

Data, Sources and Calculations for blog post, “Why Doesn’t New York Construct the World’s Tallest Building Anymore?”

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I. Calculations

Total costs: Total costs were calculated as estimates or published total construction costs plus the market value of the lot. No financing costs were assumed (other than what may be embedded in published figures for the costs). I obtained or estimated the total gross building area (in square feet) to calculate total cost per square foot of gross building area.

Rents: Rents are either average rents per square foot earned or expected around the time building was opened. If published figures were not available, I estimated values based on historical data collection.

Benefit-to-Cost Ratio: The benefit-to-cost ratio = average expected rent per square foot / total cost per square foot of gross building areas.

Return on investment (ROI): To estimate an ROI value for each building, I had to make some assumptions and simplifications. For total income I assumed $0.9 \times \text{average rent per square foot} \times \text{total rentable area}$, where 0.9 was an occupancy assumption (i.e., 10% vacancy). Net operating income was assumed to be $0.5 \times \text{total income}$. That is, I assume for simplicity that operating expenses were half of the total revenues. For this blog post $ROI = \text{net operating income} / (\text{total costs})$. The figure of about half income for expenses seems conservative based in what I can tell for historical construction. See CK below.

II. Sources

Notes: I did my best to crosscheck all figures, given there is always some variation in reported numbers. However, please consider these numbers as estimates. In cases where published figures were used, I went with those. In other cases, I had to make estimates based on available data about rents and land costs in Lower Manhattan or Midtown. Average rents per square for central office neighborhoods until 1931 are available in various articles from the *New York Times*, the *Wall Street Journal* and the *Real Estate Record and Builders Guide*.

For all extant buildings (that have not been expanded), floor count, net building area, lot size, and floor area ratio can be found at: <http://www.oasisnyc.net/map.aspx>. Building specs completed before 1900 are in DF, LC, or Wikipedia entries for specific buildings. Historical lot sizes when needed were also obtained from atlases available on the NYPL website.

Books are given by initials of authors and bibliography is below. Note that full data was not obtainable for the Tribune Building or the Metlife Tower, so they are not included in the table. However, LC provides evidence that the Tribune Building was quite profitable.

- World (Pulitzer) Building (1890): LC, DF

Total costs published as \$1 million. Land costs assumed \$125 per square foot. Total cost: \$2.5 million. For average rent, I assumed \$2 per square foot, based on historical rents discussed in *New York Times*.

“Not as High as ‘The Times’ Building.” *New York Times*, Jun 1, 1889.

- Manhattan Life Building (1894): LD, DF

“MANHATTAN LIFE SELLS 66 BROADWAY: TWENTY-FIVE STORY BUILDING FOR YEARS A LANDMARK IN THE FINANCIAL DISTRICT. \$4,500,000 HAD BEEN ASKED INSURANCE COMPANY LATER MAY SEEK A NEW HOME UPTOWN – PROPERTY BOUGHT BY FREDERICK BROWN.” (1926, Feb 18). *New York Times*

“IN AND ABOUT THE CITY: A FOURTEEN-STORY BUILDING. THE MANHATTAN LIFE INSURANCE COMPANY TO HAVE NEW QUARTERS.” (1892, Feb 26). *New York Times*

“ARCHITECTS TO COMPETE.: PROPOSED BUILDING FOR THE MANHATTAN LIFE INSURANCE COMPANY.” (1892, May 15). *New York Times*

- Park Row Building (1899): LC, DF.

Rent was assumed at \$2 per square foot, which was about average for buildings in Lower Manhattan at the time, based on *New York Times* and *Wall Street Journal* articles

“\$4,100,000 FOR A SKY SCRAPER.: THE PARK ROW BUILDING TRANSFERRED TO THE PARK ROW REALTY COMPANY.” (1901, Apr 12). *New York Times*

- Singer Building (1908): LC, JK

<https://www.nytimes.com/1906/03/04/archives/dollarsandcents-side-of-fortystory-tower-gigantic-structure-to-be.html>

<http://daytoninmanhattan.blogspot.com/2013/09/the-lost-1908-singer-building-no-149.html>

<https://digitalcollections.nypl.org/items/66385c70-1fe4-0132-851f-58d385a7bbd0>

<http://academic.brooklyn.cuny.edu/history/burrows/NYC/Documents/Fenske.htm>

- Woolworth Building (1913): GF

https://rerecord.library.columbia.edu/document.php?vol=ldpd_7031148_051&page=ldpd_7031148_051_00001035&no=4

- Bank of Manhattan (1930): JK

Rent of \$4.75 is assumed. This was what the Equitable Building was earning per square foot in 1930.

Cost is also in HRH Construction Cost book housed at the Skyscraper Museum.

“Plan tallest skyscraper.” (1929, Apr 10). *Wall Street Journal*

- Chrysler (1930)

Rents assumed same as in CK.

“Work is started on Chrysler building corp. 32-story structure: Chrysler building east will be next to 77-story skyscraper; cost put at \$10 million.” (1950, Jun 20). *Wall Street Journal*

Plan tallest skyscraper. (1929, Apr 10). *Wall Street Journal*

- Empire State Building (1931).

See Barr (2020). <https://buildingtheskyline.org/empire-state-building-economics/>

- One Vanderbilt (2020)

<https://therealdeal.com/new-research/topics/property/1-bryant-park/>

<https://therealdeal.com/2017/01/27/sl-green-expects-office-tower-one-vanderbilt-to-make-almost-200m-per-year/>

<https://nypost.com/2020/09/13/one-vanderbilt-skyscraper-in-midtown-opens-to-office-tenants-monday/>

III. Books Referenced

(CK) Clark, W.C. and Kingston, J.L., 1930. *The Skyscraper: Study in the Economic Height of Modern Office Buildings*. American Institute of Steel.

(DF) Friedman, Donald (DF). 2014. *Structure in skyscrapers: History and preservation*.

(GF) Fenske, G., 2008. *The skyscraper and the city: the Woolworth Building and the making of modern New York*. University of Chicago Press.

(LC) Landau, S.B. and Condit, C.W., 1999. *Rise of the New York Skyscraper, 1865-1913*. Yale University Press.

(JK) Korom, J.J., 2008. *The American skyscraper, 1850-1940: a celebration of height*. Branden books.

IV. Data Tables

Building	Year	FAR	Gross Building Area (ft ²)	Net Rentable Area (ft ²)	Lot size (ft ²)	Height (meters)	Floors
World (Pulitzer) Building	1890	17.5	341,297	273,038	15640	94	10
Manhattan Life	1892	19.4	188,119	150,495	7750	106	18
Park Row	1899	26.2	417,933	336,447	12850	119	31
Singer	1908	15.1	495,384	412,820	27301	187	47
Woolworth	1913	33.4	1,299,990	981,744	29411		55
Chrysler	1930	27.6	1,196,958	1,035,307	37525	319	77
Empire State	1931	22.8	2,812,739	2,080,000	91351	381	102
One Vanderbilt	2020	38.3	1,750,212	1,688,660	44048	397	58

Building	Year	Building Cost (\$)	Land Cost (\$)	Total Cost (\$)	Total Cost Per Square Foot (\$)	Total Income (\$)	Average Expected Rent (\$ ft ²)	Ratio	ROI
World (Pulitzer) Building	1890	1,000,000	1,955,000	2,955,000	8.66	546,075	2.00	23.1	8.3%
Manhattan Life	1892	950,000	1,100,000	2,050,000	10.90	300,990	2.00	18.4	6.6%
Park Row	1899	2,750,000	1,350,000	4,100,000	9.81	672,894	2.00	20.4	7.4%
Singer	1908	1,500,000	2,730,100	4,230,100	8.54	980,448	2.38	27.8	10.4%
Woolworth	1913			13,500,000	10.38	2,258,011	2.30	22.1	7.5%
Chrysler	1930			20,000,000	16.71	3,944,520	3.81	22.8	8.9%
Empire State	1931			47,000,000	16.71	7,000,000	3.36	20.1	6.7%
One Vanderbilt	2020			3,300,000,000	1885.49	300,000,000	177.60	9.4	4.1%