
FLEXIBLE CO-LIVING HOUSING FEASIBILITY STUDY



Washington, D.C.

Study done in collaboration with Gensler and The Pew Charitable Trusts. Funding for this research was provided by Arnold Ventures and The Pew Charitable Trusts.

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Defining the Problem: Increasing the supply of low-cost housing

Cities across the United States are grappling with a long-term housing affordability crisis. Rising housing costs and a chronic undersupply of affordable housing impact the livelihoods of residents, with significant office inventories remaining vacant and unused. These trends have become more pronounced in the aftermath of the Covid-19 pandemic.

Housing Affordability and Availability

Nationwide, the median rent was \$1,370 in January 2025, an increase of 19% in just the four years since January 2021.¹ Further, rent growth has often outpaced wage growth in recent years, worsening affordability. Experts point to chronic undersupply as one of the primary drivers of rising rents. Current regulatory frameworks, policies, and construction typologies are unable to deliver affordable and accessible housing near jobs, transit, and other socioeconomic drivers of economic opportunity, further contributing to increased costs of existing housing as renters compete for limited supply. The number of lower-income renters continues to rise, resulting in renters increasingly priced out of local housing markets.²

Housing Insecurity and Homelessness

With chronic undersupply of housing, and especially low-cost housing, the United States faces housing insecurity and homelessness. In 2024, HUD reported a record 770,000 people experiencing homelessness, an 18% increase from the year prior.³ Research indicates that homelessness rates are highest in cities with the highest rents, and that homelessness rises when rents rise.⁴

Vacant Office Stock

While the nation experiences a housing shortage, office occupancy continues to fall as the commercial real estate market responds to declining office demand due to long-term trends and post-Covid demand shifts. Moody's has found the office vacancy rate hit a record-high 20% in 2024 as office tenants continued to use less space.⁵ Rising office vacancies threaten the vitality of central business districts and their continued impact on municipal revenue generation, as cities have long relied significantly on commercial property taxes to fund local budgets.

¹ Apartment List National Rent Report <https://www.apartmentlist.com/research/national-rent-data>

² NLIHC Releases The Gap 2023: A Shortage of Affordable Homes <https://nlihc.org/news/nlihc-releases-gap-2023-shortage-affordable-homes>

³ HUD January 2024 Point-in-Time Count Report https://www.hud.gov/press/press_releases_media_advisories/HUD_No_24_327

⁴ How Housing Costs Drive Levels of Homelessness <https://www.pewtrusts.org/en/research-and-analysis/articles/2023/08/22/how-housing-costs-drive-levels-of-homelessness>

⁵ Moody's Office Vacancy Report <https://www.moody.com/web/en/us/about/insights/data-stories/us-commercial-real-estate-vacancies-downtown-vs-suburbs.html>

Re-Introducing Low-Cost Housing Typologies

The misalignment of housing costs and the housing budgets of renters is worsening, with a record 50% of renters cost-burdened, meaning they spend more than 30% of income on rent.¹ In many cases this is exacerbated by regulatory frameworks that encourage and prioritize construction of market-rate housing that is higher-cost and beyond the means of most renters.

In the mid-20th century, most cities in the U.S. were characterized by an abundance of lower-cost housing typologies, particularly single-room occupancy (SRO) dwellings. Starting in the 1950s, restrictive zoning and building codes and financial incentives resulted in the elimination of SRO's as an affordable housing alternative. Between the 1970s and the 1990s alone, it is estimated that the United States lost one million SRO units to conversions and demolitions.²

Through regulatory reform and the reintroduction of lower-cost residential typologies, the supply of lower-cost housing can be increased to meet the current needs of renters.

Expanding the Office-to-Residential Conversion Potential

Central to this solution is the potential for leveraging vacant office stock in cities' central business districts, which are already located in transit-accessible and job- and amenity-rich locations. Many of these vacant or underutilized office buildings are being assessed for their potential conversion to housing across the U.S.

Gensler analysis suggests a notable subset of existing office stock is potentially suitable for conversion into market-rate housing.³ However, many buildings are not economically viable candidates due to configurations that appeal to office tenants, but are incompatible with traditional residential layouts. Large floor plates with little interior natural light, inoperable windows, and the high costs of plumbing and mechanical retrofits all challenge the design and economic feasibility of conversion, particularly under current regulatory frameworks in most cities.

The reintroduction of flexible co-living residential typologies has the potential to:

- 1) reduce the costs of additional residential inventory,
- 2) increase the supply of available housing to lower-income renters, and
- 3) alleviate some of the negative impacts of long-term demand changes for office properties.



¹New Report Shows Rent Is Unaffordable for Half of Renters as Cost Burdens Surge to Record Levels <https://www.jchs.harvard.edu/press-releases/new-report-shows-rent-unaffordable-half-renters-cost-burdens-surge-record-levels>

²The Rise and Fall of the American SRO <https://www.bloomberg.com/news/articles/2018-02-22/the-rise-and-fall-of-the-american-sro>

³What We've Learned by Assessing More Than 1,300 Potential Office-to-Residential Conversions <https://www.gensler.com/blog/what-we-learned-assessing-office-to-residential-conversions>

Washington, D.C.: Existing Conditions, Regulatory Overview, and Building Stock

The State of Housing in Washington, D.C.

Washington, D.C. is a high-cost city that has seen rent growth exceed household growth in recent years. According to Apartment List data, between 2019 and 2024, the overall median rent in Washington, D.C. increased by 4%, exceeding the household growth rate of 3% for the same period. Median rent citywide is \$2,155 per month as of January 2025.

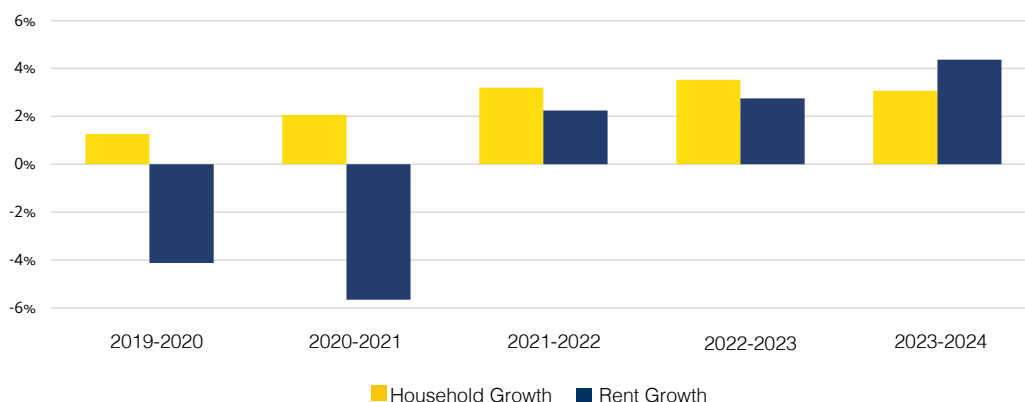
There are an estimated 5,620 individuals experiencing homelessness in Washington, D.C., for a rate of 83 per 10,000 inhabitants.¹ Additionally, downtown office vacancy rates average 20% as of Q4 2024.²

The Opportunity

The opportunity to introduce affordable co-living housing in Washington, D.C. is promising: There are no significant local regulatory barriers that often prohibit flexible co-living residential typologies, and similar co-living models have proved successful in the city in the past decade. Initial conversations suggest that there is notable local political will to encourage new housing typologies, along with other solutions to address housing unaffordability, rising homelessness and housing insecurity.

Several local programs that support these goals are already underway or in development, and can be leveraged to enhance the viability of this housing model.

Household and Rent Growth (Cumulative)



2019-2024:

HOUSEHOLDS:
+3%

RENT:
+4%

¹ HUD January 2024 Point-in-Time Count Report https://www.hud.gov/press/press_releases_media_advisories/HUD_No_24_327

² Colliers Downtown Commercial Vacancy Rate Q4 2024 <https://www.colliers.com/en/research/washington-dc/washington-dc-office-report-q4-2024>

Chart Data Sources: Apartment List National Rent Report <https://www.apartmentlist.com/research/national-rent-data>, Esri Business Analyst

Washington, D.C. at a glance:



**MEDIAN
RENT**

\$2,155



**HOMELESSNESS
RATE**

83 per 10k



**DOWNTOWN
OFFICE
VACANCY**

20%



**REGULATORY
BARRIERS**

LOW

Washington, D.C. Building Code

The District of Columbia uses a locally adapted version of the International Building Code (IBC), enhanced with local amendments by the District of Columbia Municipal Regulations (DCMR). The current 2017 DC Building Codes are based on IBC 2015 with Amendments.

Under the DC Building Codes, congregate living facilities of a non-transient nature (exceeding 30 days) with more than 16 occupants fall under Residential Group R-2. Congregate living facilities may be comprised of individual sleeping units that do not include permanent provisions for eating, cooking, and sanitation.

Projects must also comply with the International Property Maintenance Code, which stipulates additional light and ventilation requirements in habitable spaces. Sleeping units must have access to natural light but can rely on mechanical ventilation.

Green Building Requirements

Projects are also subject to the 2017 DC Green Construction Code, which establishes high-performance green building standards for all public and applicable private construction projects (except residential buildings under 10,000 square feet). Standards vary by project type and location but include provisions related to material resource, energy, and water conservation.

Zoning

The area of Washington, D.C. studied is in a Central Washington D-Zone Area (D7). This is among the highest-density commercial development zones and permits residential uses.

In late 2020, the DC Office of Planning assessed the District's real estate market to evaluate the potential for conversion of commercial office and hotel properties to housing. The assessment identified zoning incentives available in the D-Zone Area for conversions:

- Pursuant to 11 DCMR G-201.1, for a building or structure in existence with a valid Certificate of Occupancy prior to November 17, 1978, or for which an application for a building permit was filed prior to November 17, 1978, a conversion of non-residential GFA to residential GFA, even if in excess of otherwise permitted floor area ratio (FAR), shall be permitted. The Zoning Administrator has interpreted this section to allow a break on excess lot occupancy as well.
- A Proposed Text Amendment would codify current Zoning Administrator interpretation of G-201.1 to allow existing legally non-residential buildings to convert to residential use even if the building does not comply with some or all of the residential development standards.

Inclusionary Zoning Requirements

The DC Department of Housing and Community Development administers the District's Inclusionary Zoning (IZ) Program, which requires that 8% to 10% of the residential floor area of a residential development be set-aside for affordable units. Units must be affordable to households making between 50% to 80% of the area median income (AMI), locally referred as the median family income (MFI), depending on the location of the project and other development factors. Projects may also be able to obtain a zoning density bonus in exchange for the provision of the affordable units, including within the D-Zone. The Program applies to:

1. new residential development projects of 10 or more units; and
2. rehabilitation projects that are creating 10 or more units in an existing building or addition.

It is expected that this project would not have an issue achieving this, given the goal of the study, because all units are anticipated to be affordable to those earning under 50% AMI.

Other Local Programs and Incentives

The Office of the Deputy Mayor's HID (Housing in Downtown) initiative was established in 2024 to incentivize the conversion of commercial properties to residential use in Central Washington, D.C., with an emphasis on the Central Business District, with the goal of adding 15,000 new downtown residents by 2028. The program aims to catalyze residential development by offering a 20-year residential property tax abatement to eligible projects.

The co-living model studied may be eligible for additional local housing incentives available for the production of single-room-occupancy housing for low- and moderate-income tenants. Incentives may include 10-year residential tax abatements and deferral or forgiveness of water and sewer fees. The incentives

are available for new construction, renovation of any vacant rental housing accommodation, or renovation of any non-housing property, including commercial properties.

To qualify for the incentives, the housing provided must meet the following minimum standards:

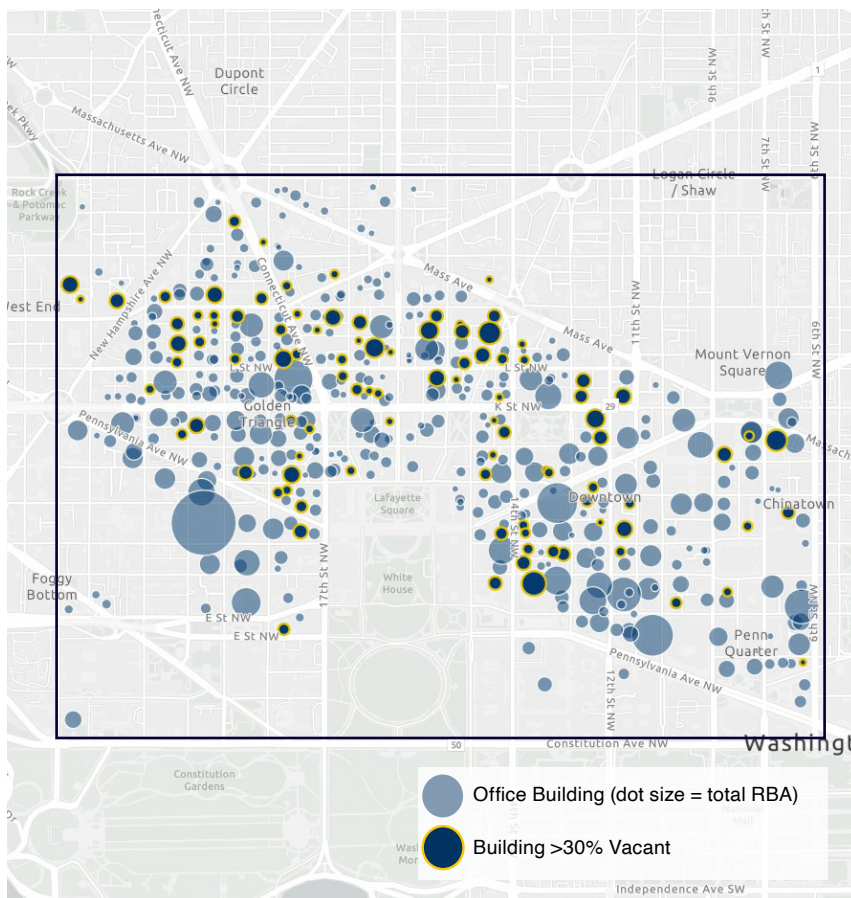
- Rental rates are affordable for low- and moderate-income tenants and reflect costs offset by the tax abatements and deferral or forgiveness of indebtedness to the District provided pursuant to this section;
- The location is in compliance with the Zoning Regulations of the District of Columbia;
- Each rental unit includes no less than 95 square feet of space, and a clothing storage unit;
- Toilet and shower or bathing facilities are provided on each floor where tenants reside, in a reasonable size to meet the needs of the tenants residing on that floor;
- A common-space day room, kitchen, and laundry facilities sufficient to meet the needs of all tenants at 100% occupancy are provided;
- A 24-hour security system, either manual or electronic, is provided; and
- The housing accommodation has a resident manager who resides on the premises.

The Washington, D.C. Central Business District

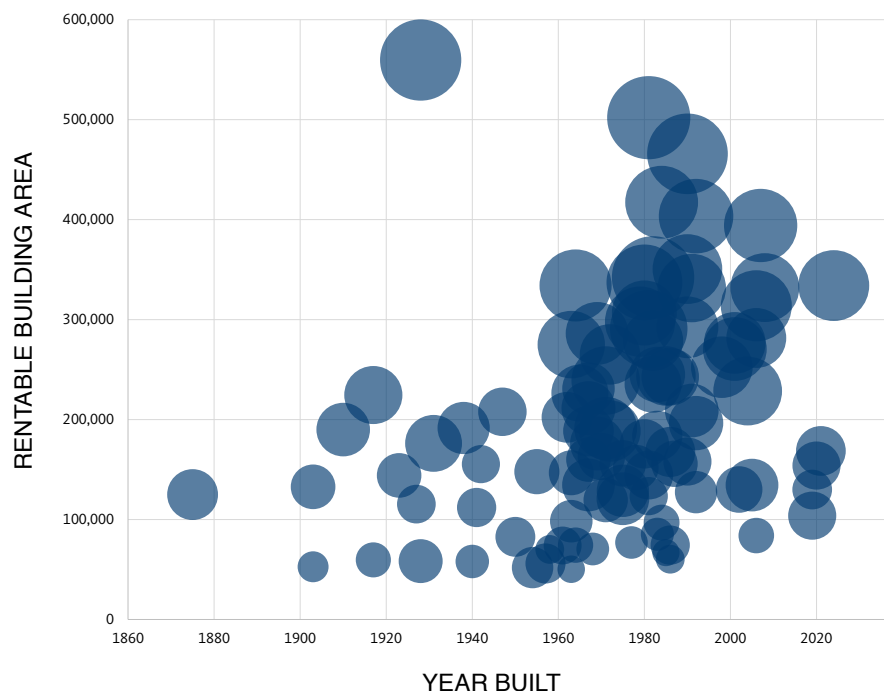
Washington, D.C. lacks a singular central business district, with office space distributed across the larger area commonly understood as Downtown D.C. Due to height limitations, the office stock consists mostly of smaller, midrise buildings. According to data from CoStar as of Q4 2024, there are approximately 470 office buildings over 50,000 SF in the Downtown D.C. area, comprising about 110 million square feet. An estimated 97 office buildings within the boundary are at least 30% vacant.

D.C. has a notable inventory of pre-1940s, masonry buildings, many of which have historic significance. The majority of D.C. office space, however, is newer, constructed in the 1950s through the 1980s. This building stock is relatively homogeneous; properties are typically between 100,000 SF and 400,000 SF with similar floor plate sizes, largely driven by zoning and height limitations in the city of Washington, D.C.

Downtown D.C.



Downtown Office Stock (>30% Vacant)



● = Average Floor Plate Size

Chart and Map Data Source: CoStar



>30% VACANT PROPERTIES	TYPE 1	TYPE 2	TYPE 3	TYPE 4
% of Building Stock	10-15% of total SF	~20% of total SF	~50% of total SF	15-20% of total SF
Age	Pre-1945	1950s-1960s	1970s-1980s	2000+
Average Number of Floors	10	11	11	11
Average Floor Area Ratio (FAR)	9	9	9	8
Average Floorplate	14,000 SF	14,000 SF	20,000 SF	21,000 SF
Average Vacancy Rate	39%	50%	47%	50%
			DOMINANT TYPOLOGY	

Office Typologies

There are 97 buildings in the Downtown, D.C. boundary reported to have a vacancy rate of at least 30%. These buildings have been identified, analyzed, and grouped to define prototypical typologies.

The city's office stock with at least 30% vacancy can be categorized into four primary typologies, as described below, based on attributes such as height, floor plate size, style and year built. These factors, along with other physical attributes such as building depth and window configuration, impact their potential for conversion to traditional, market-rate residential products.

There are four typologies of properties experiencing 30%+ vacancy downtown:

Type 1: Historic buildings built prior to the WWII-era (pre-1945). These buildings are an average of 10 stories tall with an average floor plate size of 14,000 SF. These buildings have the lowest average vacancy

rate among typologies studied (39%) and comprise only 10-15% of the selected inventory.

Type 2: Type 2 buildings are built in the 1950s and 1960s and similarly sized, though with a higher average vacancy rate of about 50%. Type 2 buildings are about 20% of the selected inventory.

Type 3: The typology with the largest inventory, Type 3 buildings were built in the 1970s and 1980s and comprise about half of all inventory. While a similar height, Type 3 buildings have a larger average floor plate at 20,000 SF. **Type 3 was selected as the prototype for testing possible conversion feasibility.**

Type 4: Type 4 buildings are very similar to Type 3 in terms of size and dimensions, but are built more recently from 2000-onwards. These building have more modern glass curtain walls compared to Type 3. Together, Type 4 buildings consist of about 15-20% of the selected inventory.

Flexible Co-Living: Defining the Product

Program and Unit Module

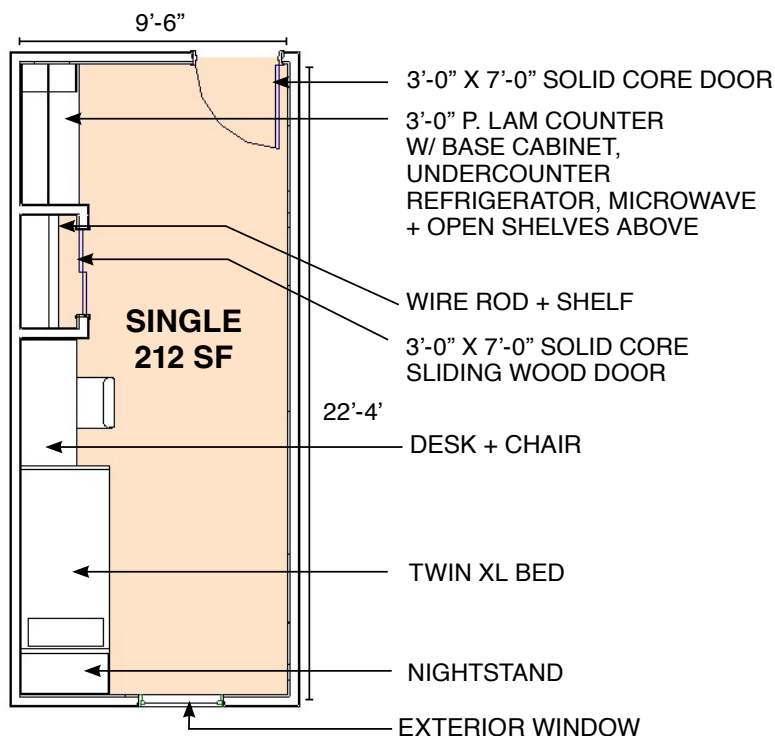
A program and unit module were developed to align with the project's goals and conform to Washington, D.C.'s building code.

A typical single-occupant sleeping room consists of a private room between 177 SF and 212 SF. In-room furnishings would include a twin XL bed, desk and chair, and nightstand along with a microwave and standard-depth half-sized refrigerator to store personal food and beverage items. A storage shelf and cabinet can be used to store personal belongings.

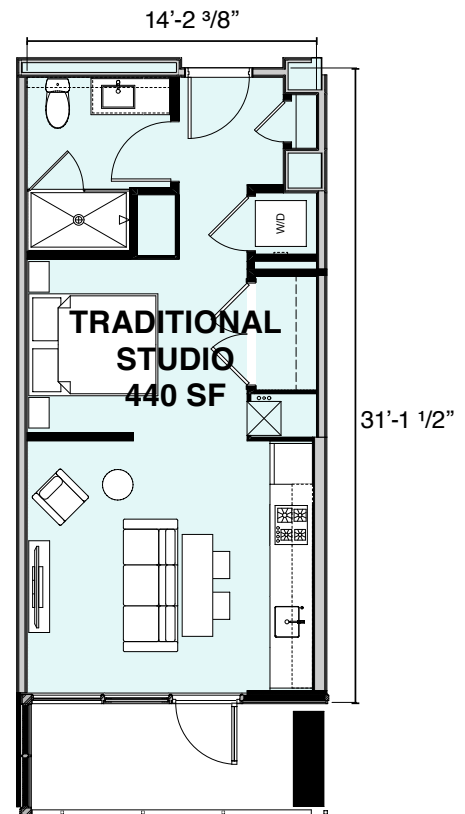
Each sleeping room is secured via a solid core wood door that can be locked by its occupant. Demising walls between sleeping rooms are designed with specifications to ensure the appropriate sound insulation.

To provide additional choice, the floor plan can also accommodate double units between 341 SF and 404 SF each.

A traditional studio layout of approximately 440 SF is shown as a point of comparison, which includes a full kitchen and bathroom in-unit.



Unit Module



Traditional Studio Layout

Test Fits and Yields

Shared Facilities and Amenity Spaces

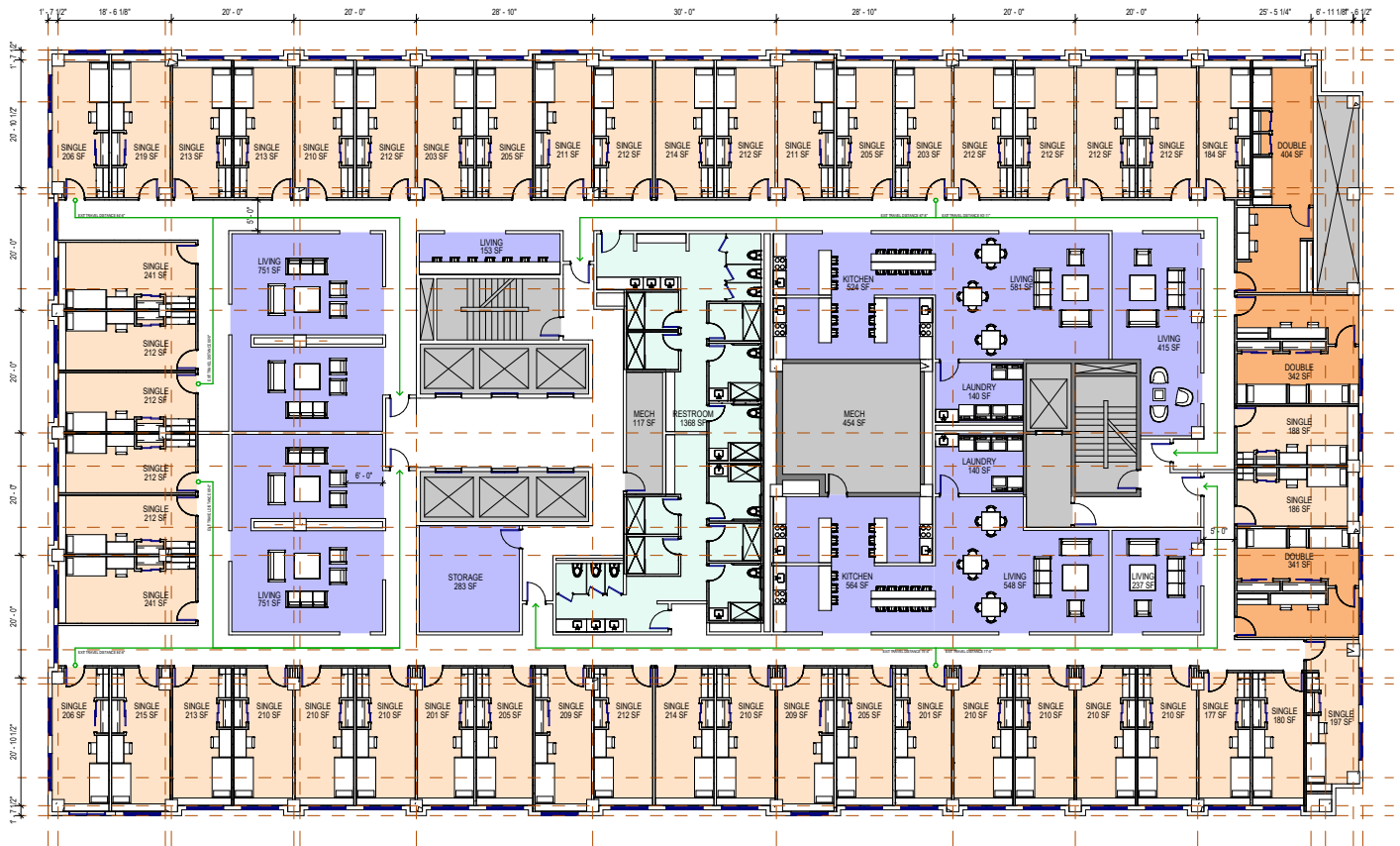
The following shared facilities are provided on each residential floor. The quantities of specific fixtures are driven by required ratios per occupant as defined by building code:

- **Kitchens:** Six shared kitchen areas are included on each floor. Each kitchen area includes standard fixtures and appliances including a sink, electric range/oven, range hood, and microwave. In lieu of a refrigerator in the kitchen area, tenants have access to their individual half-sized refrigerator located in their dwelling unit. There are no code minimums for number of occupants per kitchen facility.
- **Living Room:** There are six larger shared living areas per floor, accommodating a variety of seating areas including couches and tables, in addition to one smaller living area that functions as a more private desk space and working area.
- **Bathrooms:** Bathroom facilities are shared in the interior of the floor utilizing existing plumbing stacks from the office core. Two centralized bathroom facilities per floor each include five single-stall shower rooms plus five toilets and five sinks. Some of the sinks and toilets are located within the shower rooms, while others are arranged in a restroom configuration separate from the shower areas.
- **Laundry:** Two laundry rooms per floor accommodate three washers and three dryers each.
- **Storage:** A 283 SF central storage facility on each floor can accommodate lockers and other storage spaces.

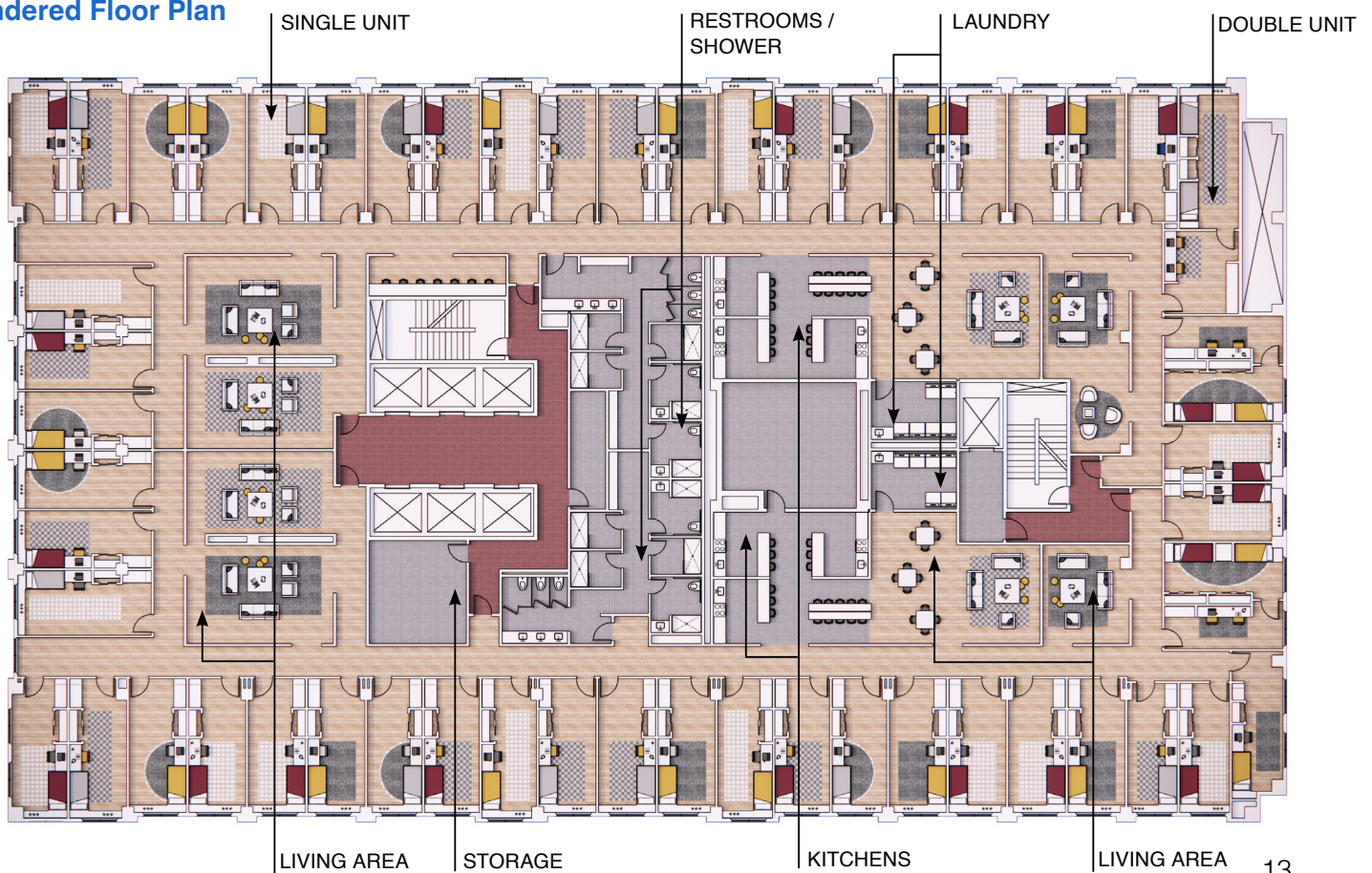
Typical Unit Rendering



Typical Floor Test Fit



Rendered Floor Plan



Yields per Floor

The prototypical building studied has a floor area of 26,445 SF. Each floor can accommodate 56 beds across 11,496 SF of area. To offer a variety of unit options, 50 of the beds are within typical single units, while the remaining six beds are within three double units per floor. An additional 6,455 SF of floor area is dedicated to shared facilities, including bathrooms, kitchens, and living areas. The remaining square footage consists of circulation, mechanical areas, and the building’s core.

To address the larger floor plate, the floor has been divided such that occupants can only access the half of the floor that contains their sleeping unit, thus creating two separate communities. Each community has access to the same quantity of shared facilities and amenity spaces.

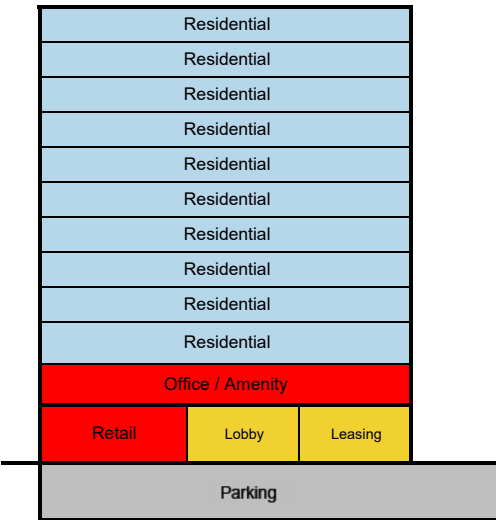
This yield produces a residential efficiency ratio of 68%. The remaining 32% of the gross floor area is comprised of the building’s core and interior circulation.

The ratios of shared facilities/fixtures per occupant conform with Washington, D.C.’s building code regulations.

Building Summary

The prototypical building studied is twelve stories. The ground floor would consist of a main lobby, a management office, and approximately 10,000 SF of retail space. The second floor contains approximately 10,000 SF of Class B office space plus 7,500 SF of building-level shared amenities, including a fitness center. Parking for 324 cars and 500 bikes is included in the basement level. Floors 2-12 are dedicated for residential use, and each floor would have an identical layout.

With 10 residential floors and 56 beds per floor, the building can yield a total occupancy of 560 residents across 530 units.



STATISTICS	
Residential Area	11,496 SF per floor
Interior Amenity	6,455 SF per floor
Gross Floor Area	26,445 SF per floor
Efficiency	68%
Occupants	56 (50 single units, 3 double units)
	320 GSF per occupant
Toilets	10 (5.6 occupants per fixture)
Showers	10 (5.6 occupants per fixture)
Sinks	18 (3.1 occupants per fixture)
Kitchens	6 (9.3 occupants per fixture)
Washer/Dryers	6 (9.3 occupants per fixture)

Building Summary

	Levels	Floor to Floor	OA Height	Units	Parking Spaces	Bikes	Bike Room	Storage	B.O.H Services/ Mech	Common Area	Leasing/ Lobby	Interior Amenity	Retail / Office	Net Rentable Unit Area per Floor	Gross SF per Floor	EFF / Flr	Avg Unit Size
			125.00				SF	SF	SF	SF	SF	SF		SF	SF		SF
Residential	12	11.00	125.00	53				283	1,848	6,363		6,455		11,496	26,445	67.9%	217
Residential	11	11.00	114.00	53				283	1,848	6,363		6,455		11,496	26,445	67.9%	217
Residential	10	11.00	103.00	53				283	1,848	6,363		6,455		11,496	26,445	67.9%	217
Residential	9	11.00	92.00	53				283	1,848	6,363		6,455		11,496	26,445	67.9%	217
Residential	8	11.00	81.00	53				283	1,848	6,363		6,455		11,496	26,445	67.9%	217
Residential	7	11.00	70.00	53				283	1,848	6,363		6,455		11,496	26,445	67.9%	217
Residential	6	11.00	59.00	53				283	1,848	6,363		6,455		11,496	26,445	67.9%	217
Residential	5	11.00	48.00	53				283	1,848	6,363		6,455		11,496	26,445	67.9%	217
Residential	4	11.00	37.00	53				283	1,848	6,363		6,455		11,496	26,445	67.9%	217
Residential	3	11.00	26.00	53				283	1,848	6,363		6,455		11,496	26,445	67.9%	217
Amenity Floor	2	11.00	15.00	0					1,848	7,097		7,500	10,000		26,445		
Ground Floor	1	15.00	0.00	0	0	500	5,000		1,848	7,097	2,500		10,000		26,445		
Basement	B	11.00			324												
	Floors			Units	Parking Spaces	Bikes	Bike Room	Storage	B.O.H Services/ Mech	Common Area	Leasing/ Lobby	Interior Amenity	Commercial	Net Rentable Unit Area	GSF		Avg Unit Size
Totals	12		125.00	530	324	500	5,000	2,830	22,176	77,824	2,500	72,050	20,000	114,960	317,340		217

Meeting the Market: Rents and Users

Quantifying the Market for Flexible Co-Living

Initial market research suggests that there is a sizable potential market for the flexible co-living concept.

According to the American Community Survey, 61% of Washington, D.C.'s 335,000 households are renters. Of these 204,000 households, 56% are single-occupant, and only 8% are comprised of four people or more.

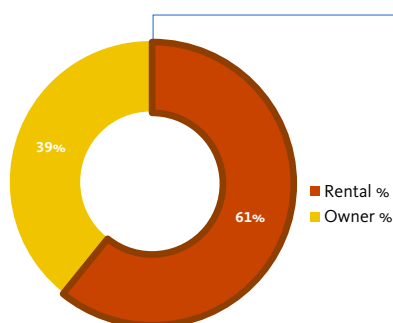
Washington, D.C.'s single-occupant renters have incomes that are skewed towards the highest and lowest ends of the income spectrum. Approximately 30% of this group earn less than \$30,000 per year, while 28% earn \$100,000 a year or more. An additional 13,000 individuals, or 12% of the total, earn between \$30,000 and \$50,000 per year.

24% of Washington, D.C. renters are considered severely cost-burdened, meaning they pay more than 50% of their income for rent. 47%, or almost half, spend more than 30% of income on rent.¹

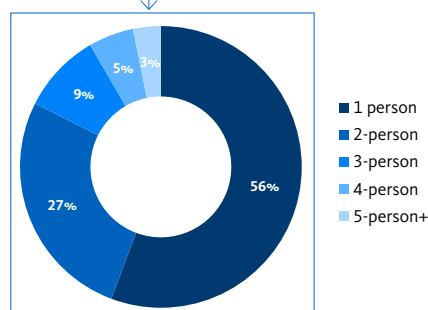
The quantity of single-person renter households earning less than \$50,000 per year, or approximately 45% of the Area Median Income (AMI), suggests a sizable market for the flexible co-living typology. The single-occupant model offers a more affordable product that aligns with renters' incomes and housing budgets.

There are 204,000 renter households in Washington, D.C. and about 56% (114,000) of them are single-occupant.

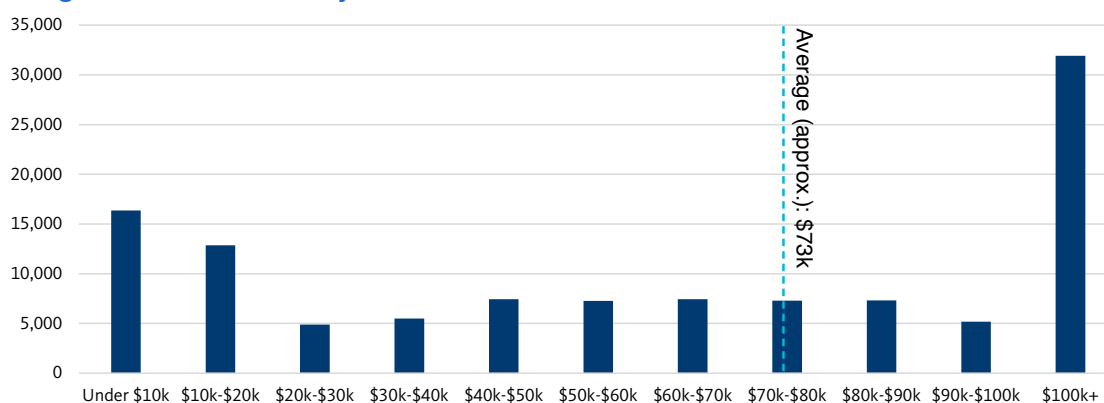
Household Type



Renters by Household Size



Single-Person Renters by Household Income



¹ The State of the Nation's Housing 2024, Harvard Joint Center on Housing Studies <https://www.jchs.harvard.edu/state-nations-housing-2024>
Source: American Community Survey Public Use Microdata Sample (PUMS) 2023 1-Year Estimates.

Potential Rents

Based on the distribution of single-person renter households in Washington, D.C., there are approximately 13,000 individuals who earn between \$30,000 and \$50,000 per year.

HUD standards define a monthly housing budget as 30% of monthly income. Within this income bracket, households have a supportable housing budget of \$750 to \$1,250 per month. A \$750 to \$1,250 monthly housing budget would correspond to approximately 30-45% of local Area Median Income (AMI) levels for single-person households.

The median monthly rent for a market-rate unit in Washington, D.C. is \$2,155 as of January 2025. As such, the housing budgets of this segment are far lower than the rents of most existing and available product within the city.

Developing the flexible co-living product at rents between \$750 and \$1,250 per bed per month would meet the target resident's housing budget in the market and provide an affordable option as compared to other available housing, delivering new supply at a significant discount to other market-rate offerings.

While target rents for the product are affordable for residents making 30-45% of AMI, there are no intended income restrictions, and individuals making above 45% AMI, or \$50,000, can also take advantage of centrally-located housing while reducing their housing expenditures. In Washington, D.C., there are over 66,000 single-person renter households that make over \$50,000 per year in addition to the 13,000 who make between \$30,000 and \$50,000 per year, reflecting a broad market of potential tenants.

HH Income		Monthly Housing Budget (30%)				
HH Income	Count	Low	High	Low	High	AMI (Average)
Under \$10k¹	16,400	\$0	\$10,000	\$0	\$250	<20%
\$10k-\$20k	12,900	\$10,001	\$20,000	\$250	\$500	<20%
\$20k-\$30k	4,900	\$20,001	\$30,000	\$500	\$750	20-30%
\$30k-\$40k	5,500	\$30,001	\$40,000	\$750	\$1,000	30-40%
\$40k-\$50k	7,400	\$40,001	\$50,000	\$1,000	\$1,250	40-45%
\$50k-\$60k	7,300	\$50,001	\$60,000	\$1,250	\$1,500	45-60%
\$60k-\$70k	7,400	\$60,001	\$70,000	\$1,500	\$1,750	60-65%
\$70k-\$80k	7,300	\$70,001	\$80,000	\$1,750	\$2,000	65-75%
\$80k-\$90k	7,300	\$80,001	\$90,000	\$2,000	\$2,250	75-80%
\$90k-\$100k	5,200	\$90,001	\$100,000	\$2,250	\$2,500	80-90%
\$100k+	32,000	\$100,001	\$1,000,000	\$2,500	\$25,000	90%+
				\$750-\$1,250 Target Per Bed Rent Range		

¹ Includes individuals who report no income

Source: American Community Survey Public Use Microdata Sample (PUMS) 2023 1-Year Estimates.

Selected Geographies: District of Columbia (Central) PUMA; District of Columbia, District of Columbia (North) PUMA; District of Columbia, District of Columbia (East) PUMA; District of Columbia, District of Columbia (Northeast) PUMA; District of Columbia, District of Columbia (South Central) PUMA; District of Columbia, District of Columbia (West) PUMA; District of Columbia

Operating Model and Financial Feasibility

Baseline project assumptions include industry standard and local market benchmarks to evaluate the feasibility of the project without additional subsidy. The following pages identify various levers that a developer could utilize in order to arrive at market returns.

For this project, rents for standard singles are assumed at \$1,000 per month, affordable for a single-person household earning 37% of AMI, while double units are assumed at \$800 per person per month, affordable for a single-person household at 30% AMI.

The HUD voucher available to pay for units like these allows rents in downtown Washington, D.C. up to a little over \$2,000 in the current fiscal year, well above projected rents for this building. For comparison, a typical studio apartment in downtown Washington, D.C. rents for approximately \$2,030 per month as of the end of 2024.

PROJECT OPERATING ASSUMPTIONS

Rent/Bed	Per Month per Person	Annualized
Singles	\$1,000	\$12,000
Doubles	\$800	\$9,600
Vacancy/Rent Loss		10%
Operating Expenses (OpEx) / RSF		\$14.50
Management Fee (% EGI)		2.5%
OpEx Ratio (as a % of total revenue)		45%
Capital Reserves/Unit		\$400
Rent Escalation		3%
OpEx Escalation		3%

PROJECT PROGRAM

Units Per Floor	53	Beds/ Floor	56
Singles	50	94%	Singles 50 89%
Doubles	3	6%	Doubles 6 11%
Total Units	530	Total Beds	560

OTHER INCOME

Parking Spaces	324 spaces	\$100/month
Bike Spaces	500 spaces	\$10/month
Office SF	10,000 SF	\$40/SF
Retail SF	10,000 SF	\$45/SF

OPERATING ASSUMPTIONS

Rent & Vacancy

Monthly rents of \$800 to \$1,000 per month per person align with the target market's housing budget and AMI levels of 30-50%. 3% annual rent and operating expense escalation rates align with market benchmarks for this type of product.

Other revenues include \$100/month for car parking, \$10/month for bike parking, a net office rent of \$40/SF and retail rent of \$45/SF to align with market benchmarks.

A 10% average vacancy rate exceeds the average market-rate vacancy rate in Washington, D.C., reflecting a risk premium and is in line with typical vacancy rates for similar concepts elsewhere.

Operating Expenses

A total annual operating expense cost of \$14.50/SF is based on industry benchmarks for multi-family buildings in this market and includes utilities, repairs, maintenance, and management. Operating expenses also include a higher insurance cost to account for higher anticipated insurance premiums associated with the product. Operating expenses as a percentage of total revenue average 45%, higher than typical multi-family benchmarks but reflective of higher operating costs associated with the product.

No real estate taxes have been included at this time. Many jurisdictions, including Washington, D.C., are offering tax abatements for office-to-residential

conversions that include units affordable to low or moderate-income residents.

Capital Reserves

Annual capital reserves of \$400 per bed are included to account for capital improvements and necessary unit refresh upon resident move-outs.

DEVELOPMENT COST ASSUMPTIONS

Construction Costs

Turner Construction Company was engaged to develop construction cost estimates for the prototypical building and test fit studied. The key variables in estimating construction costs are the quality of the building's existing mechanical, electrical, and plumbing (MEP) systems and the degree of anticipated interior demolition. These are heavily dependent on individual building conditions.

Turner developed a high and low cost range for two existing building conditions. The high range Option 1 assumes selective demolition of all floors and full replacement of HVAC and electrical systems. Option 2 assumes the reuse of existing HVAC and electrical systems plus the reuse of 50% of the existing shell space. In practice, developers are more likely to seek out and prioritize buildings for conversion that have the most intact systems to minimize MEP costs. Thus, **\$240/GSF in hard costs**, within the Option 2 range, is used for modeling purposes. Additional due diligence on a per-building basis would be required to refine cost estimates further.

CONSTRUCTION COST ESTIMATES	OPTION 1	OPTION 2
<i>Selective Demolition</i>	<i>Demo at all floors</i>	<i>50% of existing shell maintained</i>
<i>Hazardous Materials Abatement</i>	<i>Includes abatement allowance</i>	<i>Abatement not required</i>
<i>Fire Protection</i>	<i>Existing systems reused</i>	<i>Existing systems reused</i>
<i>Plumbing</i>	<i>Existing service/stacks reused</i>	<i>Existing service/stacks reused</i>
<i>HVAC</i>	<i>New systems required</i>	<i>Existing systems reused</i>
<i>Electrical</i>	<i>New systems required</i>	<i>Existing systems reused</i>
Construction Cost Estimate	\$317/GSF	\$240/GSF
<i>Low-High Estimate</i>	<i>\$301 - \$349/GSF</i>	<i>\$228 - \$264/GSF</i>

An industry-standard soft cost estimate of 15% of hard costs is included to account for architectural, engineering, permitting, and legal fees. A 5% contingency on hard & soft costs was also added per standard practice. \$5,000 per bed in furnishings, finishes, and equipment (FF&E) is also included.

Acquisition Costs

Due to the unknown dynamics of a potential development scenario, additional due diligence will be required on a per-building basis to identify a reasonable acquisition cost. Variables that would likely impact property value at the time of purchase include operating income, market cap rates, building condition, and available sales comps.

In addition to property value, there are multiple likely development scenarios for this product typology. These include, but are not limited to: The existing property owner self-develops the conversion; the existing property owner contributes the land as collateral in a joint-venture development; a foreclosed or bank-owned property is purchased by a developer at a discounted purchase price; a potential land swap between property owners; or a standard purchase at market value.

The development pro forma includes a purchase price/acquisition cost of **\$100/GSF or \$31.7 million**.

Financing Assumptions

Since the study aims to evaluate overall project level feasibility by assessing unlevered returns only, project financing assumptions and their impacts on anticipated debt and equity are not incorporated into the financial feasibility analysis.

DEVELOPMENT COSTS	TOTAL	PER GSF	PER BED	PER UNIT
Land/Building Purchase	\$31.73M	\$100		
Construction (Hard) Costs	\$76.16M	\$240	\$136,000	\$143,700
Soft Costs (15%)	\$11.42M	\$36		
Contingency (5%)	\$4.38M	\$14		
FF&E ¹	\$2.80M	\$9	\$5,000	
Total Project Costs	\$126.50M	\$399	\$225,900	\$238,700

PROJECT ASSUMPTIONS

Exit Cap Rate	5.75%
Terminal Sale Commissions	3.0%

5-YEAR CASH FLOW (\$ millions)	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Rental Income ²		6.77	6.98	7.19	7.40	7.62
Vacancy Loss ³		-2.71	-0.70	-0.72	-0.74	-0.76
Other Income ⁴		1.34	1.42	1.46	1.51	1.55
Effective Gross Revenue		5.40	7.70	7.93	8.17	8.41
Operating Expense ⁵		-3.32	-3.48	-3.58	-3.69	-3.80
Capital Reserves		0.00	-0.22	-0.23	-0.24	-0.25
NOI		2.08	4.00	4.12	4.24	4.37
Total Before Tax Cash Flow ⁶	-137.25	2.08	4.00	4.12	4.24	4.37
Terminal Value (Yr 10), Net Cost of Sale	87.95					
Unlevered IRR	-0.6%					

¹ Furnishings, Finishes, and Equipment

² Average weighted rent of \$11,743 per bed times 560 beds; at a 3% annual escalation

³ Assumes a 2-year stabilization/lease-up period and a stabilized occupancy of 90%

⁴ Total annual retail rent, office rent, parking and bike parking monthly fees. 3% annual escalation.

⁵ OpEx includes common area maintenance, operations, insurance, and management fees. 3% annual escalation.

⁶ Total before tax cash flow in year 0 includes estimate of anticipated construction loan interest carrying costs.

Returns

The project's feasibility was evaluated by developing an operating pro forma and financial model, employing industry-standard methodologies and metrics.

Two key metrics for assessing project performance are the unlevered and levered Internal Rate of Return (IRR). IRR measures both the project's performance and profitability, indicating the expected return on initial capital investment. Property developers and investors use preferred benchmark thresholds for both unlevered and levered IRRs when evaluating a project's financial feasibility.

Unlevered IRR assesses general project feasibility and does not calculate the impact of project financing. Lending institutions typically review a project's unlevered IRR as part of the underwriting process. This report focuses primarily on unlevered IRR as a measure of overall project feasibility.

Levered IRRs are determined based on specific financing assumptions, and targets vary based on risk tolerances of individual investors and other project sponsors, among other factors.

Scenarios

The baseline scenario assumes conservative conditions, including market-rate, undiscounted acquisition costs, traditional market-rate financing, and no local public assistance. In reality, interested developers are likely to pursue a number of strategies to reduce development costs by leveraging programs and other subsidies available to them, often with public subsidy or other support.

Public subsidies are typically available as grants or loans. Grants directly offset total development costs, reducing the project's overall cost. Grants effectively lower the required equity and debt, positively impacting both the levered and unlevered IRR.

Public subsidies can also be repayable loans with more favorable debt terms compared to traditional lending, such as a lower interest rate or a higher loan-to-cost ratio (i.e. less investor equity is required). These terms can reduce the annual cost of debt service on the loan, primarily impacting levered IRR by leaving more residual cash flow for investor returns.

To test the impact of these conditions on the baseline scenario, three alternative scenarios were developed based on the relative availability and ease of applying for and securing the various potential forms of assistance. Scenario 1 assumes a relatively low effort, while Scenario 3 requires a high degree of coordination with multiple public entities, though still within the range of possibility.

Scenario 3 also shows an anticipated level of subsidy required to achieve an unlevered IRR of approximately 8%, which may be understood as a threshold for project-level feasibility.

Scenario 1: No Acquisition Costs

Alternative Scenario 1 assumes no acquisition costs. This can be achieved in cases where a building is vacant or underperforming to the point where it no longer provides any value in its current state and is acquired at essentially no net cost to the buyer. Alternatively, municipalities sometimes purchase underperforming properties and donate them to developer entities as a form of public assistance for redevelopment purposes.

Scenario 2: No Acquisition Costs, Local Grant

In addition to no acquisition costs, Scenario 2 assumes local assistance in the form of a grant equal to 5% of project hard and soft costs.

Scenario 3: No Acquisition Costs, Additional Local Grant

Scenario 3 incorporates the assumption of an additional grant via a local funding mechanism in addition to no acquisition costs and the initial grant incorporated into Scenario 2. By leveraging existing city programs related to adaptive reuse and affordable housing production, Scenario 3 also assumes an additional grant equal to 30% of project hard and soft costs.

POTENTIAL SOURCES	TYPE OF FUNDING	SOURCE		UNLEVERED RETURNS	LEVERED RETURNS
No Acquisition Costs	Grant	Local	City agency could purchase a vacant property and sell to developer at no cost;	X	X
Local Grant	Grant	Local	City fund or local funding mechanism such as TIF (Tax Increment Financing)	X	X
Below-Market Financing ¹	Loan	Local, State, or Federal	Low-interest rate loan offered through existing local, state, or federal program (e.g. HUD)		X

¹ Possible funding mechanism not reflected in the returns of this report.

BASELINE: \$100/SF Acquisition		SCENARIO 1: No Acquisition Costs		SCENARIO 2: No Acquisition Costs 5% Subsidy		SCENARIO 3: No Acquisition Costs 35% Subsidy	
RETURNS		RETURNS		RETURNS		RETURNS	
Acquisition Cost	\$31.7M	Acquisition Cost	\$0	Acquisition Cost	\$0	Acquisition Cost	\$0
Subsidy/Equity	\$0	Subsidy/Equity	\$0	Subsidy/Equity	\$5.0M	Subsidy/Equity	\$31.3M
Total Project Costs Net of Subsidy ¹	\$126.5M	Total Project Costs Net of Subsidy ¹	\$94.8M	Total Project Costs Net of Subsidy ¹	\$89.8M	Total Project Costs Net of Subsidy ¹	\$63.5M
Stabilized NOI	\$4.00M	Stabilized NOI	\$4.00M	Stabilized NOI	\$4.00M	Stabilized NOI	\$4.00M
Unlevered IRR	-0.6%	Unlevered IRR	2.8%	Unlevered IRR	3.5%	Unlevered IRR	8.1%

Findings and Implications

Under the different scenarios tested, the project produces an unlevered IRR between -0.6% and 8.1%. Scenario 3 may produce returns high enough to reach feasibility, but it is dependent on individual investor and lender tolerances, portfolios, and preferences. The baseline scenario and Scenarios 1 and 2 would likely require an additional level of subsidy to attract necessary capital.

Regardless of the return metrics, the flexible co-living concept and model succeeds in its ability to deliver much-needed housing at a lower cost. It is estimated that this concept can deliver a dwelling unit with a baseline development cost of approximately \$238,700 per unit, while the current cost of developing a traditional studio unit in the city of Washington, D.C. can exceed approximately \$400,000.² If subsidy dollars could be dedicated to this concept, **the units produced per dollar of public assistance can greatly exceed what is generated under existing housing delivery models since the cost per bed is almost half the cost of building a traditional studio.**

Furthermore, the concept provides more opportunities for conversion feasibility from a design perspective. The building's large floor plate size and significant building depth limit design feasibility for a traditional market-rate office-to-residential conversion, but work well for the co-living model. Supporting the concept could expand the share of convertible office buildings, putting additional properties into productive use that would otherwise remain vacant or underutilized.

As housing affordability continues to erode and downtown office vacancy rates remain elevated, this concept can unlock additional office-to-residential conversion opportunities. Policymakers can consider supporting the implementation of office-to-flexible co-living conversions due to the outsized impact that the concept has on housing production in an area of critical need. If successful, cities will be able to deliver low-cost housing in a much more efficient and cost-effective manner, providing thousands of secure, modern, and attractive homes to our nation's downtowns.

¹ Reflects development costs before construction loan interest

² Gensler benchmark study of studio construction costs, February 2025



Washington, D.C.

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