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# FLEXIBLE CO-LIVING HOUSING FEASIBILITY STUDY

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Houston, Texas

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**Pew Gensler**

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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 \$1,382 in November 2024, an increase of 21% in just the four years since November 2020.<sup>1</sup> 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.<sup>2</sup>

## 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.<sup>3</sup> Research indicates that homelessness rates are highest in cities with the highest rents, and that homelessness rises when rents rise.<sup>4</sup>

## 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.<sup>5</sup> 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.

<sup>1</sup> Apartment List November 2024 National Rent Report <https://www.apartmentlist.com/research/national-rent-data>

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

<sup>3</sup> HUD January 2024 Point-in-Time Count Report [https://www.hud.gov/press/press\\_releases\\_media\\_advisories/HUD\\_No\\_24\\_327](https://www.hud.gov/press/press_releases_media_advisories/HUD_No_24_327)

<sup>4</sup> 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>

<sup>5</sup> 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.<sup>1</sup> 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.<sup>2</sup>

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.

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.

## 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.<sup>3</sup> 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.



<sup>1</sup>New 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>

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

<sup>3</sup>What 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>

# Houston: Existing Conditions, Regulatory Overview, and Building Stock

## The State of Housing in Houston

Houston is a city that is known for its relatively affordable housing costs due to a historic lack of regulatory barriers to building and low construction costs. The city’s overall median rent of \$1,297 as of November 2024 is one of the lowest among major cities in the country. Despite a reputation for affordability, rents have increased by 14% since the start of 2021.

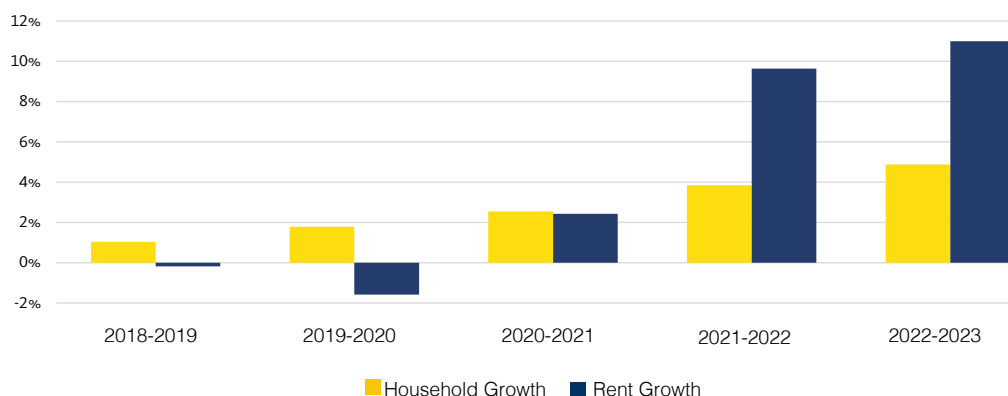
While there are an estimated 3,270 individuals experiencing homelessness in the Houston metropolitan area, its homelessness rate of 4 per 10,000 inhabitants is one of the lowest among major cities in the country.<sup>1</sup> Simultaneously, downtown office vacancy rates currently average 33%.<sup>2</sup>

## The Opportunity

The opportunity to introduce affordable co-living housing in Houston 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)



**2018-2023:**

**HOUSEHOLDS:**

**+5%**

**RENT:**

**+11%**

<sup>1</sup> HUD Annual Homeless Assessment Report 2023 Point-in-Time Estimates by CoC <https://huduser.gov/portal/datasets/ahar/2023-ahar-part-1-pit-estimates-of-homelessness-in-the-us.html>

<sup>2</sup> Colliers Downtown Commercial Vacancy Rate Q3 2024 <https://www.colliers.com/en/research/houston/q3-2024-houston-office>

Chart Data Sources: Apartment List National Rent Report (as of November 2024) <https://www.apartmentlist.com/research/national-rent-data>, Esri Business Analyst

# Houston at a glance:



**MEDIAN  
RENT**

**\$1,297**



**HOMELESSNESS  
RATE**

**4 per 10k**



**DOWNTOWN  
OFFICE  
VACANCY**

**33%**



**REGULATORY  
BARRIERS**

**LOW**

## Houston Building and Fire Code

The buildings studied are located in the Houston Central Business District, which has no parking requirements. Under the otherwise typical City of Houston code (International Building Code (IBC) 2021 with City of Houston Amendments), a project would need 1.0 parking space for each sleeping room up to and including 250 rooms, 0.75 parking spaces for each sleeping room from 251 rooms to 500 rooms, and 0.50 parking spaces for each sleeping room in excess of 500 rooms.

With a parking variance, parking requirements could be significantly reduced, but this is not necessary given the location of the buildings studied. Furthermore, there are many parking garages within the Central Business District which currently have vacancies. These facilities have been leveraged to satisfy parking requirements in other past residential conversion projects.

There are no major changes in the City of Houston Amendments compared to the IBC 2021. Additional common path of travel requirements are not relevant due to the small average unit sizes of the concept.

## Energy Code Building Requirements

There are no major changes in the City of Houston Amendments compared to the standard International Energy Conservation Code (IECC).

## Zoning

Houston has no zoning requirements.

## Houston Affordable Housing Programs

The City of Houston has several grants and initiatives available for the development of affordable housing in addition to standard federal and state programs. These include:

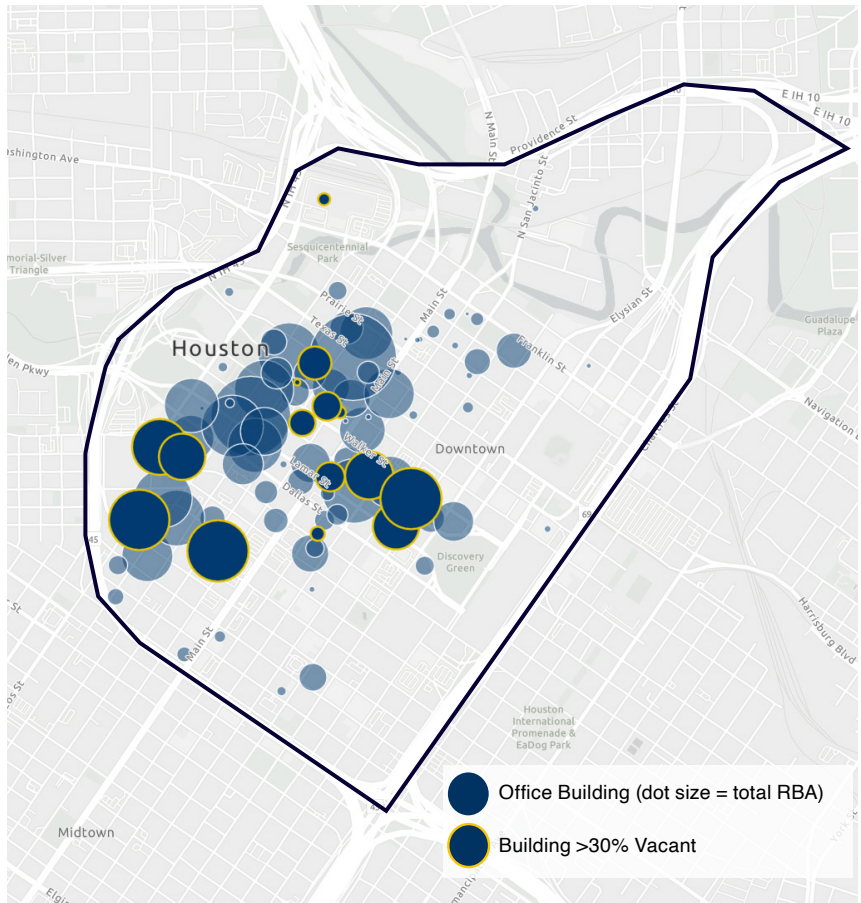
- The Houston Central Business District is home to several Tax Increment Reinvestment Zones (TIRZ) that leverage property tax revenue to support development and infrastructure initiatives, including affordable housing and adaptive reuse.
- The Houston Community Housing Development Organization (CHDO) offers grants to support the development of new and innovative ideas related to the delivery of affordable housing.
- The Emergency Solution Grant (ESG) program is a competitive grant in the State of Texas that awards funds to provide services necessary to help persons that are at-risk of homelessness or are experiencing homelessness, which includes housing and housing services.

### Houston's Central Business District

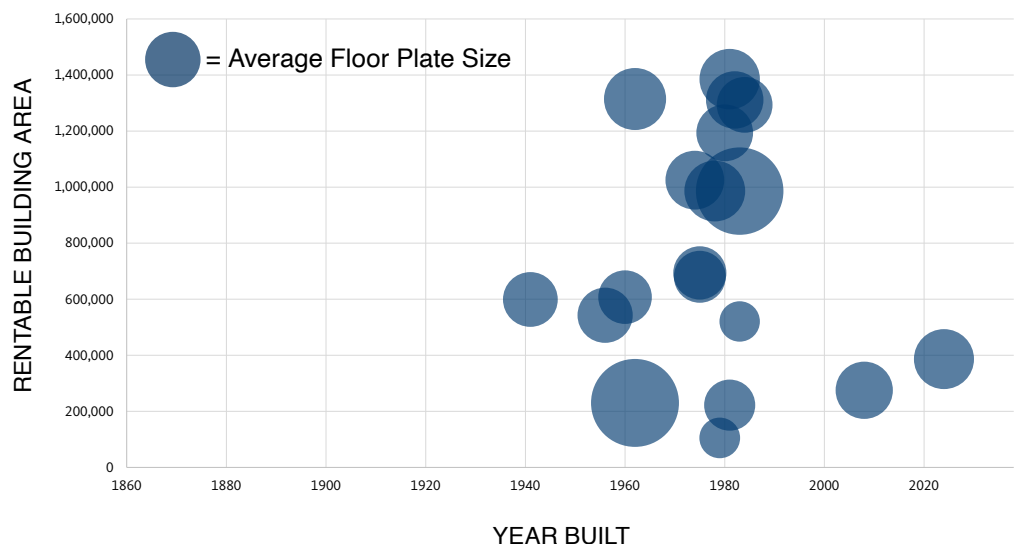
According to data from CoStar, there are approximately 88 office buildings of at least 50,000 SF and above within Houston's Central Business District (CBD). 19 buildings are reported to have a vacancy rate of at least 30%.

As a city with a more recently developed downtown, Houston's downtown office stock is very homogeneous, with the majority of office buildings constructed in the 1960s through the 1980s. There are very few buildings constructed prior to 1940.

### Houston CBD



### Downtown Office Stock (>30% Vacant)







>30% VACANT PROPERTIES	TYPE 1	TYPE 2
% of Building Stock	~25% of total SF	~75% of total SF
Age	Prior to 1974	1974 and onward
Number of Floors	26	34
Average Floor Area Ratio (FAR)	9	11
Average Floorplate	30,000 SF	24,600 SF
Average Vacancy Rate	67%	48%
	<b>SELECTED TYPOLOGY</b>	

### Office Typologies

There are 19 buildings reported to have a vacancy rate of at least 30%. These buildings have been identified, analyzed, and grouped to define prototypical typologies.

Houston’s office stock with at least 30% vacancy can be categorized into two 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.

Two typologies of properties experiencing 30%+ vacancy downtown:

**Type 1:** High-rise buildings that are at least 50 years of age (built prior to 1974). These properties are an average of 26 floors, with an average floor plate of over 30,000 SF. These buildings represent about 25% of the selected inventory.

**Type 2:** High-rise buildings built in the last 50 years (since 1974). These properties have a slightly smaller average floorplate of 25,600 SF but are taller, averaging 34 stories. These properties collectively represent about 75% of the selected office inventory.

Texas has a robust state Historic Tax Credit (HTC) program that is among the most generous in the country in terms of funding and eligibility. Properties can qualify for credits if they are at least 50 years of age. Despite it not being the dominant typology, **Type 1 was selected as the prototype for testing possible conversion feasibility** in order to evaluate the impact of both state and federal tax credits.

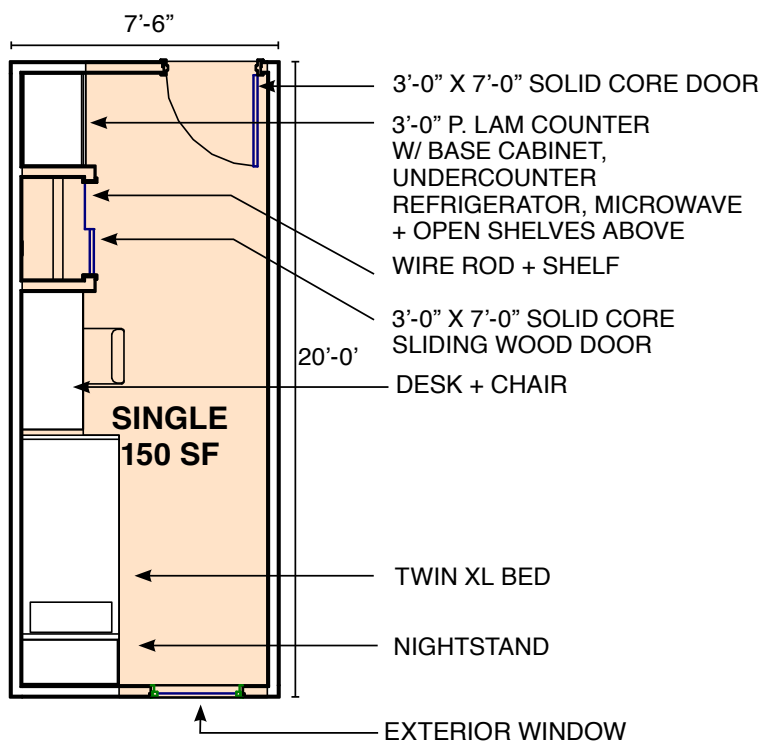
# Flexible Co-Living: Defining the Product

## Program and Unit Module

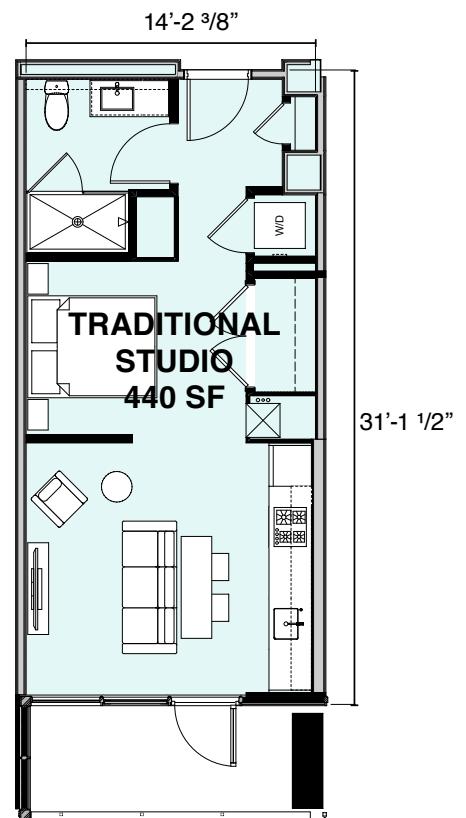
A program and unit module were developed to align with the project's goals and conform to the City of Houston's building code.

A typical single-occupant sleeping room consists of a private room between 141 SF and 227 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.

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

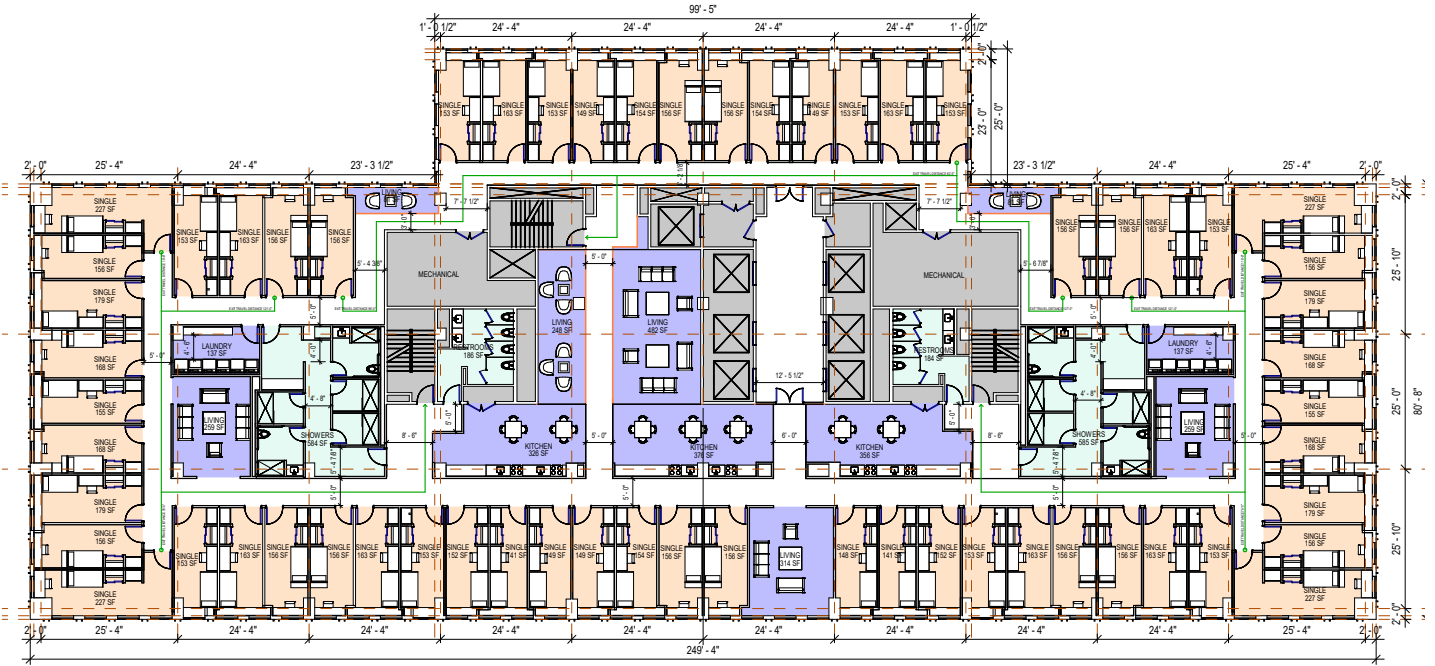
The following shared facilities are provided on each residential floor. The quantities of specific fixtures are driven by required ratios per occupant as defined by building code:

- 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 five larger shared living areas per floor, accommodating a variety of seating areas including couches and tables, in addition to two smaller seating areas in the interior hallway.
- Bathrooms:** Bathroom facilities are shared in the interior of the floor utilizing existing plumbing stacks from the office core. There are two central shower areas that each contain five private shower rooms. Two of the shower rooms also contain a toilet and sink. Separate from the shower areas, there are two additional toilet rooms that each contain four toilets and two sinks. Altogether, there are ten showers, twelve toilets, and fourteen sinks per floor.
- Laundry:** Two laundry rooms per floor each accommodate three washers and three dryers.

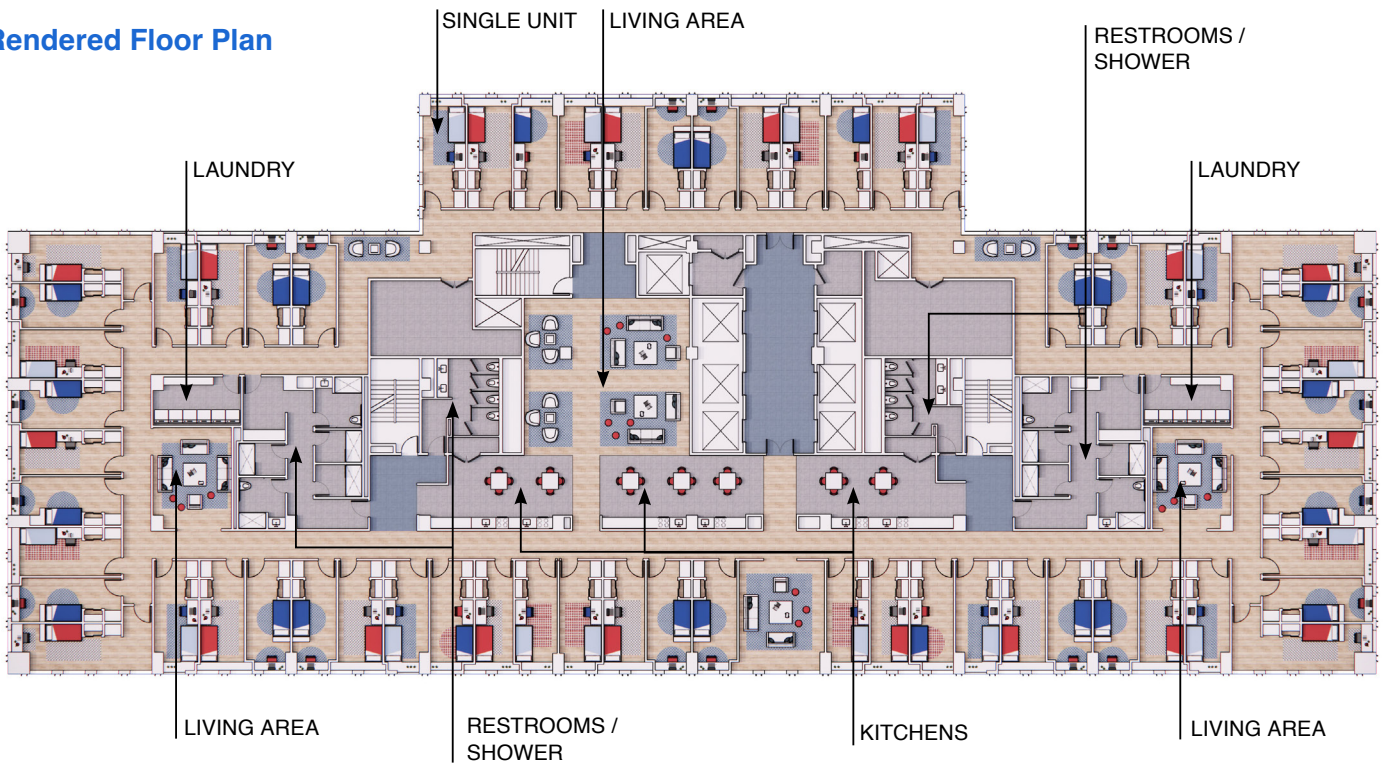
## Typical Unit Rendering



Typical Floor Test Fit



Rendered Floor Plan



### Yields per Floor

The prototypical building studied has a gross floor area of 22,073 SF. Each floor can accommodate 60 single units across a total residential area of 9,134 SF per floor. An additional 4,281 SF per floor is dedicated to the interior amenities, including the bathrooms, kitchens, and living areas.

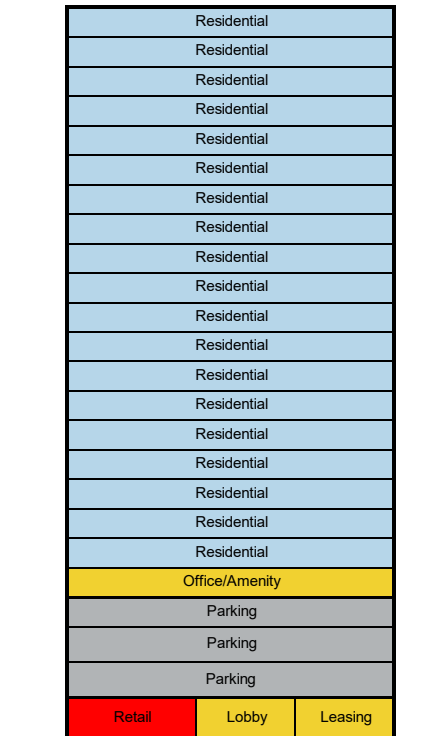
This yield produces a residential efficiency ratio of 61%. The remaining 39% of the gross floor area is comprised of the building's core and interior circulation.

The ratios of shared facilities/fixtures per occupant conform with Houston's building code regulations.

### Building Summary

The prototypical building studied is 24 floors. The ground floor would consist of a main lobby, a management office, and approximately 10,000 SF of retail space. Floors two, three, and four are comprised of a structured parking deck that contains 318 car parking spaces in total in addition to room for 500 bike parking spaces. The fifth floor contains approximately 10,000 SF of Class B office space plus building-level shared amenities including a fitness center. Floors 6-24 are dedicated for residential use, and each floor would have an identical layout.

Assuming 19 residential floors and 60 single units per floor, the building can yield a total occupancy of 1,140.



STATISTICS	
Residential Area	9,134 SF per floor
Interior Amenity	4,281 SF per floor
Gross Floor Area	22,073 SF per floor
Efficiency	61%
Occupants	60 (60 single units)
	368 GSF per occupant
Toilets	12 (5.0 occupants per fixture)
Showers	10 (6.0 occupants per fixture)
Sinks	14 (4.2 occupants per fixture)
Kitchens	6 (10.0 occupants per fixture)
Washer/Dryers	6 (10.0 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
			269.00						SF	SF	SF	SF		SF	SF		SF
Residential	24	11.00	269.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	23	11.00	258.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	22	11.00	247.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	21	11.00	236.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	20	11.00	225.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	19	11.00	214.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	18	11.00	203.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	17	11.00	192.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	16	11.00	181.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	15	11.00	170.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	14	11.00	159.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	13	11.00	148.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	12	11.00	137.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	11	11.00	126.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	10	11.00	115.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	9	11.00	104.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	8	11.00	93.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	7	11.00	82.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Residential	6	11.00	71.00	60				0	2,213	6,445		4,281		9,134	22,073	60.8%	152
Office/Amenity	5	11.00	60.00	0				0	2,213	4,860		5,000	10,000		22,073		
Parking	4	15.00	45.00	0	106			0							22,073		
Parking	3	15.00	30.00	0	106			0							22,073		
Parking	2	15.00	15.00	0	106			0							22,073		
Ground Floor	1	15.00	0.00	0	0	500	5,000	0	1,000	1,000	5,073	0	10,000		22,073		
	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	24		269.00	1,140	318	500	5,000	0	45,260	128,315	5,073	86,339	20,000	173,546	529,752		152

# 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 data from the American Community Survey, within the City of Houston and adjacent communities, 53% of 1.1 million households are renters. Of these 611,000 households, 40% are single-occupant, and only 20% are comprised of four people or more.

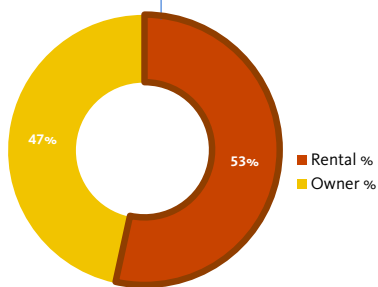
The household incomes of Houston's single-occupant renters are relatively evenly distributed. Approximately 12% or 30,000 single-occupant households earn between \$20,000 and \$30,000 per year.

26% of Houston-area renters are considered severely cost-burdened, meaning they pay more than 50% of their income for rent. 52% of all Houston-area renters spend more than 30% of income on rent.<sup>1</sup>

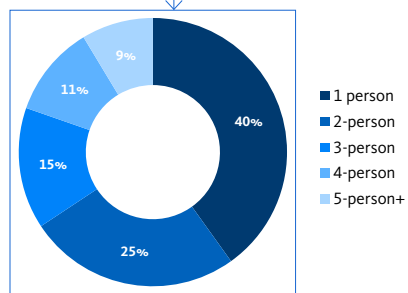
The quantity of single-person renter households earning less than \$30,000 per year, or approximately 50% of the Area Median Income (AMI), suggests a sizable market for the flexible co-living typology. The single-occupant model offers a more affordable product that aligns with renters' incomes and housing budgets.

**There are 611,000 renter households in Houston and about 40% (245,000) of them are single-occupant.**

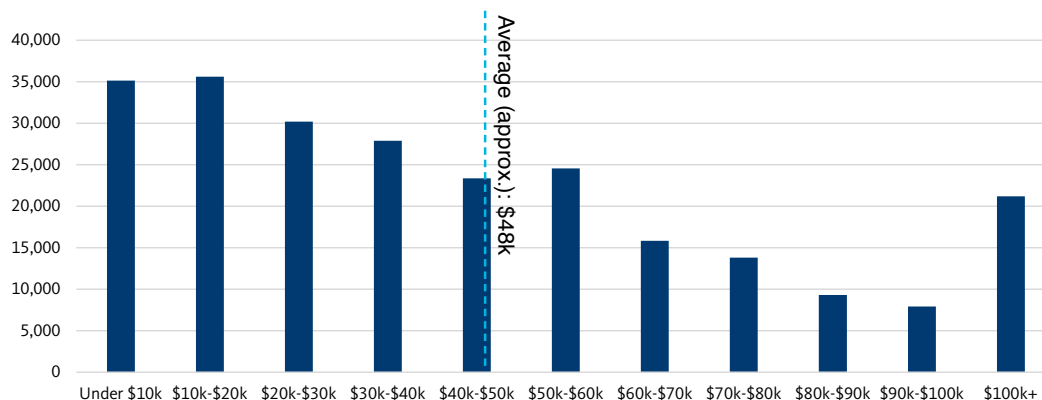
Household Type



Renters by Household Size



Single-Person Renters by Household Income



<sup>1</sup> The State of the Nation's Housing, Harvard Joint Center on Housing Studies [https://www.jchs.harvard.edu/sites/default/files/reports/files/Harvard\\_JCHS\\_State\\_Nations\\_Housing\\_2022.pdf](https://www.jchs.harvard.edu/sites/default/files/reports/files/Harvard_JCHS_State_Nations_Housing_2022.pdf)  
 Source: American Community Survey Public Use Microdata Sample (PUMS) 2022 1-Year Estimates.

### Potential Rents

Based on the distribution of single-person renter households in Houston, there are approximately 30,000 individuals who earn between \$20,000 and \$30,000 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 \$500 to \$750 per month. A \$500 to \$750 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 the city of Houston is currently \$1,297. 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 \$500 and \$750 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.

HH Income	Count	HH Income		Monthly Housing Budget (30%)		AMI (Average)
		Low	High	Low	High	
Under \$10k	35,140	\$0	\$9,999	\$0	\$250	<20% AMI
\$10k-\$20k	35,620	\$10,000	\$19,999	\$250	\$500	20-30% AMI
<b>\$20k-\$30k</b>	<b>30,210</b>	<b>\$20,000</b>	<b>\$29,999</b>	<b>\$500</b>	<b>\$750</b>	<b>30-45% AMI</b>
\$30k-\$40k	27,900	\$30,000	\$39,999	\$750	\$1,000	45-60% AMI
\$40k-\$50k	23,370	\$40,000	\$49,999	\$1,000	\$1,250	60-75% AMI
\$50k-\$60k	24,560	\$50,000	\$59,999	\$1,250	\$1,500	75-90% AMI
\$60k-\$70k	15,820	\$60,000	\$69,999	\$1,500	\$1,750	90-100%+ AMI
\$70k-\$80k	13,820	\$70,000	\$79,999	\$1,750	\$2,000	100%+ AMI
\$80k-\$90k	9,290	\$80,000	\$89,999	\$2,000	\$2,250	100%+ AMI
\$90k-\$100k	7,910	\$90,000	\$99,999	\$2,250	\$2,500	100%+ AMI
\$100k+	21,210	\$100,000	\$1,000,000	\$2,500	\$25,000	100%+ AMI

\$500-\$750  
Target Per Bed Rent  
Range

Source: American Community Survey Public Use Microdata Sample (PUMS) 2022 1-Year Estimates. Selected Public Use Microdata Area (PUMA) geographies: Houston City (North Central)--North of I-10 & Inside Loop I-610 PUMA; Texas, Houston City (East Central)--East of I-45 & Inside Loop I-610 PUMA; Texas, Houston City (South Central)--South of US-59, West of I-45 & Inside Loop I-610 PUMA; Texas, Houston City (West Central)--South of I-10 & Inside Loop I-610 PUMA; Texas, Houston (East), Galena Park, Jacinto Cities & Cloverleaf PUMA; Texas, Houston City (Northeast)--Between Loop I-610 & Beltway TX-8 PUMA; Texas, Houston City (North) & Aldine--Between Loop I-610 & Beltway TX-8 PUMA; Texas, Houston City (North)--South of Aldine & Inside Beltway TX-8 PUMA; Texas, Houston City (North)--West of Aldine & Inside Beltway TX-8 PUMA; Texas, Houston City (Northwest)--Between Loop I-610 & Beltway TX-8 PUMA; Texas, Houston (West) & Spring Valley Village Cities--Between Loop I-610 & Beltway TX-8 PUMA; Texas, Houston (West) & Hunters Creek Village Cities--Between Loop I-610 & Beltway TX-8 PUMA; Texas, Houston City (West)--Westpark Tollway, Between Loop I-610 & Beltway TX-8 PUMA; Texas, Houston (Southwest) & Bellaire (Southeast) Cities--Between Loop I-610 & Beltway TX-8 PUMA; Texas, Houston City (Southwest)--Between Loop I-610 & Beltway TX-8 PUMA; Texas, Houston City (South)--Between Loop I-610 & Beltway TX-8 PUMA; Texas, Houston City (Southeast)--West of Pasadena City & Outside Loop I-610 PUMA; Texas, Houston (Southeast) & South Houston Cities--Inside Beltway TX-8 PUMA; Texas, Houston (Southeast) & Webster Cities PUMA; Texas, Houston (Southeast), Pasadena (Southeast), La Porte (South) & Seabrook (East) Cities PUMA; Texas, Harris County (West)--Houston City (West)--North of US-90 & West of TX-6 PUMA; Texas, Houston City (West)--South of I-10 & West of TX-6 PUMA; Texas, Houston City (West)--East of TX-6 & West of Beltway TX-8 PUMA; Texas, Houston City (West)--Westpark Tollway, West of Beltway TX-8 PUMA; Texas, Houston City (Southwest)--East of TX-6 & West of Beltway TX-8 PUMA; Texas



# 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 marketable returns for levered and unlevered internal rates of return (IRR).

For this project, rents for standard singles are assumed at \$700 per month, which would be affordable for a single-person household earning 42% of AMI.

The HUD voucher available to pay for units like these allows rents in downtown Houston up to \$1,380 in the current fiscal year, well above projected rents for this building. For comparison, a typical studio apartment in downtown Houston rents for approximately \$1,330 per month as of August 2024.

<b>PROJECT OPERATING ASSUMPTIONS</b>		
<b>Rent/Bed</b>	<i>Per Month per Person</i>	<i>Annualized</i>
Singles	\$700	\$8,400
<b>Vacancy/Rent Loss</b>		<b>10%</b>
<b>Total Operating Expenses (OpEx) / SF</b>		<b>\$11.50</b>
Management Fee (%EGI)		2.5%
OpEx Ratio (as a % of total revenue)		43%
<b>Capital Reserves/Unit</b>		<b>\$400</b>
<b>Rent Escalation</b>		3%
<b>OpEx Escalation</b>		3%

<b>PROJECT PROGRAM</b>					
<b>Units Per Floor</b>	<b>60</b>		<b>Beds/ Floor</b>	<b>60</b>	
Singles	60	100%	Singles	60	100%
Doubles	0	0	Doubles	0	0
<b>Total Units</b>	<b>1,140</b>		<b>Total Beds</b>	<b>1,140</b>	

<b>OTHER INCOME</b>		
Parking Spaces	318 spaces	\$50/month
Bike Spaces	500 spaces	\$10/month
Office SF	10,000 SF	\$20/SF
Retail SF	10,000 SF	\$25/SF

**OPERATING ASSUMPTIONS**

**Rent & Vacancy**

Monthly rents of \$700 per month 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 \$50/month for car parking, \$10/month for bike parking, a net office rent of \$20/SF and retail rent of \$25/SF to align with market benchmarks.

A 10% average vacancy rate is comparable to the average market-rate vacancy rate in Houston.

**Operating Expenses**

A total annual operating expense cost of \$11.50/ SF is based on industry benchmarks for multi-family buildings in this market and includes utilities, repairs, maintenance, management, and insurance. This includes a higher insurance cost to account for higher anticipated insurance premiums associated with the product. Operating expenses as a percentage of total revenue average 43%, 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.

**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, **\$205/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.

<b>CONSTRUCTION COST ESTIMATES</b>	<b>OPTION 1</b>	<b>OPTION 2</b>
<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>
<b>Construction Cost Estimate</b>	<b>\$249/GSF</b>	<b>\$205/GSF</b>
<i>Low-High Estimate</i>	<i>\$237 - \$274/GSF</i>	<i>\$195 - \$226/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 **\$30/GSF or \$16 million**.

### Financing Assumptions

The project assumes traditional debt and equity and no public financing or other forms of assistance. Industry benchmark loan assumptions of 65% loan-to-value (LTV) and a 30-year amortization are used for permanent financing. The remaining 35% of project costs is expected to be sourced through equity.

Interest rates are assumed at 6.0% for permanent financing and 10% for the construction period. An exit cap rate of 5.75% is assumed during reversion in year 10 with a 3.0% sale commission.

DEVELOPMENT COSTS	TOTAL	PER GSF	PER BED	PER UNIT
Land/Building Purchase	\$15.89M	\$30		
Construction (Hard) Costs	\$108.60M	\$205	\$95,300	\$95,300
Soft Costs (15%)	\$16.29M	\$31		
Contingency (5%)	\$6.24M	\$12		
FF&E <sup>1</sup>	\$5.70M	\$11	\$5,000	
<b>Total Project Costs</b>	<b>\$152.73M</b>	<b>\$288</b>	<b>\$134,000</b>	<b>\$134,000</b>

### PROJECT FINANCING ASSUMPTIONS

Debt Loan-to-Value (LTV)	65%
Equity	35%
Permanent Loan	6.0%
Construction Period Loan	10.0%
Permanent Loan Period	30-Years
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 <sup>2</sup>		9.86	10.16	10.46	10.78	11.10
Vacancy Loss		-3.95	-1.02	-1.05	-1.08	-1.11
Other Income <sup>3</sup>		0.72	0.77	0.79	0.81	0.84
Effective Gross Revenue		6.64	9.91	10.21	10.51	10.83
Operating Expense		-4.07	-4.27	-4.40	-4.53	-4.67
Capital Reserves		0.00	-0.48	-0.50	-0.51	-0.53
<b>NOI</b>		<b>2.57</b>	<b>5.15</b>	<b>5.31</b>	<b>5.47</b>	<b>5.63</b>
<b>Total Before Tax Cash Flow</b>	<b>-164.88</b>	<b>2.57</b>	<b>5.15</b>	<b>5.31</b>	<b>5.47</b>	<b>5.63</b>
Terminal Value (Yr 10), Net Cost of Sale	113.39					
<b>Unlevered IRR</b>	<b>0.2%</b>					
<b>Levered IRR</b>	<b>-6.6%</b>					
<b>Equity multiple - Exit year</b>	<b>0.62</b>					

<sup>1</sup> Furnishings, Finishes, and Equipment

<sup>2</sup> Average weighted rent of \$8,400 per bed times 1,140 beds; at a 3% annual escalation

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

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

<sup>5</sup> OpEx is calculated on GSF and includes common area maintenance, operations, insurance, and management fees. 3% annual escalation.

## 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.

Levered IRR measures an investor's return on their project contribution. Generally, projects with attractive levered IRRs can draw investors by generating sufficient Net Operating Income (NOI) to repay investments. Individual risk tolerances determine an investor's preferred levered IRR thresholds.

## 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-value 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 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 15% of project hard and soft costs.

### Scenario 3: No Acquisition Costs, Local Grant, Below-Market Financing, Historic Tax Credits

Alternative Scenario 3 assumes no acquisition costs, the local grant, plus below-market financing in the form of a low-interest loan that could be offered to the project through one of several national or local programs. The below-market loan is assumed to offer a 40-year amortization, preferred interest rate of 4.75%, and 75% LTV. This is in comparison to the market-rate 30-year amortization, 6.0% interest rate, and 65% LTV used in the prior scenarios. This form of assistance produces lower annual debt service costs and a higher net operating income.

Alternative Scenario 3 also assumes the use of Historic Tax Credits. Established in 1976, the federal Historic Tax Credit program provides tax incentives for historic building renovations. To qualify for Historic Tax Credits, a building must be a certified historic structure (typically at least 50 years of age or older) or listed as a contributing building in a historic district. Since the Historic Tax Credit typically could be applied to buildings that are 50 years old, or older, at the time of publication this would cover buildings built up to 1974.

The federal Historic Tax Credit program provides tax credits equal to up to 20% of qualified rehabilitation costs, with no maximum dollar limit. Qualified expenses include most hard and soft costs related to rehabilitation but do not include acquisition costs or interior furniture. Once awarded to a project, tax credits are sold to investors and the net proceeds function as a grant that reduces the overall development budget.<sup>1</sup>

38 states offer parallel State Historic Tax Credit programs that can be combined with Federal credits, including Texas. The Texas state HTC program provides additional tax credits equal to up to 25% of qualified rehabilitation costs.<sup>2</sup> Scenario 3 tests the impact of leveraging both state and federal programs.

SUBSIDY/INCENTIVE	TYPE OF FUNDING	SOURCE		UNLEVERED IRR IMPACT	LEVERED IRR IMPACT
No Acquisition Costs	Grant	Local	City could purchase a building and donate 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	Loan	Local, State, or Federal	Low interest rate loan offered through existing local, state, or federal program (e.g. HUD)		X
Historic Tax Credit - Federal	Grant	Federal	Grant equal to up to 20% of eligible rehabilitation costs for qualified buildings	X	X
Historic Tax Credit - State	Grant	State	38 states offer parallel State HTC program for qualified buildings; funding and eligibility vary by state	X	X

<sup>1</sup> IRS Rehabilitation Credit Overview: <https://www.irs.gov/businesses/small-businesses-self-employed/rehabilitation-credit>

<sup>2</sup> State Historic Tax Credit Resource Guide: [https://cdn.savingplaces.org/2023/03/31/15/02/36/841/NTHP\\_HTC\\_2023\\_StateGuide.pdf](https://cdn.savingplaces.org/2023/03/31/15/02/36/841/NTHP_HTC_2023_StateGuide.pdf)

BASELINE: \$30/SF Acquisition		SCENARIO 1: No Acquisition Costs		SCENARIO 2: No Acquisition Costs 15% Subsidy		SCENARIO 3: No Acquisition Costs 15% Subsidy + HTC 4.75% Debt/75% LTV	
<b>RETURNS</b>		<b>RETURNS</b>		<b>RETURNS</b>		<b>RETURNS</b>	
Acquisition Cost	\$15.9M	Acquisition Cost	\$0	Acquisition Cost	\$0	Acquisition Cost	\$0
Subsidy/Equity	\$0	Subsidy/Equity	\$0	Subsidy/Equity	\$18.7M	Subsidy + HTC	\$59.7M
Total Project Costs Net of Subsidy	\$152.7M	Total Project Costs Net of Subsidy	\$136.8M	Total Project Costs Net of Subsidy	\$118.1M	Total Project Costs Net of Subsidy + HTC	\$77.1M
Debt	6.0%/30-year amort	Debt	6.0%/30-year amort	Debt	6.0%/30-year amort	Debt	4.75%/40-yr amort
Unlevered IRR	0.2%	Unlevered IRR	1.5%	Unlevered IRR	3.2%	Unlevered IRR	8.3%
Stabilized NOI	\$5.15M	Stabilized NOI	\$5.15M	Stabilized NOI	\$5.15M	Stabilized NOI	\$5.15M
Levered IRR	-6.6%	Levered IRR	-4.0%	Levered IRR	1.5%	Levered IRR	18.5%
Equity Multiple	0.62	Equity Multiple	0.82	Equity Multiple	1.22	Equity Multiple	3.38
Stabilized DCR	0.80	Stabilized DCR	0.80	Stabilized DCR	0.92	Stabilized DCR	1.58

### Findings and Implications

Under the different scenarios tested, the project produces an unlevered IRR between 0.2% and 8.3% and a levered IRR between -6.6% and 18.5%. 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 low cost. It is estimated that this concept can deliver a dwelling unit with a baseline total construction cost of approximately \$134,000 per unit, which is roughly equivalent to the average cost of constructing a stick-built studio unit with surface parking in the city of Houston.<sup>1</sup> If subsidy dollars could be dedicated to this concept, **the same level of subsidy could be leveraged to deliver lower-cost housing in the job and amenity rich Houston city center instead of higher-cost housing in less-amenitized and more heavily**

**car-dependent locations in outer neighborhoods.** Furthermore, the initial market research demonstrates that **there are at least 30,000 people living in the city of Houston whose income levels suggest that this concept is affordable to them,** and who otherwise may be struggling to find comparable housing options at a similar price point that may not exist today.

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.

<sup>1</sup> Gensler benchmark study of studio construction costs, November 2024



## Houston, Texas

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**Pew Gensler**

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