

Solving the Office to Residential Conversion Puzzle

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With almost a quarter of Hartford's available office space lying fallow¹ as the city's residential vacancy rate hovers near two percent,² shrinking office footprints suggest an obvious solution to the capital region's housing shortage. While the Capital Region Development Authority (CRDA) and state agencies work with real estate developers to turn the office glut into housing opportunity, an examination of office to residential conversion feasibility illustrates the complexity of achieving the office to residential space balance that can make the long-held vision of Hartford as a vibrant 24-hour city a reality. Examples from Philadelphia (1600 Arch Street) and Manhattan (180 Water Street) illustrate the challenges and opportunities for converting office space into desirable dwelling units.

A building envelope's shape, along with the placement of its structural columns, elevator shafts, and stairwells, constitutes the geometry within which an apartment's living, sleeping, and workspace areas are laid out.

Developers, architects, and designers must solve for the adequacy of light and air movement that make a dwelling unit livable. The building's location and proximity to public amenities completes the value proposition of conversion versus demolition and new construction.

Illustrative examples from Philadelphia and New York City offer insight and clarity toward understanding the potential of conversion compared to new construction that turns on the consideration of how office space has evolved to make older buildings more economical to convert. The design logic of early 20th century office layouts tracks with that of apartments needing windows that open for ventilation and cooling sited no farther than 30 feet from the common corridor. The series of private-eye suites—frosted glass doors, a secretary's space framed by interior transom windows, and the private office flooded with natural light, the classic example of which is seen in any film noir—comprises the floor plan for 1600 Arch Street in

Philadelphia (Illustration 1). A row of these suites along both sides of a corridor with a shared elevator, lobby, and shared bathrooms form the narrow rectangular boxes typical of older office buildings. These buildings' floor plans and shapes translate well to apartments. The proliferation of modern office buildings with large open spaces that can be reconfigured has caused the value of private-eye suite buildings as offices to fall low enough that they may now command higher rents as one- or two-bedroom apartments ranging from 475 to 940 square feet (Illustration 2).

Further complexity and expense were introduced to residential conversion as fluorescent lighting and air conditioning enabled office building floor plates to become much deeper. The availability of 25,000 square-foot floors (Illustration 3) for libraries, cubicle arrays, expansive executive suites, and open floor plans caused office building shapes to morph from the familiar rectangular and alphabet shapes (O, C, H, U as seen from above) to expanding recti- and curvilinear behemoths. Mid-floor windowless meeting rooms and supply closets are not suitable for apartment living. These conversion challenges are seen in lower Manhattan's 180 Water Street.

Carving living spaces that require natural light out of 180 Water Street's floor plates that measure 70 feet from the reception area to the building's core was a particular challenge. Following replacement of the exterior glass curtain walls, the architect's solution was to cut a 1,200 square foot courtyard from 23 floors as can be seen in Illustration 4 (the courtyard is off-center to minimize disturbance to structural columns, thus giving the building a boxy O shape). In the converted units, an awkward interior becomes a windowless home office. An old elevator shaft became a trash chute. The corridor is the exact length needed to ensure no apartment front door is more than 40 feet from a stairwell. The result: 82 percent of the square footage on

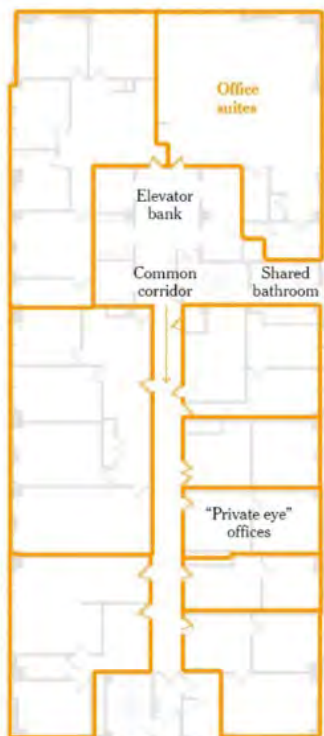


Illustration 1: 1600 Arch Street, Philadelphia, PA as Office Suites



Illustration 2: 1600 Arch Street, Philadelphia, PA as Residences

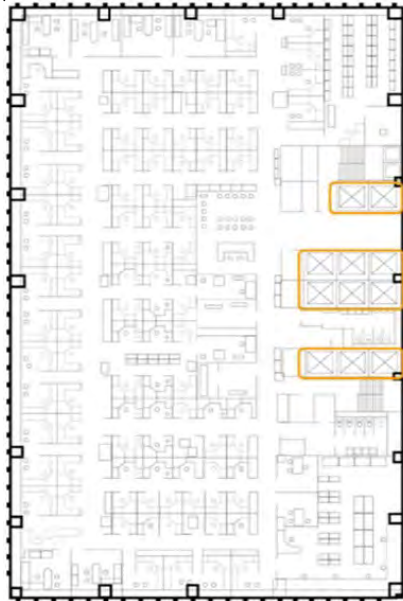


Illustration 3: 180 Water Street as Office Space

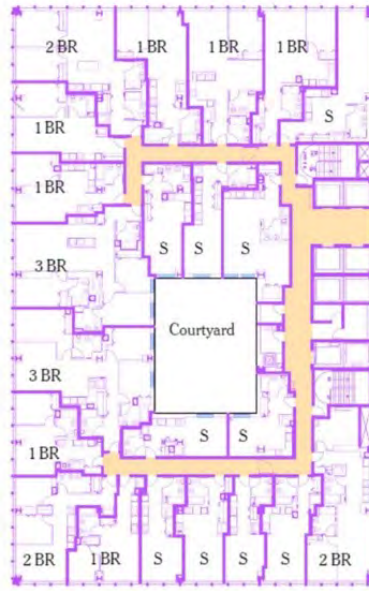


Illustration 4: 180 Water Street as Apartments

each floor is rentable space. Conversion of this building without a public subsidy meant that rents ranged from \$3,500 to \$7,000 per month in 2014 dollars.

As the coronavirus pandemic recedes, its effects on commercial

and residential real estate will play out in both predictable and unexpected ways. Increased telework has reduced the demand for office space while housing

demand has only increased. While conversion of all that unused office space into places to live presents itself as an obvious solution to the housing shortage, the change brings with it complications that will require innovative and sometimes costly solutions. Partnership among public officials and their agencies together with private sector players in real estate will be needed to take on these challenges that will lead to remaking our cities and towns into balanced centers of living, working, and recreational spaces. ■

1 From Marketbeat, a quarterly publication that provides analysis of economic and real estate activity, produced by real estate services firm Cushman and Wakefield. <https://www.cushmanwakefield.com/en/united-states/insights/us-marketbeats/hartford-marketbeats>
 2 Connecticut Housing Financing Authority 2016-2025 review and projection. <https://www.chfa.org/the-intersect/housing-market-rundown-q1-2022/>

GENERAL ECONOMIC INDICATORS

(Seasonally adjusted)	1Q	1Q	YoY CHG		4Q	QoQ CHG	
	2023	2022	NO.	%	2022	NO.	%
General Drift Indicator (2007=100)*							
Leading	114.6	109.9	4.7	4.3	112.9	1.8	1.57
Coincident	96.6	97.1	-0.5	-0.5	96.5	0.1	0.12
Real Gross Domestic Product** (Millions of chained 2012 dollars)	1Q	1Q	YoY CHG		4Q	QoQ CHG	
Connecticut	2023	2022	NO.	%	2022	NO.	%
United States			0	####		0	####
New England			0	####		0	####
Per Capita Personal Income** (Current \$, SAAR)	1Q	1Q	YoY CHG		4Q	QoQ CHG	
Connecticut	2023	2022	NO.	%	2022	NO.	%
United States			0	####		0	####
New England			0	####		0	####
Philadelphia Fed's Coincident Index (2007=100)***	May	May	YoY CHG		Apr	MoM CHG	
Connecticut	2023	2022	NO.	%	2023	NO.	%
United States	124.18	120.57	3.61	3.0	123.68	0.50	0.4
	138.07	133.21	4.86	3.7	137.88	0.19	0.1

Sources: *Dr. Steven P. Lanza, University of Connecticut, <https://steven-landa.uconn.edu/the-connecticut-green-sheet/>

U.S. Bureau of Economic Analysis *Federal Reserve Bank of Philadelphia

General Drift Indicators are composite measures of the four-quarter change in three coincident (Connecticut Manufacturing Production Index, nonfarm employment, and real personal income) and three leading (housing permits, manufacturing average weekly hours, and initial unemployment claims) economic variables, and are indexed so 2007 = 100.

The **Philadelphia Fed's Coincident Index** summarizes current economic condition by using four coincident variables: nonfarm payroll employment, average hours worked in manufacturing, the unemployment rate, and wage and salary disbursements deflated by the consumer price index (U.S. city average).