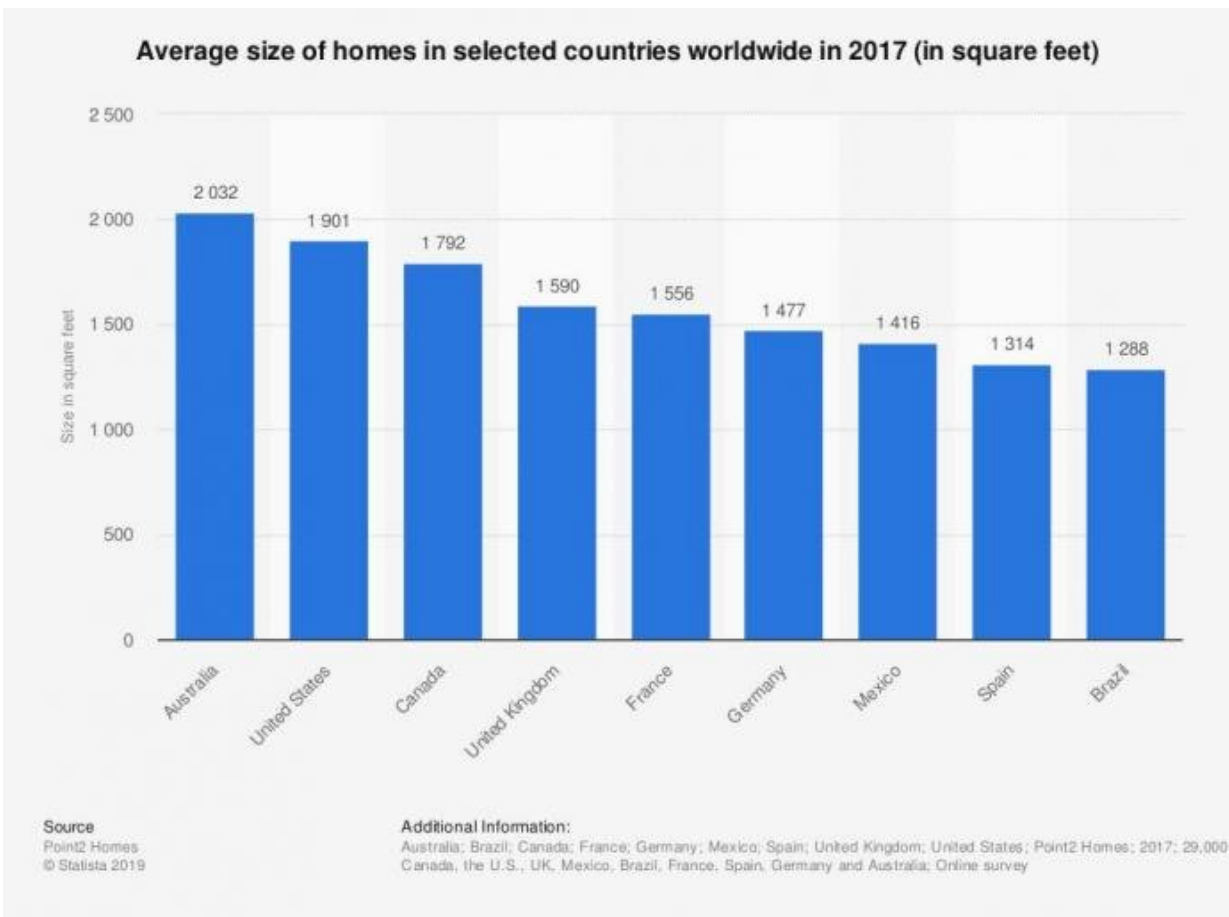


Downsizing the McMansion: Study gauges a sustainable size for future homes

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Credit: New Jersey Institute of Technology

What might homes of the future look like if countries were really committed to meeting global calls for sustainability, such as the

recommendations advanced by the Paris Agreement and the U.N.'s 2030 Agenda for Sustainable Development?

Much wider adoption of smart design features and [renewable energy](#) for low- to zero-carbon homes is one place to start—the U.N. estimates households consume 29% of global energy and consequently contribute to 21% of resultant CO2 emissions, which will only rise as global population increases.

However, a new scholarly paper authored at New Jersey Institute of Technology (NJIT) assesses another big factor in the needed transformation of our living spaces toward sustainability—the size of our homes.

The paper published in the journal *Housing, Theory & Society* makes the case for transitioning away from the large, [single-family homes](#) that typify suburban sprawl, offering new conceptions for what constitutes a more sustainable and sufficient average home size in high-income countries going forward.

The article surveys more than 75 years of housing history and provides estimates for the optimal spatial dimensions that would align with an "environmentally tenable and globally equitable amount of per-person living area" today. It also spotlights five emerging cases of housing innovation around the world that could serve as models for effectively adopting more space-efficient homes of the future.

"There is no question that if we are serious about embracing our expressed commitments to sustainability, we will in the future need to live more densely and wisely," said Maurie Cohen, the paper's author and professor at NJIT's Department of Humanities. "This will require a complete reversal in our understanding of what it means to enjoy a 'good life' and we will need to start with the centerpiece of the 'American

Dream,' namely the location and scale of our homes.

"The notion of 'bigger is better' will need to be supplanted by the question of 'how much is enough?' Fortunately, we are beginning to see examples of this process unfolding in some countries around the world, including the United States."

Reimagining "Sufficient" Size of Sustainable Homes

Cohen's article explores the concept of "sufficiency limits" for the average contemporary home—or, a rough baseline metric of "enough" living space to meet one's individual needs while considering various environmental and social factors, such as global resource availability and equitable material usage.

In the paper, Cohen reports that standardized building codes used in the United States and many other countries define minimally "sufficient" home size as 150 square feet for a single individual and 450 square feet for a four-person household.

However, from the standpoint of resource utilization and global equity, the maximally sufficient threshold is more significant.

Based on assessments of global resource availability and so-called total material consumption calculations developed by industrial ecologists and others, Cohen estimates that sustainability and equity considerations require that a home for a single person should be no larger than 215 square feet, and for a four-person family the maximum size should be approximately 860 square feet.

As a striking point of comparison, average home size in the U.S. today is 1,901 square feet—more than twice what could be considered sustainable.

Applying these sufficiency limits in the real world would mean a radical departure from the mindset that is common today in the American homebuilding industry: large cathedral-ceiling foyers, expansive porches, spare bedrooms, extra dining rooms, and a fundamental rethink of the McMansion-style homes that line the cul-de-sacs of the country's suburbs in general. However, it could spur innovation in the design of more space-efficient homes, a trend gaining popularity particularly among younger generations.

"Lifestyle magazines and websites, television programs, and other media today regularly highlight the benefits of smaller homes," said Cohen. "One of the most popular contemporary design trends focuses on minimalism and especially Millennials express a desire to live in cosmopolitan urban centers rather than car-dependent suburbs. In some cities, micro-luxury apartments are becoming a fashionable alternative."

Along with making the critical transition toward greener technologies, Cohen says exploring sufficiency limits in the design of future homes would help to begin aligning infrastructure planning with global sustainability targets, and address two interrelated—and in many ways perplexing—trends in wealthy countries like the U.S. ongoing since the 1950s: home size has been increasing while household size has been declining.

Over the past seven decades, the average size of a newly built single-family home in the country nearly tripled from 983 square feet in 1950 to 2,740 square feet in 2015. Meanwhile, the average number of people per household has decreased 24% (3.3 persons to 2.52 persons) due to falling fertility rates and the fading of residential arrangements in which extended families lived under a single roof.

So, what would the average newly built U.S. [home](#) look like if architects and the building industry followed the numbers and adopted sufficiency

limits?

In the U.S., average floor space per person would need to be reduced from 754 square feet to 215 square feet, which perhaps surprisingly, is roughly comparable to the amount of space available during the baby boom of the 1950s.

While Cohen acknowledges the myriad political, commercial and cultural challenges of imparting such a sufficiency ceiling on current housing practices, he highlights five examples that he asserts point to shifting sensibilities: the tiny-house movement in the United States; the niche market for substantially smaller houses and apartments in the Nordic countries; the construction of accessory dwelling units in west coast cities of North America; the growing popularity of micro-apartments in New York City and San Francisco; and the emergence of co-living/co-working facilities in Europe.

"Downsizing at such a radical scale may seem unrealistic today, but lifestyles are continually in flux and when looking back on our recent practices of spending such vast sums of money on overly large houses and creating vast separations between neighbors, thirty years from now we will in all likelihood be utterly dumbfounded," said Cohen. "The idea of spending endless hours mindlessly driving around in cars to reach houses with rooms that we rarely use, we can only hope, will become a faint memory."

More information: Maurie J. Cohen, *New Conceptions of Sufficient Home Size in High-Income Countries: Are We Approaching a Sustainable Consumption Transition?*, *Housing, Theory and Society* (2020). [DOI: 10.1080/14036096.2020.1722218](https://doi.org/10.1080/14036096.2020.1722218)

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