysis, no distinction is made between the various affiliated entities and holding companies that a single developer may incorporate or employ to acquire various parcels and properties. Also excluded from the analysis presented in this paper is the distressed acquisition of a stake in the 432 Park Avenue development by the Los Angeles-based CIM Group, as the controlling interests of CIM and Macklowe are not publicly verifiable. For discussion of this issue, see Pincus, Adam, "Macklowe Buying 432 Park Retail for \$450m, Sources," *The Real Deal*, available at <http://therealdeal.com/blog/2014/07/09/macklowe-buying-432-park-retail-for-450m-sources/>, accessed July 29, 2015.

¹¹¹ As permitted by the Zoning Resolution. See N.Y.C. Zoning Resolution ZR§34-223.

Illustration 3.4 Timeline of the Zoning Lot Merger for 432 Park Avenue
 Showing Sequence the Spatial Assembly and Expenditure of Acquisition Costs



through a series of arms-length transactions over several years, both resulting in a luxury residential supertall in abutting 57th Street in Midtown.

In aggregate (unadjusted) real dollars, 432 Park Avenue's developers expended over \$627m to amalgamate 519,793.58 square feet of buildable FAR, or \$1,206.26 per square foot of FAR. Even including 432 Park's plaza bonus, which made available an additional 38,044.14 square feet of FAR for new construction (for a total of 557,837.72 square feet) without additional acquisition costs, the cost per square foot is \$1,124.00.

In contrast, Extell spent in aggregate just under \$206.25m to bring together 606,675.75 square feet of buildable FAR for ONE57, close to an even \$340 per square foot. This is more than \$780 less per square foot than the average price of 432 Park.

Although this figure does exclude the unknown fee paid to the owners of Lot 1201-1215 (the Nippon Club) to join the ZLM, even if that linkage cost was extraordinarily high, the average cost of this assembly would still be significantly lower than 432 Park. If, for example, the unknown fee paid to the Nippon Club condominium owners were to be presumed at an astronomical \$50m, the average cost of the total project per square foot of buildable FAR would then only reach \$410.43— an increase of some 26.7%, but still almost \$715 per square foot less than 432 Park's spatial acquisition price tag.

The low average acquisition cost of ONE57's spatial assemblage is all the more extraordinary given that the inclusion of Lots 1201-1215 and Lot 21 *reduced* the pool of buildable EDRs. Lot 21's owners, Musart Associates, were paid \$2m in September 2007 to join the ZLM but their tax lot was overbuilt by 7,582 square feet of FAR, reducing ONE57's zoning lot by that amount. Yet the inclusion of Lot 21 brought Lots 23, 24 and 1136—a previously assembled ZLM containing some 60,377 square feet— closer to joining Extell's development site on the western end of the block. Similarly, as previously noted, the initial agreement with the Calvary Baptist Church (Lot 15) paid the church a \$10m linkage fee, without Lot 15 providing an initial contribution of additional EDRs, which were only required later for \$28.6m.

F. Pricing Power of Property Owners in Merging with a Development Zoning Lot

The juxtaposition of these two development zoning lot assemblies and the examination of their individual transactions provides an insight into the market behavior of the transacting parties. Many of the transactional prices support a conclusion that the trading parties often settle on transaction prices more reflective of how the property

would trade in the market in the absence of the developer's campaign to collect FAR into a single zoning lot.

This might be expected at the earliest stages of the developer's efforts to assemble a multi-parcel zoning lot on a particular block, before neighboring properties could fully learn of the developer's larger campaign and harness any bargaining power to command a premium for their property. Likewise, the developer must offer a price for an acquisition reflective of its operational value, not as a redevelopment site. This is supported by the transactional record, which shows properties trading at or near fair market value in the early stages of the developer's assembly of a larger development site on the block, and demonstrates clear evidence of enormous premiums commanded as less and less of the block is available to absorb.

Most clearly, this can be seen in the case in Macklowe's initial acquisition of the 495-room Drake Hotel (Lot 33) in early 2006, which initiated the development campaign which eventually yielded 432 Park Avenue. The \$434.353m price equates to \$877,480.38 per room, at figure that is within range of other luxury hotel transactions which occurred in mid-town at the same time. Specifically, the 5-star 176-room Mark Hotel, facing Central Park on 5th Avenue at 77th Street, just 20 blocks north of the Drake, and operating as a Mandarin Oriental, traded its leasehold at \$850,000 per room in December 2005, a month earlier than the Drake acquisition.¹¹² While it should be noted that the Drake Hotel property reportedly included unused air rights of 115,000 square feet,¹¹³ which could account for the slight premium paid per room, it is just as likely that the fee-simple acquisition of the land over a mere leasehold accounts for this difference.

While the price paid for the Drake seemed governed largely by market forces and gave Macklowe over 319,015 of FAR to plan with, the purchase of an operating, historic luxury hotel burdened Macklowe's development plans for the block with an astronomical \$1,361.54 price per square foot of buildable FAR. This is almost exactly the average price of all the land parcels assembled for this project, whereas each of the air rights acquisitions cost a mere \$250 per foot.

¹¹² Kiel, Brandon, "Two More Top Inns Go Residential: 70-story at 440 Park Ave. (The Drake To Be Demolished)," *New York Post*, January 17, 2006.

¹¹³ As stated by broker Robert I. Shapiro, President of City Center Real Estate, which specializes in land assemblage and development rights deals, as quoted in the *New York Times*, February 24, 2013. See Finn, Robin, "The Great Air Race."

The most expensive FAR purchase in Extell's long acquisition campaign, the final \$28.6m paid to Calvary Baptist for 45,000 square feet of FAR, is barely 62% of this price, at \$857.78 per square foot. This late-stage agreement with Calvary Baptist is one of only a minority of transactions which suggest that a seller enjoyed a premium above what another buyer would pay for the property as either a building in its existing, usable state, or as a stand-alone redevelopment site. It is logical that such cases seem to consistently occur towards the latter stages of the zoning lot assembly.

This would be expected, as at the very least a property owner could publicly access city tax and buildings records of recent transactions within the same block, quite aside from the likely abundance of press reporting of large purchases, often accompanied with original reporting or speculation as to the developer's intentions for the site. This information would provide the seller with bargaining power in negotiating with a developer attempting a large lot assembly within the block.

In the case of 432 Park Avenue, this is most clearly suggested in the prices paid for the fee-simply ownership of the parcels facing 58th street, especially Lots 43, 44 and 45. At the time of these transactions, it was widely known publicly that Macklowe was assembling parcels in the block to undertake a large high-rise development project: indeed, from as early on as the announcement of the Drake Hotel acquisition, newspaper and industry press reported on Macklowe's plans to demolish the Drake for a condominium tower of more than 70 floors.¹¹⁴

G. Premiums Paid for Zoning Lot Unification

The records of these two development assemblies consistently suggests that any pricing power on the part of the owner is somewhat uncommon, and seems to occur only in special circumstances near the end of a developer's zoning lot assembly. This is most clearly demonstrated by the sums paid out to the owners of Lots 15 and 21, two of the critical 'keystone' lots which unified the two separate ZLMs that Extell had been amalgamating on the block since 2001.

As noted previously, any actual fee paid to the owners of the Nippon Club commercial condominiums (Lot 1201-1215) is not recorded—the agreement merely references an "Additional Purchase Price" which the agreement contemplates would be triggered if

¹¹⁴ [No Author], "Macklowe Organization in Contract for The Drake Hotel," *CityRealty*, January 20, 2006, available at: <http://www.cityrealty.com/nyc/real-estate/carters-view/macklowe-organization-contract-the-drake-hotel-site/7441>, accessed July 29, 2015.

the ZLM yields at least 34,534 square feet of EDRs from Tax Lot 51, a property which never ultimately joined the final ZLM. The amount of this Additional Purchase Price is not specified, nor is there any record of it ever having been paid.

The two separate transactions in 2009 to the owner of Lot 15, the Calvary Baptist Church, distinguish the price paid for simply joining a ZLM and the price paid for acquiring that lot's EDRs in a late stage. In May 2009, Calvary Baptist was paid a \$10m fee to join the ZLM, thereby finally unifying the two zoning lot mergers that Extell had been assembling on the eastern and western sides of the block. This first agreement specifies that Calvary Baptist's Lot 15 would retain all its development rights.

However in December of the same year, Extell and Calvary Baptist agreed to an amendment to the ZLM, transferring 45,000 square feet of EDRs to the developer for a price of \$28.6m, and also included a clause contemplating the provision of up to \$2.5m in "development services" to Calvary Baptist on behalf of the developer. It is unclear if these were ever provided by the developer, but for the purposes of this analysis, these calculations conservatively presume that they were.

If the \$10m, \$28.6m and \$2.5m are taken together, and presuming Calvary Baptist made full use of the development services offer, the church received a total of \$28.6m for its 45,000 square feet of EDRs, or \$913.33 per square foot. This is highest square foot transaction price paid among the 18 separate arms-length transactions which brought the ONE57 development site into a single merged zoning lot, and is more than 60% higher than the next-highest price, the \$589.81 per square foot for the Briarcliff's 58,519 square feet of EDRs in October 2001.

Whereas there might be some expectation that larger parcels of development rights could command a premium, on a square foot basis, over smaller air rights transactions, these two developments exhibit no clear correlation between the size of the EDR acquisition and the price paid per square foot of EDR.

H. The Price of Air Rights

Just as the roster of transactions for 432 Park and ONE57 both consistently evince that fee-simple acquisitions of land parcels are underpinned by the market prices for similar properties, the transactions which brought forth these two developments both demonstrate that air rights trade at a steep discount to fee-simple land.

As noted previously, several of the transactions which form the overall development picture for both properties provide insight into the prices for air-rights transfers in direct comparison to the prices paid for the fee-simple purchase of the land parcel from which these air rights originated. In the assembly of parcels on Block 1292, Macklowe purchased the EDRs from Lots 43 and 45 through a ZLM in late 2006 for a mere \$250 per square foot of FAR, only to acquire the land parcel of Lot 43 at \$1,572.95 per square foot of FAR in December 2010—the final zoning lot merger transaction of this development.

The purchase of Lot 45's ground parcel in May 2008 was at an even greater premium, \$3,732.20 per square foot of FAR. The 8,440.15 square feet of FAR that this transaction provided was barely a third of the 23,189 square feet of FAR that the earlier air rights transfer had yielded; yet cost \$3,482.20 more per square foot.

These prices clearly suggest that land parcels remain underpinned by their value as stand-alone properties, but can yield above average prices in certain circumstances. Logically, the owner of any usable property could sell to any other party besides the developer, which is surely a strong bargaining position for the owner when negotiating.

In the present examples, it is interesting to note the disparities in land parcel acquisition costs as compared to air parcels. The 432 Park Avenue project has a sizeable disparity between land costs and air rights costs, with the three air rights parcels all being negotiated in the same time frame for a mere \$250 per square foot, substantially less than the \$1,359.51 average land cost. The ONE57 development had a much lower overall acquisition cost, averaging just \$339.96 per foot, yet the air rights parcels were acquired for a *higher* average cost than the land parcels: averaging \$293.02 for land and \$398.03 for air rights.

Acquiring ground parcels and buildings through fee-simple purchases normally includes the option to retrade the property at a later date. This can most remarkably be observed in the case of Extell's acquisition of Lot 24. Extell subsequently apportioned the lot's air rights (which became Lot 9024) and disposed of the ground parcel Lot 24 after construction had commenced, realizing a \$5.762m gain. Extell retained the lot's EDRs in Lot 9024, which was later expended in the realization of ONE57.

The consistent pricing disparities between air rights and ground property manifest in these two development lot assemblies demonstrate the differing characteristics of these spatial parcels in the development market. Ultimately, the acquisition of EDRs involves a more restrictive commitment by the developer: while, conceivably, the air

rights could be retraded, it is unlikely that the developer would find another buyer, as these buyers must be on the same block, and it is unlikely that a single block would ever host multiple large-scale development projects seeking to acquire EDRs, much less within the same time frame. As these EDRs are packets of undeveloped space which cannot readily produce income without the further investment of development costs, they are much more similar to raw, undeveloped land than their ground-level properties. Furthermore, air rights must at some point be attached to a ground-level parcel in order to be employed in an income-producing development, while raw land requires no such additional step.

I. Market Notions of Air Rights Pricing and Rules of Thumb

The pricing disparity between air rights and land parcels is commonly observed by market actors, as noted in the press. It is important to incorporate such generation notions of air rights pricing which has existed in New York's real estate market into this analysis, as such pricing perceptions may govern the mentality of the parties engaged in the property transactions analyzed here.

While it appears that very little analysis of TDR pricing precedes this paper, a handful of press reports over recent market cycles do note some pricing of Manhattan air rights. Specifically, a *New York Times* article in November 2005¹¹⁵ remarked on professional appraisers' astonishment that prices for air rights at that time had climbed from a previously-reported high of \$200 per square foot to a high-profile air rights acquisition paying \$430 per square foot.

After that market cycle had peaked, air rights prices came back to earth. An online report in September 2009¹¹⁶, in the depths of the Great Recession doldrums, noted that at the previous peak in 2007 and 2008, air rights had traded for \$400 to 500 per square foot with rapid rate of trading activity. At the time of the article, air rights prices had sunk to \$150 to \$300 per square foot, but even that was difficult to achieve, as developers were not active in the market.

This article also noted that, while there was no exact model, air rights tended to trade at 40-50% of the land price, but in boom times, this spread could virtually disappear, with air rights trading at or even above the land price.

¹¹⁵ Bagli, Charles V., "\$430 a Square Foot, for Air? Only in New York Real Estate," *The New York Times*, November 30, 2005.

¹¹⁶ Dykstra, Katherine, "Air Rights, Once Coveted, Plummet in Value," *The Real Deal*, September 1, 2009.

The most recent market cycle saw just such price growth, as a New York Times feature quoted a real estate professional's account that air rights along the High Line corridor were trading for more than the land beneath them.¹¹⁷ Six months later, an online article from September 2014¹¹⁸ noted that an undisclosed midtown building was able to command a much higher price because the owner had previously purchased air rights from a neighboring property, with that FAR selling for at least as much as the building itself. The article also restated the general notion that traditionally air rights had sold at a 50% discount to the land value.

While these articles generally characterize a market sentiment that air rights have been increasing in absolute value and price relative to land value, as far back as 1979, the Philip Morris Corporation obtained Landmark TDRs from Grand Central Terminal in a transaction which reportedly paid double the land value.¹¹⁹

J. Aligning Square Footage Sources with Square Footage Use: The Principle of Sequential Stacking

While 432 Park Avenue's construction is not yet completed (the building does not have a certificate of occupancy as of July 2015), several of its condominium units have been purchased from April 2014 to May 2015. Records of fifteen such condominium transactions from the developer to individual owners are publicly available.

Also publicly available are the building's zoning compliance documents, which specify the allocation of acquired EDRs into the building's expenditure of FAR by floor. This record allows for the square footage of each sold condominium to be linked back to the original FAR that the developer acquired.

This is made possible by employing a principle of sequential stacking, in which each subsequent acquisition of EDRs is presumed to be spatially loaded on top of all previous EDR parcels in chronological order. Thus, the first FAR parcels are assigned to the lower floors of the proposed development, and the last FAR acquisition would crown the top of the new building.

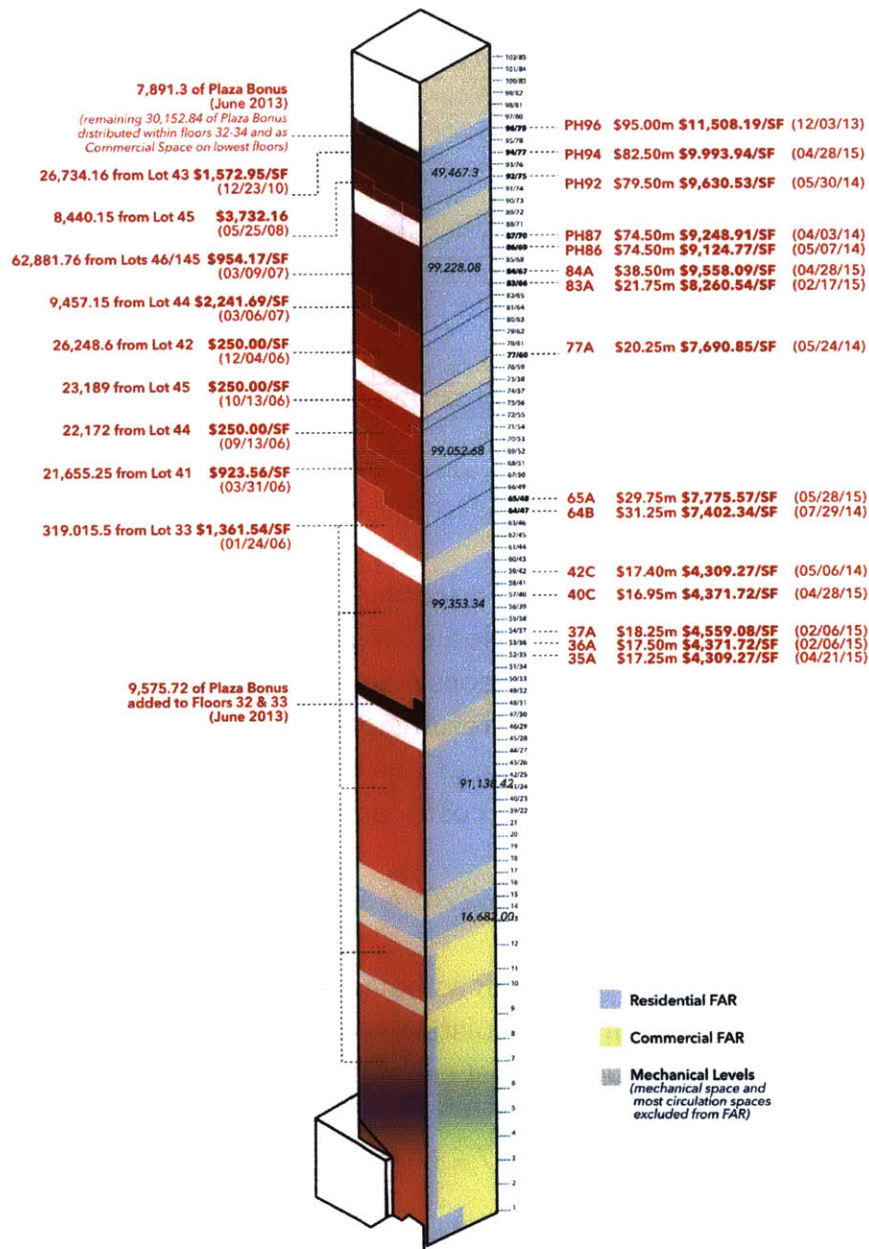
¹¹⁷ Finn, Robin. "The Great Air Race," *The New York Times*, February 22, 2013.

¹¹⁸ Ugolik, Kaitlin, "Developers Reaching Deep for Rights to Build Sky-High," *Law360*, September 23, 2014.

¹¹⁹ Marcus, 1984, Section II.

This pile of assembled FAR packets can also be matched with the schedule of FAR allocation in the new building's zoning documents, and can therefore establish which specific FAR acquisition(s) constitute which construction floors in the building. Once the constructed FAR corresponds to the acquired FAR, specific condominium transaction prices can be compared to the acquisition price of the original floor area.

Illustration 3.6 Sources and Uses of Floor Area Development Rights for 432 Park Avenue
Comparing the sequentially-stacked FAR parcels to the transaction prices of the same space as a residential condominium.



K. A Canonical Analysis of Development Returns: Comparing Acquisition and Sales Prices

The table below indexes the ten uppermost condominiums whose sales are publicly recorded, listed with their corresponding source lot:

Condo Unit	Const. Floor	Reported Price	Transaction Date	Square Footage	Sales Price PSF	Source Lot	Source FAR Cost PSF	FAR Acquisition Date	Months between Acq. & Sale (N)
PH96	79	\$95.000m	12/3/13	8,255	\$11,508.18	43 & PB	\$ 67.40**	12/23/10	32
PH94	77	\$82.500m	4/28/15	8,255	\$9,993.94	43	\$1,572.95	12/23/10	52
PH92	75	\$79.500m	5/30/15	8,255	\$9,630.53	43	\$1,572.95	12/23/10	41
PH87	70	\$74.500m	4/03/14	8,055	\$9,248.91	46/145	\$ 954.17	03/09/07	83
PH86	69	\$73.500m	5/07/14	8,055	\$9,124.77	46/145	\$ 954.17	03/09/07	85
84A	67	\$38.500m	4/28/15	4,028	\$9,558.09	46/145	\$ 954.17	03/09/07	97
83A	66	\$21.750m	2/17/15	2,633	\$8,260.54	46/145	\$ 954.17	03/09/07	95
77A	60	\$20.250m	5/24/14	2,633	\$7,690.85	42*	\$ 250.00	12/04/06	91
65A	48	\$29.750m	5/28/14	4,019	\$7,402.34	33	\$1,361.54	01/24/06	112
64B	47	\$31.250m	7/29/14	4,019	\$7,775.57	33	\$1,361.54	01/24/06	102
42C	25	\$13.087m	05/06/14	3,575	\$4,867.13	33	\$1,361.54	01/24/06	99
40C	23	\$12.637m	04/28/15	3,575	\$4,741.26	33	\$1,361.54	01/24/06	111
37B	20	\$13.420m	02/06/15	4,003	\$4,559.08	33	\$1,361.54	01/24/06	108
36A	19	\$12.671m	02/06/15	4,003	\$4,371.72	33	\$1,361.54	01/24/06	108
35A	18	\$12.421m	4/21/15	4,003	\$4,309.27	33	\$1,361.54	01/24/06	110

* = Air Rights-only Parcel ** = Plaza Bonus involved no acquisition cost.

Table 3.4: 432 Park Avenue Condominium Transactions and FAR Sources

In order to calculate a net value of each condominium, the costs of construction need to be estimated. While the exact construction expenditure for 432 Park Avenue is not publicly available, published reports have consistently quoted a total project development cost of \$1.25bn to \$1.3bn. Presuming that this includes the total spatial (land) acquisition costs, the unadjusted sum of which has been collected for this analysis as \$627,007,501, the construction costs can be calculated as the remainder of this, or:

$$\$1,300m - \$627m = \$673m$$

Maintaining a reference strictly to used FAR as defined by zoning, rather than the gross square footage of the construction, in calculating an applicable construction cost figure, the per square foot of FAR construction cost can be calculated as:

$$\$672,992,499 / 557,837.72 = \$1,206.43$$

While \$1,200 per square foot is an extremely high construction cost, well above industry averages across all classes of real estate in almost every market, it is within the

range of what has been reported as the premium costs of producing the new supertall luxury condominium towers in the heart of Manhattan¹²⁰. It should also be remembered that the figure used here is slightly different from the gross floor area, which is almost 720,000 square feet, which would translate into a construction cost of just under \$935 per square foot.

Employing the larger price per square foot of FAR figure in the comparative analysis of the original spatial acquisition cost alongside the final sales price establishes an estimated figure for the cost of constructing each condominium.

Condo Unit	Condo Price (FV)	Square Footage	Price PSF	Source Lot	Spatial Cost (PV)	Spatial Cost PSF	Construction Cost (K)
PH96	\$95.000m	8,255	\$11,508.18	43 & PB	\$ 555,644.59	\$ 67.40	\$9,959,084.75
PH94	\$82.500m	8,255	\$9,993.94	43	\$12,984,736.55	\$1,572.95	\$9,959,084.75
PH92	\$79.500m	8,255	\$9,630.53	43	\$12,984,736.55	\$1,572.95	\$9,959,084.75
PH87	\$74.500m	8,055	\$9,248.91	46/145	\$ 7,685,853.27	\$ 954.17	\$9,717,798.62
PH86	\$73.500m	8,055	\$9,124.77	46/145	\$ 7,685,853.27	\$ 954.17	\$9,717,798.62
84A	\$38.500m	4,028	\$9,558.09	46/145	\$ 3,843,403.72	\$ 954.17	\$4,859,502.23
83A	\$21.750m	2,633	\$8,260.54	46/145	\$ 2,512,334.16	\$ 954.17	\$3,176,531.82
77A	\$20.250m	2,633	\$7,690.85	42*	\$ 658,261.35	\$ 250.00	\$3,176,531.82
65A	\$29.750m	4,019	\$7,402.34	33	\$ 5,472,034.62	\$1,361.54	\$4,848,644.65
64B	\$31.250m	4,019	\$7,775.57	33	\$ 5,472,034.62	\$1,361.54	\$4,848,644.65
42C	\$13.087m	3,575	\$4,867.13	33	\$ 4,867,510.26	\$1,361.54	\$4,312,989.46
40C	\$12.637m	3,575	\$4,741.26	33	\$ 4,867,510.26	\$1,361.54	\$4,312,989.46
37B	\$13.420m	4,003	\$4,559.08	33	\$ 5,450,249.95	\$1,361.54	\$4,829,341.76
36A	\$12.671m	4,003	\$4,371.72	33	\$ 5,450,249.95	\$1,361.54	\$4,829,341.76
35A	\$12.421m	4,003	\$4,309.27	33	\$ 5,450,249.95	\$1,361.54	\$4,829,341.76

* = Air Rights-only Parcel

Table 3.5: Prices and Construction Costs at 432 Park Avenue

Using the data in these tables, it is possible to estimate the rate of return, using the canonical formula. The acquisition price per square foot of FAR multiplied by the square footage of each condominium unit establishes the original cost of the space (Purchase Value, or "PV"), and the final condominium price sets the future value of the same space (Finished Value, or "FV").

¹²⁰ Pincus, Adam, "City Construction Costs Break \$1,000 per foot," The Real Deal, October 1, 2014, quoting a New York construction industry analyst's statement that "now some developers are routinely paying nearly \$900 per foot to erect their under-construction, amenity filled condo towers, and one project has broken the \$1,00 per foot marker," although specific projects were not referenced. Available at: http://therealdeal.com/issues_articles/nycs-construction-craze/, accessed July 29, 2015.

This application of the canonical formula uses the total construction cost of each space ("K"), and the number of full months between the acquisition of each relevant parcel of FAR and the sale of this same FAR as a condominium as the period ("N") such that:

$$IRR = \left(\frac{(FV - K)}{PV} \right)^{\frac{1}{N}} - 1$$

Condo Unit	FV - K	PV	$\frac{FV - K}{PV}$	Months (N)	$\left(\frac{(FV - K)}{(PV)} \right)^{\frac{1}{N}}$	Monthly IRR	Yearly IRR
PH96	\$85,040,915.25	\$ 555,644.59	152.845	35	1.1545	15.46%	560.9%
PH94	\$72,540,915.25	\$12,984,736.55	5.587	52	1.0336	3.36%	148.7%
PH92	\$69,540,915.25	\$12,984,736.55	6.356	41	1.0418	4.18%	163.4%
PH87	\$64,782,201.38	\$ 7,685,853.27	8.429	83	1.0260	2.60%	136.1%
PH86	\$63,782,201.38	\$ 7,685,853.27	8.299	85	1.0252	2.52%	134.8%
84A	\$33,640,497.47	\$ 3,843,403.72	8.753	97	1.0226	2.26%	130.8%
83A	\$18,573,468.18	\$ 2,512,334.16	7.393	95	1.0213	2.13%	128.7%
77A	\$17,073,468.18	\$ 5,472,034.62	25.937	91	1.0364	3.64%	153.6%
65A	\$24,901,355.35	\$ 5,472,034.62	4.551	112	1.0136	1.36%	117.6%
64B	\$26,401,355.35	\$ 623,389.96	4.825	102	1.0156	1.56%	120.3%
42C	\$13,087,010.54	\$4,867,510.26	2.698	99	1.0100	1.00%	112.7%
40C	\$12,637,010.54	\$4,867,510.26	2.596	111	1.0086	0.86%	110.9%
37B	\$13,420,658.24	\$5,450,249.95	2.462	108	1.0084	0.84%	110.5%
36A	\$12,670,658.24	\$5,450,249.95	2.325	108	1.0078	0.78%	109.8%
35A	\$12,420,658.24	\$5,450,249.95	2.279	110	1.0075	0.75%	109.4%

Table 3.6 Canonical Return Calculations for 432 Park Avenue

These calculations demonstrate a series of extraordinary returns, which grow enormously higher up in the building. This is likely due to several factors, namely that the period N between the acquisition of the last parcel and the realization of returns in condominium sales is sequentially the shortest duration. This is further compounded by the trend for the higher-floor condominiums to sell earlier in the sales period, making the duration between the spatial parcel acquisition and its sale even shorter.

This is further compounded by the per square foot sales price premium that the higher floors command, as can be seen in the above tables. The outsized return achieved from the sale of the top-floor penthouse, calculated to be an annual rate of over 560%, is due to the fact that 7,891.3 square feet of the additional FAR awarded to the project as a plaza bonus was used to create this additional floor. Therefore, only 353.25 square feet of the FAR on this floor was taken from the acquisition pool, resulting in a spatial acquisition cost a mere \$67.40, for a penthouse which sold to a billionaire at more than \$11,508 per foot.

Illustration 3.6 A Graph Plotting Sales Price Per Square Foot vs. Return

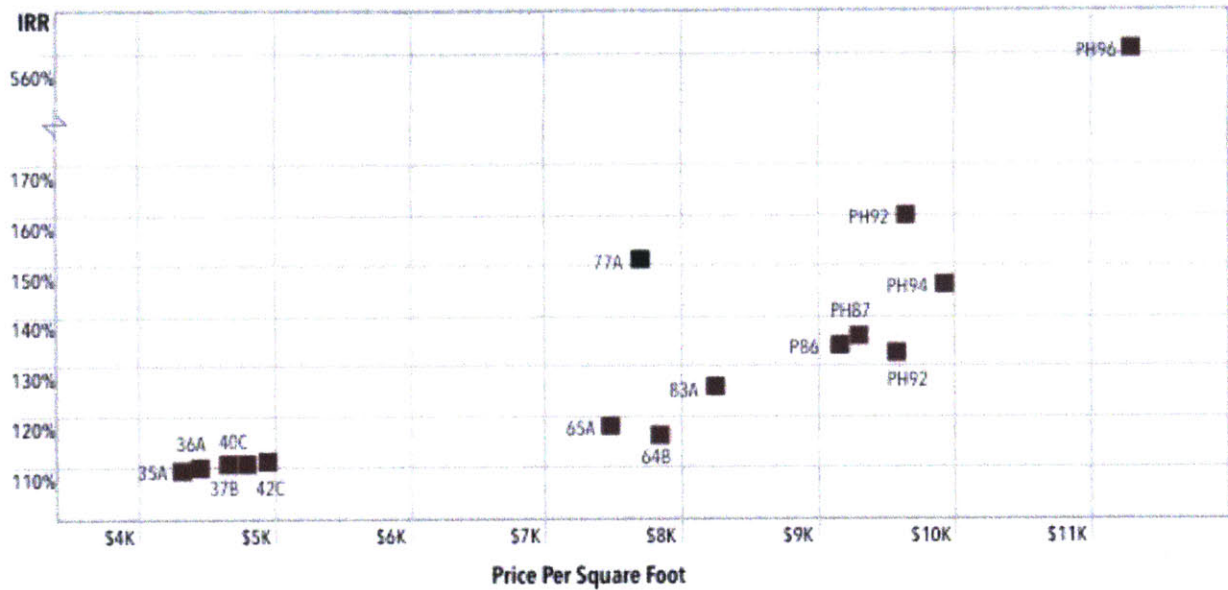
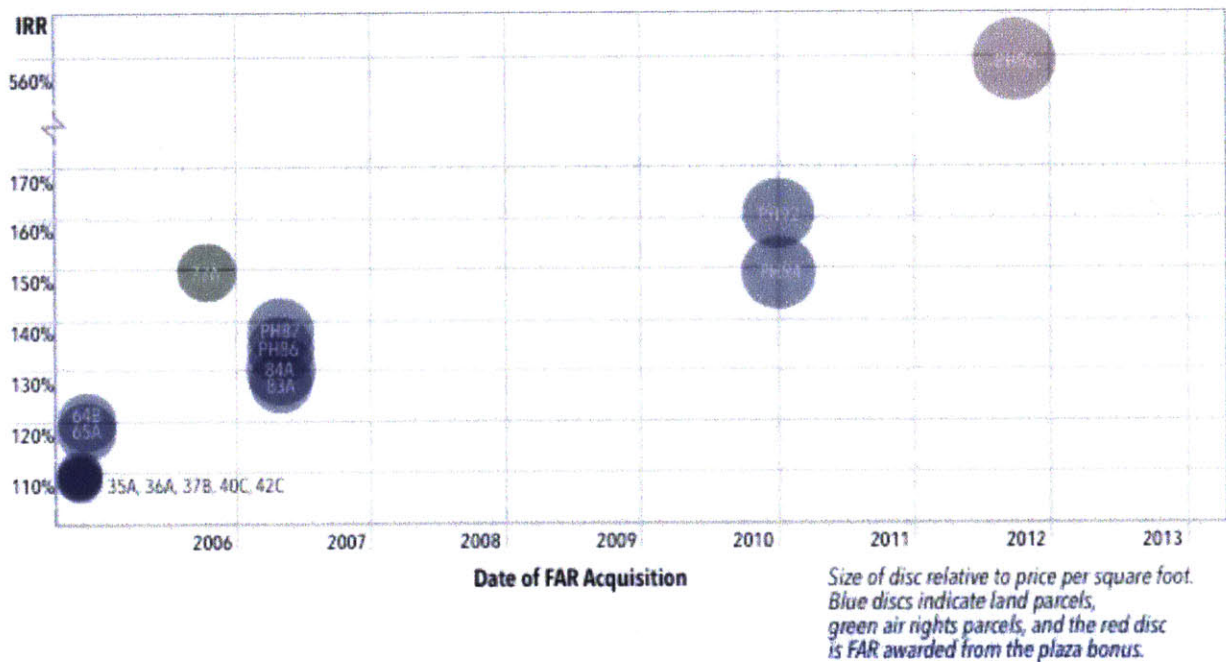


Illustration 3.7 A Graph Plotting Acquisition Date vs. Return



To better evince the behavior of the square-footage sales prices as a function of the overall size of each unit and the floor height, a regression analysis was performed on the sales data at 432 Park Avenue. In order to obtain a more substantial data set, in addition to the 15 reported sales transactions, a further 8 condominium offering prices are included for a total of 23 observations (This data set is listed as Appendix B). This regression suggests a model of sales price per square foot of

$$F(P) = 2418.8 + .0825S + 91.98C,$$

*with "P" as price per square foot, "S" as the square footage of the unit,
and "C" the construction floor of the unit.*

With a P-value of .1849 for the square footage, "S" but a P-value of 1.0403×10^{-12} for the construction floor, this analysis demonstrates that the floor height of a unit has significant influence on its per-square footage price. Other potential factors which govern these cost include whether the unit is the exclusive condominium of a particular floor, or whether there are multiple units on the same floor, and the absolute number of residential floors above the particular condominium in question. With an absolute price differential of \$1,514.24 per square foot between the otherwise-identical units PH96 and PH94, the premium paid to be the absolute-highest condominium in a building is clearly significant. Hierarchy matters.

The functionality of these calculations is limited by the assumptions underlying their inputs. The prices and costs (FV, PV, and K), are stated in quoted dollar terms, and are not compounded or discounted across the holding periods. And, as noted above, while the construction costs per square foot seem within an expected range, the figure is only based on media reports, and is not true to the actual expenditures. Most especially, no weighting is given to per square foot construction cost based on the floor height. It might be expected that higher floors have higher per square foot construction costs, given premium engineering, mechanical, and logistical requirements that might logically grow with building height.

Nevertheless, this analysis offers a reliably accurate insight into the extraordinary returns that developers can achieve for successfully acquiring the air rights of neighboring properties into residential condominiums. The limited pool of potential buyers of air rights on any particular block creates something of a monopsony condition. When combined with the substantial discount that air rights tend to trade for—a markdown perhaps only partially justified by the less-immediate income-generation potential of air rights parcels as compared to land parcels—developers are able to translate very inexpensive space into extremely profitable space.

Even if the air rights owner is able to command substantial bargaining power with the developer— typically in a later stage of the spatial assembly process, even just prior or during the early stages of construction—the higher sums the developer must pay is mitigated by an increased certainty that the development is about to be realized, and thus that the lately-acquired FAR will be employed to add more premium space to the top of the building, where the highest per-square foot prices can be achieved. Even conservatively presuming construction costs far outside industry norms, the stratospheric sales prices attached to these condominium sales unquestionably yield unusually high returns for the developer, with annual returns greater than 100% and repeatedly exceeding 150%.

Appendix A: Table of Condominium Sales at ONE57

As of July 2015.

Tax Lot	Unit	Date	Price	Buyer	SF	Const. Floor	PSF
1698	90	12/13/14	\$100,471,453	P89-90 LLC	10923	71-72	\$9,198.16
1697	88	03/18/15	\$47,367,492	PAC WHOLLY OWN	6231	70	\$7,601.91
1695	86	01/21/15	\$47,366,990	ONE57 86 LLC	6235	68	\$7,596.95
1694	85	12/03/14	\$55,559,312	TOWERS 85 LLC	6240	67	\$8,903.74
1693	84	12/18/14	\$52,952,500	TOWERS 84 LLC	6240	66	\$8,485.98
1691	82	10/13/14	\$56,079,299	RIDGEWOOD 57 INC.	6240	64	\$8,987.07
1690	81	11/18/14	\$55,498,125	REBECCA MOORES	6240	63	\$8,893.93
1689	80	11/22/14	\$52,952,500	LAPUSNY	6240	62	\$8,485.98
1688	79	12/03/14	\$50,916,000	ONE57 79 LLC	6240	61	\$8,159.62
1687	77	4/27/15	\$47,782,187	UNIT85A ACQUISITION CORP.	6240	59	\$7,657.40
1686	75	3/27/15	\$91,541,053	57157 CO. LLC	9254	58-59	\$9,892.05
1684	67A	3/16/15	\$30,042,375	ONE57 67A LLC	4116	56	\$7,298.92
1682	66A	10/14/14	\$29,533,450	ONE57 66A LLC	4483	55	\$6,587.88
1680	65A	12/23/14	\$29,329,100	ONE57 65A LLC	4483	54	\$6,542.29
1678	64A	12/1/14	\$24,843,665	GMF 157 LP	4483	54	\$5,541.75
1677	63B	10/1/14	\$27,127,161	WEST57 HUDSON LLC	4193	53	\$6,469.63
1676	63A	7/29/14	\$32,571,706	ONE57 63A LLC	4483	53	\$7,265.60
1674	62A	5/5/14	\$31,671,075	ESCAPE FROM NEW YORK LLC	4483	52	\$7,064.71
1672	61A	5/16/14	\$30,449,175	L& HP FAMILY LLC	4483	51	\$6,792.14
1670	60A	4/7/14	\$30,551,000	RAINBOW CHOICE INT. LTD.	4483	50	\$6,814.86
1668	59A	2/27/14	\$30,041,875	EFSTALMAR LLC	4483	49	\$6,701.29
1664	56B	10/1/14	\$10,033,263	CM157 LLC	2009	46	\$4,994.16
1662	55C	3/27/15	\$22,405,000	PLATINUM HIDEWAY LLC	3228	45	\$6,940.83
1661	55B	9/30/14	\$22,927,038	AL-SAMIRYAH N.Y. LLC	2009	45	\$11,412.16
1658	54A	6/20/14	\$21,386,750	TSAI UENG, MEI-HUI	3228	44	\$6,625.39
1657	53B	4/14/15	\$30,683,373	HEBREWS 3:4 LLC	5475	43	\$5,604.27
1656	53A	7/30/14	\$21,895,875	65-A LLC	3228	43	\$6,783.11
1654	52A	6/26/14	\$20,877,625	PARK VIEW NORTH LLC	3228	42	\$6,467.67
1652	51B	5/1/14	\$7,589,463	PARKSVILLE INVESTMENTS CORP.	2009	41	\$3,777.73

Source: New York City Department of Finance

Appendix B: Table of Condominium Sale and Asking Prices at 432 Park Avenue

As of July 2015. Asking Prices in Blue.

Unit	Price per Sq. Ft	Square Feet	Construction Floor
95	\$11,508.18	8,255	78
94	\$9,993.94	8,255	77
93	\$9,812.24	8,255	76
92	\$9,630.53	8,255	75
88	\$9,497.21	8,055	71
87	\$9,248.91	8,055	70
86	\$9,124.77	8,055	69
84	\$9,558.09	4,028	67
83	\$8,260.54	2,633	66
82A	\$8,165.59	2,633	65
80B	\$8,162.70	5,421	63
77	\$7,690.85	2,633	60
73A	\$8,397.61	4,019	56
66B	\$8,024.38	4,019	49
65	\$7,402.34	4,019	48
64	\$7,775.57	4,019	47
42C	\$4,867.13	3,575	25
41C	\$4,804.20	3,575	24
40C	\$4,741.26	3,575	23
37B	\$4,559.08	4,003	20
36A	\$4,371.72	4,003	19
35A	\$4,309.27	4,003	18
35B	\$4,434.17	4,003	18

Source: 432Park.com/56 and Park (NY) Owner, LLC; Streeteasy.com/Zillow Inc. Sites.

Appendix D: A Note on the Inclusionary Housing Zoning Bonus Program

Beyond pioneering zoning regulation generally, the City of New York has brought about innovations in incentive zoning, in which developments in designated areas are eligible to receive additional FAR in exchange for the provision of permanent affordable housing units. Affordability is defined as being 80% or below the Area Median Income, and the “permanency” requires that the affordable units endure for the life of the development receiving the bonus.

The bonus differs for each designated area, as a percentage of the base permitted floor area. Certain Inclusionary Zoning districts grant up to a 33% increase in FAR over this base. The specific bonus granted to each development is calculated by the amount of affordable housing provided, in square feet, and as a percentage of the total units developed that are designated as affordable: at minimum, 20% of all the developed units must be affordable to tenants at 80% or below the AMI. More recently, the city has allowed an affordable purchase program.

Developers are given wide flexibility in the provision of these affordable units. The regulations do not require that the affordable units be at the same site as the development receiving the IHB, as long as the affordable units are located in the same Community District or a Community District within a half-mile of the receiving development site. Furthermore, the regulations do not even require that the affordable units be new-build: the “preservation” of existing affordable units also qualifies a developer for the IHB.

As of 2011, the Borough of Manhattan has 10 designated Inclusionary Housing Bonus Designated Areas. Relevant to the wider issue of TDRs, IHB designated areas include parts of the Hudson Yards and West Chelsea Subdistricts, both of which encompass TDR programs.

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