

Weekend long reads

House & Home

Extreme micro-living in San Francisco

Residents — and innovators — are pushed to the limits
in the technology capital of the world

Elaine Moore OCTOBER 3 2019

Nob Hill, in the ritzy centre of San Francisco, was named in old-world slang after its wealthy, well-connected residents. Many people here are among the highest earners in the world. Yet hidden among the sprawling mansions and chi-chi hotels, one apartment is a living experiment in futuristic micro-living.

Bumblebee Spaces, a robotics company, designs and builds storage and beds for compact living. Furniture and possessions are hidden away inside ceiling boxes, to be raised and lowered at the touch of an iPad. Suspension straps, able to hold up to 3,000lbs, support the boxes, while wall-mounted safety sensors are ready to hit the brakes if something — or someone — stands in the way. A queen-sized bed is lowered from the ceiling, quietly converting a sitting room into a bedroom.

The building that houses the apartment is typical of the elegant, four-storey family homes built by rich San Franciscans of the past. Its early 20th-century exterior, with its distinctive decorative turrets, is painted a deep blue. But inside, the look is more Swedish showroom: pale wood, muted lights and a clean, empty space.

Everyday possessions are nowhere to be seen. The system's software catalogues each household item as it is put away — umbrellas, plates, cutlery, paperwork and so on — allowing residents to keep track of their belongings without having to worry about where to put them. Over time, this smart storage system will learn the habits of the people who live here. It will know to lower breakfast cereal in the morning, or walking boots on a Saturday afternoon.



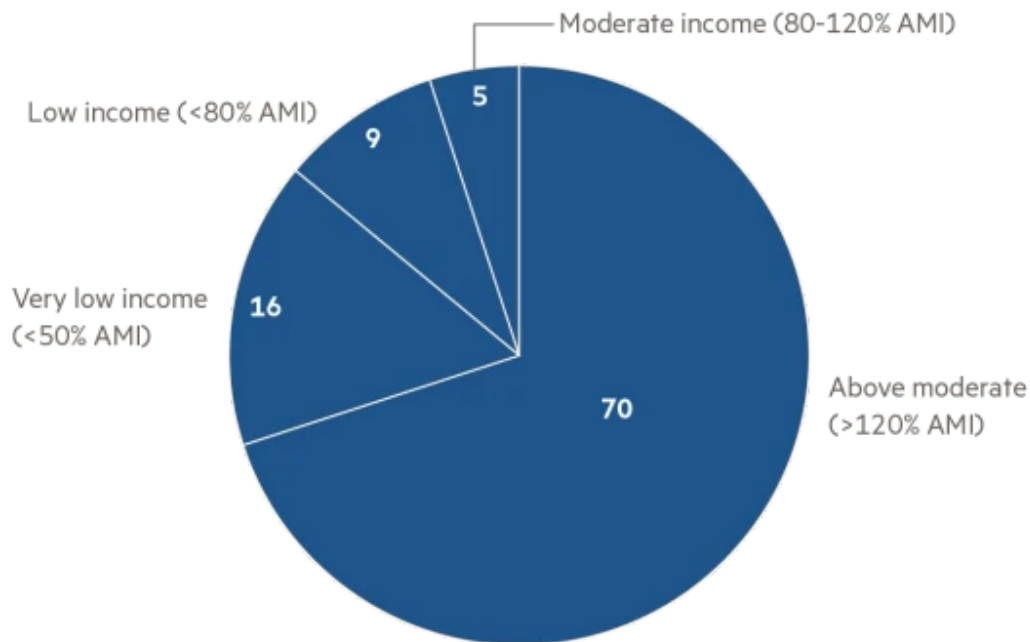
Nob Hill in San Francisco © Alamy

At just 130 sq ft, space in the main room is limited, but Bumblebee is not promoting its system as the answer to the city's housing crisis. Rather, it wants San Franciscans to see its ceiling-storage technology as a form of urban luxury — hence the Nob Hill location. For now, the apartment is home to the company's employees, who move in for a few months at a time to test the product and experience first hand its claim to “create a new way to live by unlocking the third dimension”.

Scott Tandoi, a 31-year-old hardware engineering manager, moved in with his fiancée Pauline Lee a few weeks ago. He says they relished the lack of clutter immediately.

New housing in San Francisco 2015-22

By income (%)



AMI = area median income

Source: 2018 San Francisco Housing Inventory

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“It’s funny, there have been people who have suggested wacky ideas for what we could do with the additional space — robot furniture and so on,” he says. “But when you live there you don’t really want to do anything with it.”

Tandoi, a man with all the cheerful zeal of a good start-up engineer, says the couple particularly liked the way the ultra-modern design fitted into the 100 year-old building. “There is this juxtaposition,” he says. “You have buildings from the 1900s — the stairs are creaking and you can see the old wall finishings. Then you walk into an apartment and there is this room of modern technology. I love that. It’s the story of San Francisco.”



Scott Tandoi and Pauline Lee with their automated ceiling storage system © Photograph by Aaron Wojack for the FT

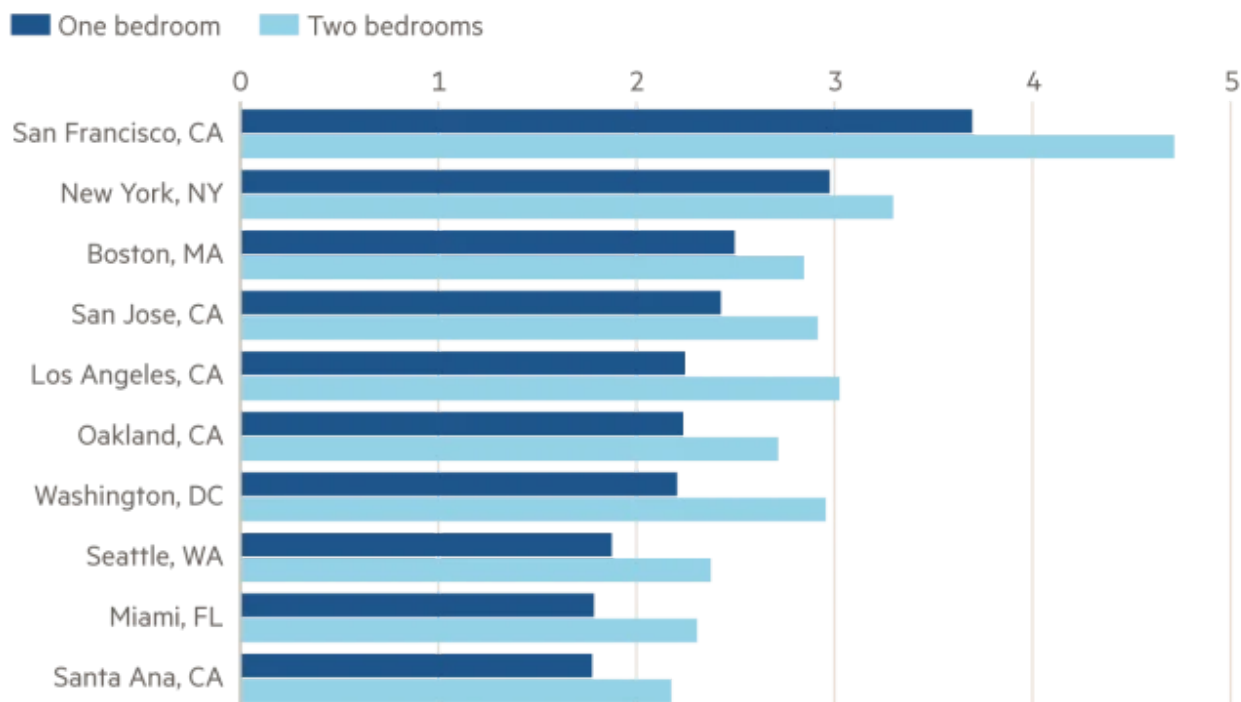
More for less

Space is tight in the most expensive city in the US. Rents here are even higher than in Manhattan. At \$1.6m, the median house price is [six times the national average](#). The soaring cost of living, and [rising homelessness](#), have led to a situation where \$6 coffees and \$20 salads are sold on streets filthy with trash and human waste.

San Francisco's lack of affordable housing is just about tolerable if you arrive here with a job at one of the world's biggest tech companies — the likes of Facebook, Google or Apple. Even then, buying a property is out of reach to most. Just to rent comfortably in San Francisco requires an annual income of \$164,000, [according to personal finance site GoBanking Rates](#). Those who earn less get creative, making homes out of bunk beds, recreational vehicles (RVs), dormitory rooms and micro-apartments.

Average monthly rental rates in the most expensive US cities

\$'000



Source: Zumper National Rent Report, June 2019

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Bumblebee's bright idea was to treat the ceiling as a fifth wall. By storing everything above head height, floors and walls are freed up, which makes even small flats feel more spacious. The company's plan is to refine its design and sell a mass-produced product that costs between \$6,000 and \$10,000 and takes just an hour to install. It is working with Veritas Investments, the largest landlord in San Francisco, to fit out more apartments across the city.

Co-founder Sankarshan Murthy, energetic in khaki shorts and T-shirt, says he started the company after moving from the east coast to the Bay Area to work as an engineer at Apple.



Scott and Pauline demonstrate the storage system © Photographs by Aaron Wojack for the FT

“I realised that the rents for a one-bedroom apartment in Mountain View were more than I was paying for a mortgage on a four-bedroom house in Baltimore,” he says. “So I was asking: ‘how do you get the most out of a smaller footprint?’ And I realised that when you rent you are making use of a two-dimensional floor plan and wasting the air and volume that you pay for anyway.”

Murthy is not the first local to come up with the idea of moving furniture out of the way. Fold-down beds are known as Murphy beds, after William Lawrence Murphy, the San Francisco-based inventor who patented ideas in the early 1900s.



The smart delivery system learns to deliver items without request © Aaron Wojack for the FT

Keeping everything in the ceiling, however, seems like a radically different way to live. “It’s easy to build attics,” says Murthy. “It’s easy to build beds coming out of the wall. The thing that’s hard is to create a system that knows what you store and which can bring it down when you need it.”

So far, only a handful of working Bumblebee apartments exist. People who have lived in them say it is fun to see the robotics at work and they enjoy the extra space. They emphasise how safe the systems feel. (Sometimes too safe. One snag, ironed out in early trials, were sensors that refused to lower furniture because they were convinced they could detect something that was not there.)



The Good Earth Commune (1970) © Chris Barham/ANL/Shutterstock

All of us had better get used to such radical ideas, claims Randy Shaw, author of *Generation Priced Out: Who Gets to Live in the New Urban America?* More of us will be living in ever-smaller spaces all over the world.

“I am a big fan of utilising small spaces — of micropods,” he says “The problem in San Francisco and in many cities is that it is not possible to build the sort of apartment buildings that you can put those units into because of laws restricting the kinds of properties developed.”

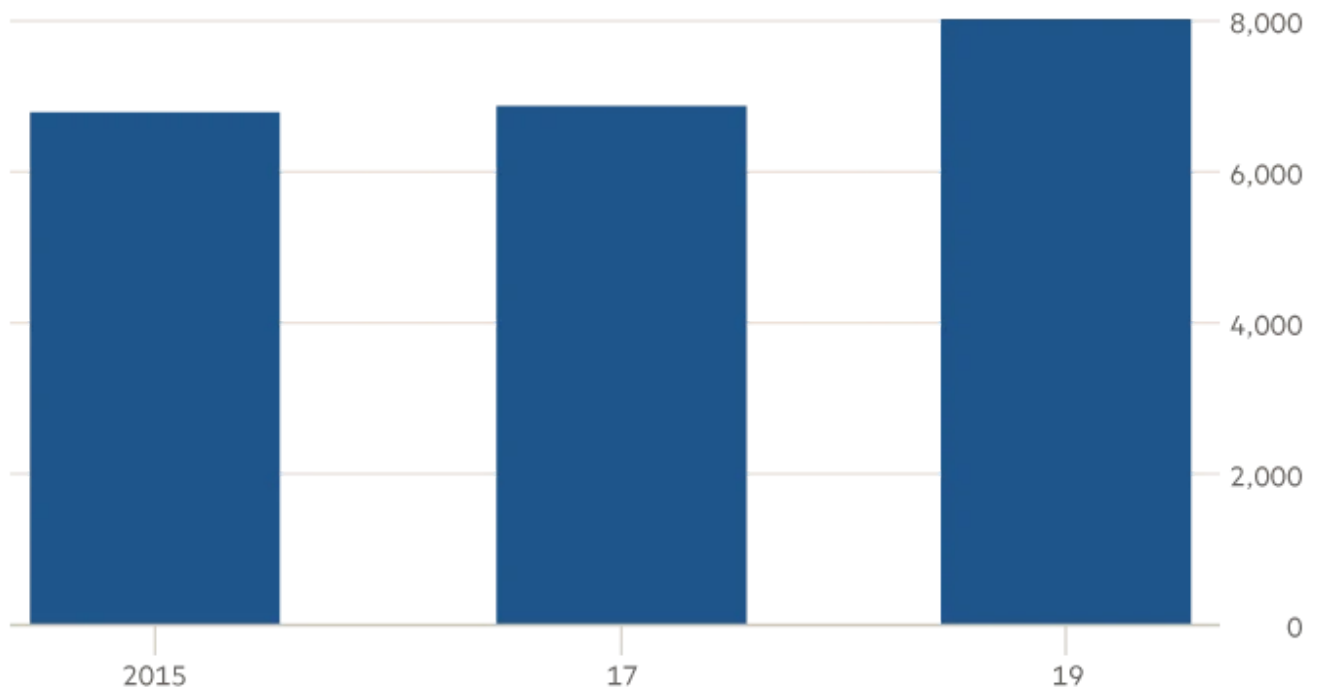
Live by the law

San Francisco’s housing squeeze did not start with the tech boom — although the influx of wealthy workers has exacerbated the problem. Rather, it is a legacy of restrictive zoning laws, created decades ago to limit building density — and to control who got to live where.

Zoning laws regulate the heights of buildings and their uses, which is why so many neighbourhoods in the city centre look more like suburban enclaves. Shaw says these laws had their origins in something few people in San Francisco like to talk about: racial segregation.

San Francisco homeless population

Total



Source: Applied Survey Research
© FT

“Zoning is connected to the fact that, until the 1960s, California permitted a racial covenant that allowed people to restrict who rented or bought property in the neighbourhood by race,” he says.

“After that was made illegal [in the 1960s], you start to see new zoning restrictions. They were used as another way to restrict who lived in an area.”

Re-zoning separated rich and poor, creating havens of family houses affordable mostly for wealthy white families. The project had a disproportionate effect on San Francisco’s poorer black community, which has dwindled from more than 13 per cent of the population in the 1970s to about 5 per cent today.

House & Home Unlocked



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Adding new homes will be difficult while zoning laws remain. Mayor London Breed, who took office in 2018, promised more developments when she was inaugurated, yet the housing supply remains limited. Residents knock back applications, claiming that San Francisco will be transformed into a New York-style city of steel and glass towers.

Shaw thinks some are more keen to protect high prices. Apartment developments need not turn San Francisco into New York, he says. “Look at the most iconic parts of San Francisco like Alamo Square or North Beach. Those areas have apartment buildings.”

Until more homes are built, prices are unlikely to fall. In the meantime, the variety of ideas for dealing with an overcrowded city will continue to grow — but they are unlikely to be appealing.



A commuter train passes a homeless encampment in Oakland © Jim Wilson/New York Times/Redux/eyevine

Crash in the car

Across the city, the number of people who live in vehicles has increased by 45 per cent in the past two years, according to official statistics. San Francisco is even planning to open a parking lot near Balboa Park, south of the city centre, that will act as a place for people to park overnight, with showers and bathrooms supplied.

The same phenomenon is evident right across the Bay Area. Along Landings Drive in Mountain View, right outside the headquarters of Google, rows of RVs are parked on the streets.

One resident, who asked not to be identified, works at a restaurant nearby and says he turned to RV living after finding local rents unaffordable. Google employees are among his RV neighbours, he says.



Recreational vehicles parked near Google's headquarters in Mountain View © David Paul Morris/Bloomberg

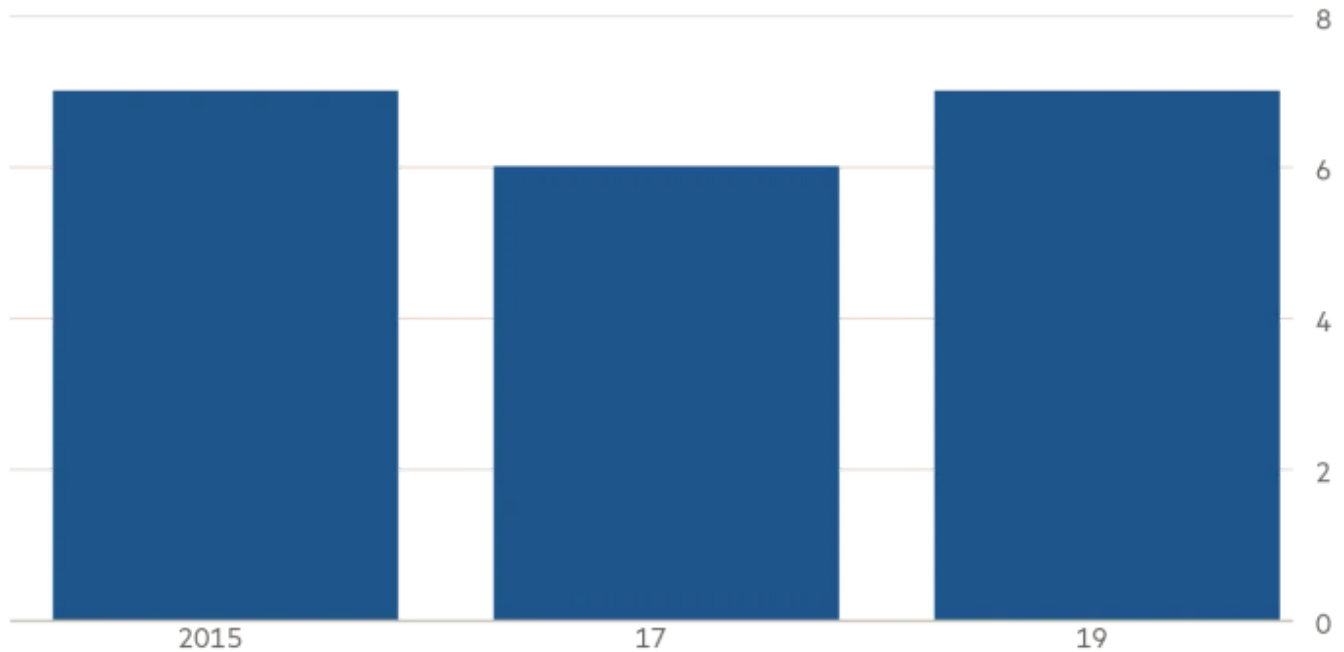
Elsewhere, the number of people moving out of the city and commuting in has also increased, although the housing crisis means prices in nearby cities such as Oakland are rising quickly, too. About 5 per cent of the working population is estimated to spend three hours or more each day commuting.

Those who want to stay in the city often opt for shared apartments. At the extreme end are co-living spaces and hacker houses, the sort of set-up that inspired the sitcom *Silicon Valley*. One of the largest is 20 Mission, whose founder and chief executive, Jered Kenna, made — then lost — a bitcoin fortune.

Tenants pay about \$1,500 per month for a small private bedroom and communal bathrooms, kitchens and outside space, which they share with dozens of others. Negev, another housing-dorm set up by an ex-Google employee, is known for attracting tech workers and would-be founders.

Unsheltered homeless population in San Francisco sleeping in vehicles

% of total



2015 n = 1,027; 2017 n = 967; 2019 n = 736. Percentages may not add up to 100 due to rounding

Source: Applied Survey Research

© FT

At 221 7th Street in downtown San Francisco, tenants pay nearly \$1,500 per month for a room with a fold-up bed and access to a shared bathroom. The chance to make friends and keep living costs down is attractive, though one new arrival says she moved into a hacker house only to leave days afterwards, dismayed at the state of the bathrooms.

Companies that offer co-living spaces emphasise the benefits of communal living. Elvina Beck, founder of Podshare, draws on history to describe her business renting out large bunk beds in shared rooms for up to \$1,200 per month. “The Maori, for example, originally lived in semi-permanent homes usually in groups of 10,” she writes on the company’s website. “Back in the 19th and 20th centuries there were female boarding houses,” she adds.

Opposition to micro-living ventures like hers tends to come from those who can afford not to live in shared housing, she says. “Podshare was born from the housing crisis. We get criticised as communist or dystopian, but it was created to solve the problem of affordability.”



A Podshare room

For now, sharing a room with four others, or a house with 40 others, or squeezing your belongings into a micro space, is considered a price worth paying for the chance to live in the San Francisco Bay Area. How long that lasts depends on how long the tech boom continues.

Back at the Bumblebee apartment, Tandoi believes the tech industry will keep luring young people to San Francisco, even if the cost of living makes it a difficult city to live in.

“It is unbelievable that people still want to come. But then, there are a lot of things about this part of the world that are unbelievable,” he says.

“Nothing is normal.”

Elaine Moore is the FT's deputy Lex editor. She lives in San Francisco

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