

# As an Ordinary Part of Daily Life: Micro-Living in Japan and Hong Kong



*Aysima Akin*  
2021

---





I would like to thank my thesis advisors Tomris Akın and Sevince Bayrak for their support, sharing, criticism, and sincerity during the research process, and most importantly, for encouraging me to put forward my own original expression. In addition, I would like to thank our project coordinator, Oral Göktaş, who sowed the seeds of my interest in the research topic of this dissertation, and the Volu-te\* team for their wonderful collaboration that made real group work possible in this enjoyable adventure. And lastly, I would like to thank my family for always being by my side and supporting me with their endless trust and love.





# Abstract

This dissertation focuses on the micro-living trend, which has been on the rise especially for the last 10 years. It has been deepened on the question of whether the idea of micro-living is a choice that better suits people's new habits or is it a necessity as people have to rethink and transform their lifestyle. In this context, the conditions that triggered the emergence of this lifestyle have been traced. The answers to the main question of the dissertation were sought through the example of Japan, which is known all over the world for its ingenious small space design solutions, and Hong Kong, which is one of the most densely populated places in the world and has incredibly small dwellings with inhumane living conditions. In the first chapter of the thesis, it was focused on the global conditions that led to the emergence of the micro living trend. In this context, the terminologies used for micro-living, and the emergence of this lifestyle are discussed in the historical context, and the relationship between the conditions that triggered the emergence of this idea in the past and the condition of present is discussed. The second and third chapters focus on the specific context, and the formal and informal micro living examples in Japan and Hong Kong, respectively. In these chapters, country specific conditions such as the geographical data, demographic structure, and cultural accumulations, were explored.

**Key Words:** Micro-living, Shifting Demographics, Changing Daily Lives, Solo Living, New Habits, Land Scarcity, Land Management, Micro Living in Hong Kong, Micro Living in Japan.

**Science Code:** 80107



## Özet

Bu araştırma, özellikle son 10 yıldır yükselişte olan mikro yaşam trendini odağına almaktadır. Mikro yaşamın içinde bulunduğumuz zamanın gündelik alışkanlıklarıyla daha uyumlu bir yaşam biçimi olması gerekçesiyle bir tercih mi, yoksa gündelik alışkanlıklarımızı sorgulamak ve değiştirmek zorunda olduğumuz için bir zorunluluk mu olduğu sorusu üzerine derinleşilmiştir. Bu bağlamda bu yaşam biçimini tetikleyen koşulların izleri sürülmüştür. Tezin ana sorusunu tartışmak için, tüm dünyada akılcı küçük mekan çözümleriyle tanınan, kültürel olarak az ile yaşamayı ve dünyada gecici olmayı benimsemiş Japonya, ve dünyanın en yoğun nüfuslu yerlerinden biri olan ve inanılmaz derecede küçük ve yetersiz koşullarda yaşam alanlarına ev sahipliği yapan Hong Kong örneklerine odaklanılmıştır. Tezin ilk bölümünde mikro yaşam trendini tetikleyen global koşullar tartışılmıştır. Bu bağlamda mikro yaşam için kullanılan isimlendirmeler ve bu yaşam biçiminin ortaya çıkışı tarihsel bağlamda ele alınmış ve geçmişte bu fikrin doğmasını tetikleyen koşullar ile bugünün koşulları arasındaki ilişki ortaya konulmuştur. İkinci ve üçüncü kısımda ise sırasıyla Japonya ve Hong Kong'taki özgün bağlam ile, resmi ve gayriresmi mikro yaşam örnekleri üzerine yoğunlaşmıştır. Bu bölümlerde Japonya'da ve Hong Kong'ta mikro yaşamı tetikleyen coğrafi koşullar, demografik yapı ve kültürel birikimlerin izi sürülmüştür.

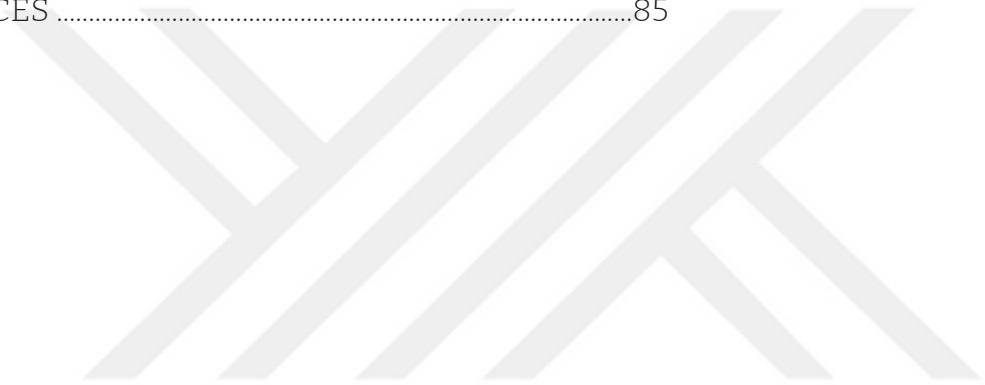
**Anahtar Kelimeler:** Mikro Konut, Demografik Dönüşüm, Değişen Gündelik Hayatlar, Yalnız Yaşam, Yeni Alışkanlıklar, Arazi Kıtlığı, Arazi Yönetimi, Hong Kong'ta Mikro Yaşam, Japonya'da Mikro Yaşam.

**Bilim Dalı Sayısal Kodu:** 80107

# Table of Contents

LIST OF FIGURES.....	VII
INTRODUCTION.....	1
GLOSSARY.....	9
CHAPTER 1: THE IDEA OF TAKING UP LESS SPACE.....	15
Micro, Tiny, Compact, Nano.....	15
Relative Minimum Space Requirements.....	22
Housing As a Global Crisis .....	26
Shifting Demographics and Rising Interest in Single Living .....	28
New Generation, New Habits.....	31
Times Of Uncertainty.....	35
CHAPTER 2: MICRO IN JAPAN.....	41
Acceptance of the Idea of Being Temporary.....	41
Being An Island Country.....	47
Population Density.....	47
More People & Less Area .....	59
Narrow Lands & Eel’s Nest.....	50
Keep Your Finger on The Pulse and Rebuild.....	52
The Age of Solo and Changing Lifestyles.....	54
CHAPTER 3: MICRO IN HONG KONG .....	63
Fast-Paced Cramped City Life.....	63
Dwelling As a Dream.....	66
Micro-Living as an Option or Impositon.....	68

Geography As a Critical Shaper of Housing	
Market.....	69
Market Dynamics and Government Policies.....	70
Informal Micro-Livings for Survival.....	74
CONCLUSIONS AND DISCUSSION.....	79
REFERENCES .....	85





## List of Figures

Figure 1 - Alternative Architectural Practices Research Book.....	5
Figure 2 - Formal and Informal Small-Scale Living Unit Typologies in High-Density Cities.....	13
Figure 3 - Photo of U.S. Pilots Stand in Front of a Cluster Of Dymaxion Deployment Units, North Africa (1944), and Plan of The Deployment Unit.....	16
Figure 4 - Left: Fourth Archigram Magazine 'Amazing Archigram / Zoom', Right: Warren Chalk, Drawings of 'Plug-in Capsule Homes', 1964.....	17
Figure 5 - Left: Nakagin Capsule Tower Tokyo 1972, Right: Isometric Plan of The Capsule Measuring 2.5 M X 4 M X 2.5 M .....	18
Figure 6 - Some Books About Nano, Micro, Small and Tiny Houses, and Their Cover Images.....	19
Figure 7 - Between Cage Houses and Rabbit Hutches.....	20
Figure 8 - Mayor's Answer to Minimum Space Regulations.....	24
Figure 9 - Micro-Living on Media.....	25
Figure 10 - Love2 House by Takeshi Hosaka Architects..	26
Figure 11 - Studio Flat By Hiroyuki Ogawa Architects.....	26
Figure 12 - Average Number of People Per Household by Country, in 2010 and in 2019.....	28

Figure 13 - The Cover Image of Time Magazine: The Childfree Life.....	30
Figure 14 - Illustration of Millennials.....	32
Figure 15 - Homeownership Tendency of Millennials.....	34
Figure 16 - Monopoly for Millennials.....	35
Figure 17 - Illustrations by Patricia Doria.....	36
Figure 18 - Tatami Measurement.....	41
Figure 19 - Image of Tokyo's Demolition.....	42
Figure 20 - Nagasaki City Before and After the Nuclear Bomb Attack.....	43
Figure 21 - Tower House by Takamitsu Azuma.....	45
Figure 22 - Row House (Azuma House) by Tadao Ando.....	45
Figure 23 - Timeline of Japan's Thresholds for Micro- Living .....	46
Figure 24 - Percentage of Surface Area by Use Japan And Tokyo.....	47
Figure 25 - Photo by German Photographer Michael Wolf, "Tokyo Compression" .....	48
Figure 26 - The Very Crowded Metro and The Workers Who Are Tasked with Pushing People To Fit Into The Subway During Rush Hours Called "Oshiya" ..	48
Figure 27 - Skyline of High-Density Tokyo City.....	49
Figure 28 - Average Home Size and Population Density in London, Tokyo And Hong Kong.....	50
Figure 29 - Average Living Spaces in Tokyo.....	50
Figure 30 - Some Examples of Houses on Small Land; Left: "flag type" Atelier Bow Wow, Right: "eel type" Lucky Drops by Atelier Tekuto.....	51



Figure 31 - The Shikinen Sengu Ceremony.....	52
Figure 32 - Changes in The Distribution Share of Existing Housing.....	54
Figure 33 - Household Survey by Census.....	55
Figure 34 - Lifestyle of Singles, By Survey.....	56
Figure 35 - A Single-Seat Restaurant in Tokyo.....	57
Figure 36 - Solo Karaoke Box in Tokyo.....	58
Figure 37 - Solo Cinema.....	58
Figure 38 - Single Seat Restaurant.....	58
Figure 39 - Book and Bed.....	58
Figure 40 - Life in Net Cafe.....	59
Figure 41 - Shelters Provided by Kanagawa Province for Those Staying in Internet Cafes That Are Requested to Be Closed Due to the COVID-19 Coronavirus Outbreak.....	60
Figure 42 - Photo by Wing Ka Ho Jimmi.....	63
Figure 43 - Cityscape: Hong Kong Night Photo by Wing Ka Ho Jimmi.....	64
Figure 44 - Laundry Art, Photographs by Wing Ka Ho.....	65
Figure 45 - Left: Gini Coefficient of Income Inequality, Mid2000s. Right: House Price/ Household Income.....	66
Figure 46 - Stunning Photos of High-Rise Apartments in Hong Kong.....	67
Figure 47 - Photo by German Photographer Michael Wolf, “Back Door”.....	67
Figure 48 - Completions of Flats with Saleable Area Less Than 40 M2 2012–2016.....	68

Figure 49 - Stock of Public Rental Housing and Home Ownership Scheme Flats In 2020 By Flat Size.....	69
Figure 50 - Mountainous Topography of Hong Kong.....	70
Figure 51 - An Example of a Couple Who Had to Live Apart: Ma Hoi-Shing (69), Lives Most of The Year Separated from His Wife Who Cannot Live in This 5.5 Sqm Flat Due to Health Problem .....	71
Figure 52 - An Illustrated Cross Section Of Hong Kong's Infamous Kowloon Walled City.....	74
Figure 53 - Transforming an Ordinary Apartment into Subdivided Flat.....	75
Figure 54 - Typical kitchen-toilet complex of a Subdivided flat.....	75
Figure 55 - A Floor Plan of the 'Coffin' Home. Illustration By Rachel Suming.....	76
Figure 56 - Life Inside Coffin Home.....	77
Figure 57 - Life Inside Cage Home.....	77





# Introduction

Once upon a time, there was a huge utopian dream called “compact living”. Today, this dream is rising from the ashes with all its reality. Micro-apartments, compact units, nano capsules, tiny houses, and many more that are known by different names gradually began to surround in high density city centers. These units are one of the spatial representations of the ideology of “downsizing” and “taking up less space”. It basically suggests using the space at maximum efficiency by reducing the size of the personal spaces. This trend spreading around the world raises some questions. Is the idea of micro-living a choice that better suits people’s new habits or is it a necessity as people have to rethink and transform their lifestyle? And what are the changes, choices, or impositions that trigger people to get closer to the idea of micro-living?

Undoubtedly, this transformation is quite radical. At this point, there is a delicate balance between what is given up and what is gained. You have reduced your living spaces, now you take up less space in limited and precious areas in cities. So, what are the things you have gained? Maybe time, money, efficiency, or freedom? If the story gets a little rewind, it is inevitable to see that one of the foundations of downsizing is based on the increase in living rates in the dense urban centers and the rising value of the land. The idea of “getting smaller” began to emerge as an alternative solution because the land could not be expanded, and population density could not be controlled. In addition to these, there are huge differences between the land and housing prices in the cities. A flat in a central point in Istanbul is 4000 \$ per m<sup>2</sup>, while it is 21000 \$ in Hong Kong, 4900 \$ in Madrid and 11300 \$ in Tokyo. As the value of each square meter gradually increased, some cities tried to find the solution with the idea of “downsizing.” When focusing on the questions of “Are the houses really getting smaller?”, and “How much space are we taking up in the world?”, it is inevitable to observe that the shrinkage in Japan and Hong Kong is quite shocking. The average living space per person is 61 m<sup>2</sup> in the USA, 40 m<sup>2</sup> in Europe and the UK, 22.3 m<sup>2</sup> in Japan and 13 m<sup>2</sup> in Hong Kong. These small spaces in Hong Kong and Japan are well below the minimum living space in many countries. **For this reason, this dissertation specifically focuses on Hong Kong and Japan.**

On the other hand, our habits and daily lives are changing with the flow of time. Now, digital and social networks are becoming more and more important, and our connection with materials is not as strong as before. This situation is increasingly distancing people from the idea of taking root in the world, and some new lifestyles are emerging that object to the idea of being permanent. The deep uncertainties and sudden changes of the current period further reinforce this situation. So much so that the argument put forward today may be outdated tomorrow. The clearest example is that even the research and inferences represented in this dissertation, which started to be written before the Coronavirus pandemic, may lose their validity because everything started to change and transform with the pandemic. For example, a few months ago, while discussing the decrease in the time spent at home and the constant movement of people, nowadays everything turned upside down with the pandemic and suddenly all the people locked themselves in their homes.

In addition to these, the demographic structure has changed significantly with the increase of individuality in the society, rising of the marriage age, and the increase in the number of one-person households. In the face of all these situations, the existing housing stock is quite inadequate. It is clear people cannot live like people in the '90s. Especially new generations such as generation Z and generation alpha have no chance to continue their personal growth in bigger spaces or family heirloom homes where they can accumulate many things over time. Whether these changes are a part of today's dynamics, or a necessity is quite questionable, but it is certain that; they all bring people closer to the idea of micro-living.

While the idea of micro living is becoming widespread all over the world; the situation is slightly different in Japan and Hong Kong. Here, it is not just a brand-new fancy trend. There is much more. It is also an ordinary part of everyday life that rolls in the continuity of the idea of being temporary. The dynamics of the emergence and spreading of micro-living in these regions are very unique and different from the other countries. Beyond the requirements, some traditional elements also come into play. In this context, **what are the triggering conditions in Japan and Hong Kong that make the idea of micro-living an ordinary part of daily life? What are the dynamics that make these regions different from others, and what can we learn from these?**

There are many reasons why the Japanese are more easily accept the idea of micro living. Japan is an island country that is only 30% flat and habitable,

frequently exposed to natural disasters such as earthquakes and typhoons. Such natural threats have greatly triggered their concentration on the idea of impermanence (mujokan). Sites are often subdivided as they are passed on and resulting in plots with very narrow and irregular geometries called Eel's Nest. Besides, the passion of Japanese for new things and innovations is obvious. Unlike other countries, Japanese homes lose their value over time and become completely worthless within 20 to 30 years. When a household moves out, the house has no resale value. Only the land is considered to have resale value. Thus, with the move of the household, the house is demolished and a new one is built in its place. All these constraints have created a laboratory for architects to create extraordinary designs. On the other hand, the passion for being temporary and the culture of rebuilding is highly related to the Zen culture, which focuses on the concept of living only the fundamentals and not to excess. There is a Japanese saying: "You only need half a tatami mat to stand on, and a full tatami mat to lie down." This saying does not only describe a measured place, it also defines a kind of living practice.

The situation in Hong Kong, one of the most congested cities in the world, is no different than in Japan. They have similar geographical constraints like being an island county, having rugged geography, and they have familiar cultural features. But in Hong Kong, areas are really getting smaller, and the scale of the shrinkage is now at a traumatic level. So much so that as of 2017, approximately 200 thousand people live in cubic/cage/coffin houses with a small area even under half of a standard parking lot, officially explained as "with inadequate living conditions". Although the reasons for these bad living conditions are based on being an island country and therefore unable to expand, there is actually much more; bad land management. 75.6% of the land area in Hong Kong has been identified as an unbuilt area for various geographical reasons and only 3.7% of the built area is zoned as a residential area. In addition, the state owns all the lands, and these lands are rented to private companies and organizations for 50 years by auction. With the method of sale by auction, land prices and rents have reached exorbitant levels, and the housing problem in Hong Kong has become "a problem for everyone". Then the government looks for a solution with the idea of getting smaller. As a result of the policy of downsizing, one side of the city is covered with micro-apartments, while the other side is covered with coffin houses that occupy less space than a parking lot plot. If your financial possibilities are better, you can buy a capsule pod that is the same size as the cage house but more hygienic

and comfortable one. It is an improved version of the spatial quality and technological facilities of the cage houses.

In the case of Hong Kong and Japan, micro-living is not just a term that allows placing the maximum number of people in a limited space. This concept does not just refer to the size of the area you occupy on the earth. It also whispers something about existential issues: new habits, shifting demographics, technological developments, traditional factors, relationship with stuff, connection with nature, lessons learned from the past, religious rituals, the idea of being permanent, and more. All these dynamics defined a unique living practice, and it was a kind of micro-living.

During the research process, besides the main question of whether micro-living is a choice or a necessity, new questions were generated with the deepening of the research. With the exploration of the specific context in Japan and Hong Kong, new questions arose in parallel with the main question of the dissertation such as: “What are the triggering conditions in Japan and Hong Kong that make the idea of micro-living an ordinary part of daily life?”, and “What are the formal and informal examples in these geographies? Various methodologies were used to seek answers to these questions. Glossary has been used as a tool to trace the reasons behind micro-living terminology and naming variants. Each living and dwelling form in this glossary defines a micro-living in its essence, and each naming carries important clues as to whether micro life is a choice or a necessity. In addition to the glossary, diagrams were produced with data collected throughout the entire research. These diagrams have allowed to deepen the subject, branch out the research, and generate new questions and speculations. In addition to the discussions of actors such as Patrik Schumacher, Vera Kichanova, who advocate that micro-dwelling can be an appropriate response to the housing crisis for a certain segment, Ella Harris and Dr. Mel Nowicki’s tight criticisms of micro-living were also included. As another method, interviews with people living in incredibly small spaces by news channels such as BBC, CNN, VOX, and some documentary films such as *Undulating Things* directed by Bo Wang and Pan Lu Many were examined in order to collect data on everyday life and characteristic formal and informal examples in Japan and Hong Kong. In addition, statistical data shared by The Government of The Hong Kong Special Administrative Region and Japan were examined, and speculations were made on the size of the shrinkage and living conditions in these geographies.



It should be emphasized that, within the scope of the Alternative Architectural Practices graduate program, a comprehensive research focused on small-scale living units under the theme of “Small-Scale Decent Change” was carried out in parallel with the thesis research process. In this period, a research book<sup>1</sup> was created by compiling these studies, and it shared as open source. (Figure 1) This research process had a great impact on the emergence of the research question. In the second semester, a micro living unit called Volu-te was designed, which is located in the leftover voids of dense cities such as Istanbul. The design book<sup>2</sup> has also been published as open source. It should be emphasized that, the structure of the dissertation was created with the existence of the data obtained in these research processes, and therefore it did not start with a basic discussion of micro living.

In this context, a comprehensive literature review focusing on micro-living was conducted. This literature review comprises the research from the 1970s to the present, and due to the fact that the subject is a recent study, it mainly consists of the studies conducted in the 2010s. In order to collect data on a global scale, studies dealing with the situation in Europe, especially the UK were examined. In addition, in order to discuss the main question of the dissertation, it had been focused on studies examining the country-specific situation in Japan and Hong Kong. In the studies examined in this literature review, it has been observed that micro-living is handled either with a very positive and Western perspective, or with dystopian scenarios based on very harsh criticism and negative examples. The point that distinguishes this dissertation from the other studies is that all these situations and different perspectives are considered together in order to seek an answer to the main question of the thesis, whether micro-living is a choice or a necessity. In this context, the research question was examined through the unique situation in Japan and Hong Kong, which are two extreme examples. In the first chapter of the dissertation, it is aimed to discuss the idea of micro-living on a global scale. In this part, the factors that led to the emergence and spread of micro-living such as shifting demographics, new generations, new habits, increasing population density in cities, and increasing property prices have been examined in a western perspective that have relatively better conditions. In the second and third chapters following the general framework, the examples of Japan and Hong Kong are focused on in order to shed light on the main question of the research. It should be emphasized that this dissertation is not intended to make a comparison between the global situation and the examples of Japan

1. Alternative Architectural Practices Research Book. Available at: <https://www.yumpu.com/en/document/read/65263911/aap-smal-scale-decent-change>

2. Alternative Architectural Practices, Volu-te Design Book. Available at: <https://www.yumpu.com/en/document/read/65263933/aap-volute>

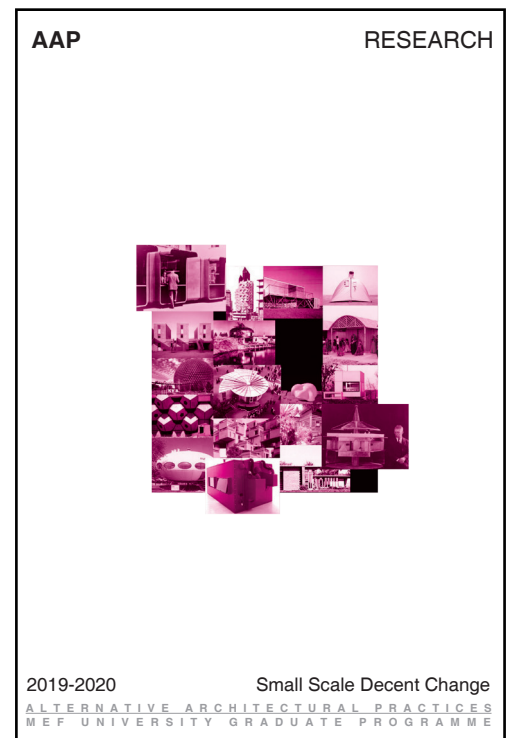


Figure 1: Alternative Architectural Practices Research Book.

and Hong Kong. Beyond that, it is an attempt to examine the conditions that separate Japan and Hong Kong from each other and from the global situation. In this context, could the examples of Hong Kong and Japan, where the idea of micro-living has been maintained for a long time with its legal or illegal cramped living units with bad living conditions on the one hand, and with its compact units that inspire architectural practice with their ingenious designs on the other, be a guide for understanding micro-living more deeply? And could this living style be adapted to other cities?







# Glossary

You will often see the following dwelling forms in this dissertation. In order to deepen on the main question, whether micro-living is a necessity or a conscious choice, it is important to explore the meaning of these terms used to describe these formal or informal small-scale living unit typologies (Figure 2) that emerge in dense urban environments around the world. It will be observed in later chapters that the meanings of these terms whisper clues about the way of life they offer or impose, and the political, cultural, economic, and technological conditions of the context in which they exist. Thus, these clues will shed light on how we came to the idea of a small-scale living unit.

**Small House:** According to the Oxford English Dictionary small means limited size or quantity and narrow.<sup>3</sup> In architectural terminology, the definition of small house is used for houses smaller than 93 square meters.<sup>4</sup> While it can be located with self-sufficient infrastructure in the suburbs, it can also settle in lands with small floor areas in dense cities. It is quite similar to another American concept “Tiny House”, but they can be distinguished from each other in terms of size.

**Tiny House:** The term tiny is used in architectural terminology for houses with dimensions of less than 37 square meters and beyond that, it also represents an architectural and social movement that advocates living simply in small houses.<sup>5</sup> The Tiny House trend was born in the United States and started to draw attention, especially with a series of small houses built after Hurricane Katrina in 2005. Then, with the 2008-2012 Global Economic Crisis, the idea of living in smaller and affordable houses with less furniture and less damage to the environment has gradually spread.<sup>6</sup> And especially in the last 10 years it has been associated mainly with living in the rural and has attracted the attention of the whole world who longs for this type of life.

**Micro House/Unit:** According to the Oxford English dictionary, a term formed by the adjective micro indicates that it usually has microscopic dimensions, unlike those that begin with macro and mega.<sup>7</sup> It is frequently used in naming

3. “small, n.1”. OED Online. March 2021. Oxford University Press. <https://ezproxy.mef.edu.tr:2313/view/Entry/182403?rkey=zjLs9z&result=1> (accessed May 20, 2020)

4. Tom Rubenach, “Compact Living: Benchmarking the Liveability of Micro-Housing for the Sydney Market”, Byera Hadley Travelling Scholarships

5. Ibid.

6. Ibid.

7. “micro-, comb. form”. OED Online. March 2021. Oxford University Press. <https://ezproxy.mef.edu.tr:2313/view/Entry/117905?rkey=3L3XHr&result=7&isAdvanced=false> (accessed May 20, 2020).

8. "nano-, comb. form". OED Online. March 2021. Oxford University Press. <https://ezproxy.mef.edu.tr:2313/view/Entry/124974?rskey=Vltu7G&result=2&isAdvanced=false> (accessed May 20, 2020).

9. "capsule, n. and adj.". OED Online. March 2021. Oxford University Press. <https://ezproxy.mef.edu.tr:2313/view/Entry/27609?rskey=gFh6Uh&result=1&isAdvanced=false> (accessed May 15, 2020).

the branches of science and technology where small-scale subjects are studied and microscopes are used in these studies. In this context, the use of the term micro to describe a dwelling refers to a living unit that does not have a certain definition based on square meters but has rather small dimensions. In addition, due to their frequent use in the field of science and technology, it creates an image of a living unit generally located in a dynamic urban area with the latest technological equipment and infrastructure and produced with innovative materials.

**Nano House/Unit:** It is quite similar to a micro house. The difference between the terms nano and micro can be attributed to the size of these units due to the fact that a nanometer is 1000 times smaller than a micrometer.<sup>8</sup>

**Capsule:** According to the Oxford English Dictionary, it is derived from the Latin word "capsula" which means small box or case. It also means compressed; small, and compact. The term is used in many scientific types of research such as physiology, botany, chemistry, medicine, space engineering.<sup>9</sup> Its equivalent in the field of architecture emerged largely through the utopian radical architectural experiments of groups such as Metabolists and Archigram in the post-World War II era. Its frequent use in space science has caused it to make an advanced technological call, and thus the capsules, which are described as living units of the future, have frequently taken place in utopian projects. It is often used to describe prefabricated living units that can be stacked into a megastructure and receive service from it, or individually self-sufficient, adaptable, expandable, and essentially capable of responding to human desires.

**Bedsit / HMO (House in Multiple Occupation):** After the two world wars, the housing shortage had become one of the most important problems in Britain, as in many parts of the world. The effort to live in expensive and crowded cities, the increasing tendency to live alone and individualism in contemporary Western society have caused a decrease in the demand for traditional boarding houses and an increase in common types of housing. Bedsit, one of these dwelling types and a common concept in the UK, emerged by dividing dwellings into smaller units to provide low-cost accommodation. Each tenant has its own room, but facilities such as the bathroom and kitchen are generally shared. The term bedsit refers to the living unit that belongs to the tenant,

not the building itself. The entire building containing bed sites used by tenants from different households is called HMO.<sup>10</sup>

**Single-room occupancy:** It is a very similar term to HMO's. Single-room occupancy (SRO) housing is a form of dwelling that once originated in New York City and then spread to other American cities. Most such dwellings contain single rooms and shared facilities such as kitchen and bathroom on a common floor.

**Subdivided Flat:** It is a type of living unique to Hong Kong. In order to accommodate more people, the original walls of an ordinary apartment are removed and divided into several sub-flats with dividing elements. The average size of the subdivided flats is 132 square meters and the average living space per person is 55.3 square meters. New kitchens, bathrooms, and infrastructure systems that will support these spaces are integrated into the sub-flats.<sup>11</sup> These renovation interventions are controlled according to standards set by the government. But it is quite clear that these regulations are seriously neglected.

**Coffin Home/Cubicles:** Coffin Home is a Hong Kong-specific living practice, which is created by stacking wooden boxes with a floor area of less than 2 square meters on top of each other and side by side in an ordinary apartment. Life is depressingly poor in these coffin-like boxes, which provide very bad housing conditions in terms of hygiene, ventilation, security, fire protection, etc.<sup>12</sup>

**Cage Homes:** Cage homes are another Hong Kong-specific living practice that measures approximately 180 x 60 cm, surrounded by a metal cage, and has an area only for sleeping. Except for a few personal items hanging from the wires of the cage and a mattress on the floor, there is no space to store any items. Bathrooms are mostly shared and often there is no kitchen. The life in cages stacked one on top of the other and side by side in the space, which looks like an ordinary apartment from the outside, reveals the seriousness of the housing problem in Hong Kong.<sup>13</sup>

**Kyosho Jutaku:** Jutaku means "house" in Japanese. Kyosho Jutaku is the Japanese variation of the micro house. This phenomenon, widespread in Japan, emerged with the dramatic shrinkage of land sizes after the burst of the Bubble

**10.** Chiara Briganti, and Kathy Mezei, eds. *Living with Strangers: Bedsits and Boarding Houses in Modern English Life, Literature and Film* (London: Bloomsbury Academic, 2020).

**11.** Daniel Dwan, Meghan Sawicki, Jeffrey Wong "Subdivided Housing Issues of Hong Kong: Causes and Solutions", Hong Kong: Hong Kong Institute of Education, (2013).

**12.** Ibid.

**13.** Ibid.

**14.** Cathryn Klasto, "Tokyo's Kyōshō Jūtaku: Nature through the Inside, Outside and the In-Between," *Interiority 2*, no. 2 (2019): pp. 155-176, <https://doi.org/10.7454/in.v2i2.63>.

Economy in 1992 and the growing population. It offered very small dwellings for people who would like to continue living in the greater Tokyo area.<sup>14</sup> These houses provide compact living spaces with their awkward geometries and rational solutions that cope with small, shapeless plots and many restrictive external conditions.





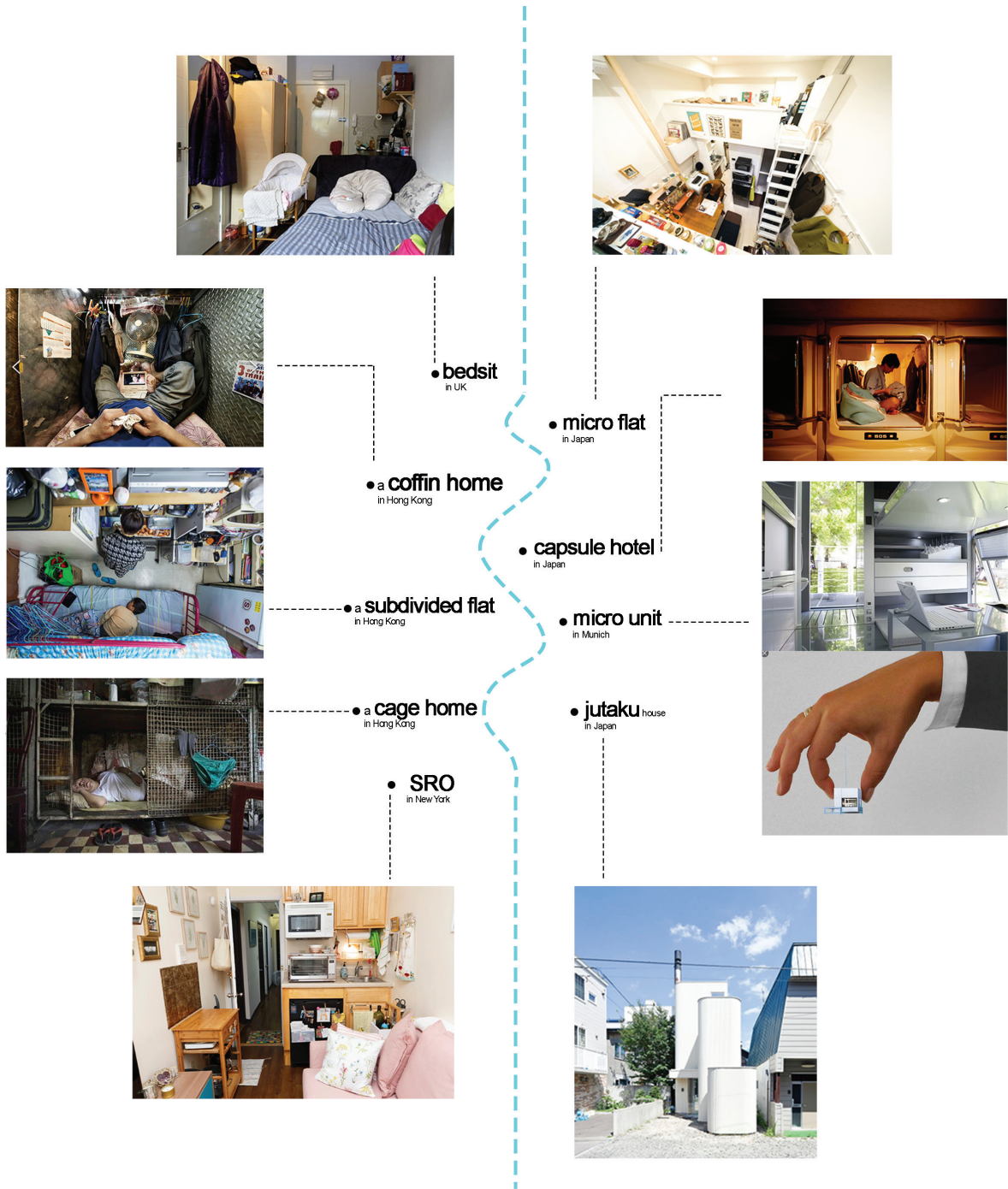


Figure 2: Formal and Informal Small-Scale Living Unit Typologies in High-Density Cities



# 1. The Idea of Taking Up Less Space

# 01

## Micro, tiny, compact, nano...

The micro-living trend has been on a rapid rise especially in the last 10 years. This living scenario is not a brand-new invention that proposes to leave a minimum mark on the planet. If someone tries to trace the roots of micro-living, it is quite conceivable to relate this living scenario from the early stone age shelters to the tents of the American natives called tepees, from the igloos of Eskimo to the ascetic monk cells in the context of its concern for meeting only basic human needs. However, in order to better understand the idea of micro-living spreading in urban areas today, it may be more sensible to focus on the 20th century and later, which can be marked as the beginning of the small-scale living trend after urbanization.

In the 19th century, there was a significant population increase in European cities with the rapid urbanization after the industrial revolution. Due to the heavy destruction experienced during World War I, the lack of housing in the cities became a serious problem for the growing population. So much so that the International Congress of Housing convened in Paris in 1928 defined this issue as one of the most urgent social problems to be resolved. Cities had to be quickly rebuilt in order to recover quickly and return to the former stable state of life. This restructuring meant a serious financial obligation. In order to reduce construction costs and make housing affordable, it was necessary to simplify construction methods, materials and design, and most importantly, set design standards.<sup>15</sup> In this context, the idea of a minimum space that provides people a decent living condition has become an intense subject of debate since the post-World War I. So much so that the focus of the 1929 conference of the Congrès International d'Architecture Moderne (CIAM) held in Frankfurt, which was a series of meetings where important architects or urban planners of the period from different countries such as Le Corbusier and Josef Frank discussed the city problems especially in the western world, was based on the idea of "Das Existenzminimum" (Minimum existence). At this congress, minimum area typologies that could meet the needs of the average resident were discussed.<sup>16</sup>

15. Karolina Skalska, "“Existenzminimum” - The rise of an idea." In *A house in a city : properties of an architectural thing.*, ed. Anna Mielnik, (Kraków, Poland: Wydawnictwo Politechniki Krakowskiej, 2016), 43-49.

16. Ibid.

17. Karel Teige, *The Minimum Dwelling*, trans. Eric Dluhosch (Cambridge, MA: Chicago, 2002), 32.

18. Richard Buckminster Fuller, *Your Private Sky: R. Buckminster Fuller: the Art of Design Science*, ed. Joachim Krausse and Claude Lichtenstein (Baden: Müller, 1999), 212-220.

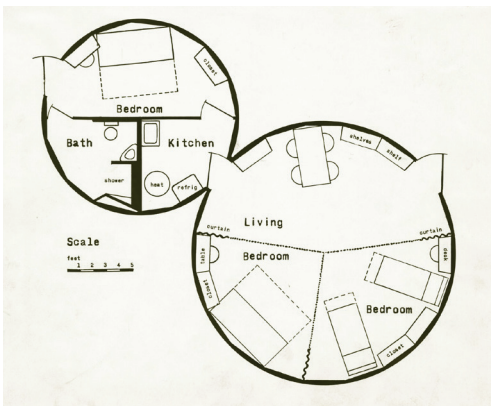
19. Rory Stott, "The Paradoxical Popularity of Jean Prouvé's Demountable Houses," (ArchDaily, February 23, 2016), <https://www.archdaily.com/782589/the-paradoxical-popularity-of-jean-prouves-demountable-houses>.

20. Peter Cook, *Archigram* (New York, NY: Princeton Architectural Press, n.d.), 44.

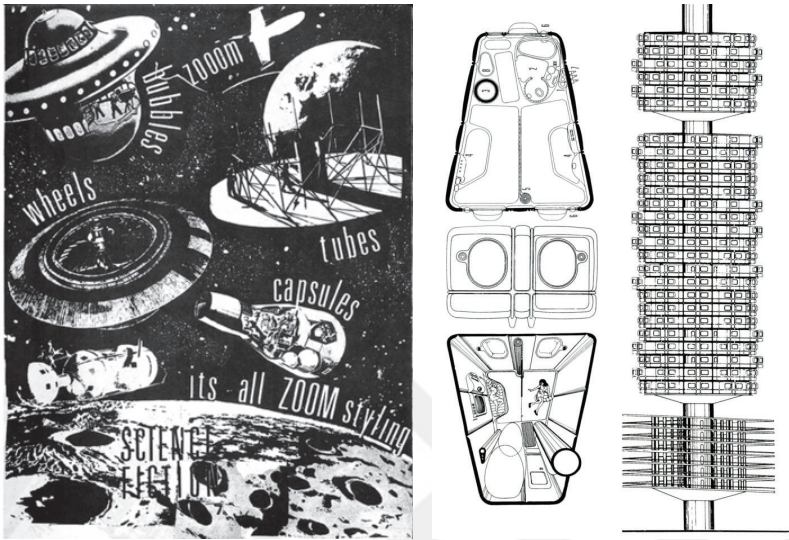
In the 1920s, architect Alexander Klein contributed to these discussions with a study called "Kleinwohnungen" (small apartments), following a method based on objective data for the minimum house such as the ratio between the gross floor area of the house and the number of beds, the ratio between the area used and the gross floor area of the house. Then in 1932, Karel Teige published a book called *The Minimum Dwelling*. In this book Teige defined the minimum dwelling as a new typology, not a small and reduced quality version of a popular conventional apartment or a so-called minimum apartment with uninhabitable living conditions, but a result of the rationalization of the production process combined with standardization and mass production practices.<sup>17</sup>

21 years after the war, a second world war occurred, and the world was turned upside down again. The war caused great destruction, and the buzz of the need for small-scale emergency shelters gradually began to come to the fore again. One of the most striking examples is the small-scale, low-cost, lightweight emergency shelter units called the Dymaxion Deployment Unit (Figure 3). These units were designed by architect-inventor Buckminster Fuller in 1940 with the British War Aid organization's call for a shelter for military members to stay in during the war.<sup>18</sup> In the post-war period, fast, economical, functional, and adaptable housing designs were made an urgent priority for cities that are planned to be rebuilt in many parts of the world. As an example from Europe, in response to a government order for post-war reconstruction in France, Jean Prouvé has made significant work on mass-produced, fast-built, affordable, adaptable housing.<sup>19</sup>

On the other hand, a striking example of post-war utopias comes from the avant-garde London-based architectural group Archigram. *Capsule Homes* designed in 1964 was based on the idea that a series of prefabricated and easily assembled units would come together and connect to a mega structure to form an entire city (Figure 4). The design's inspiration was the space capsules with their ergonomics and technological sophistication. The main idea is the concept of living in a space capsule, focusing only on basic needs and reducing the personal living space. Individuality was brought to the forefront with these living units that can fit only one or two people. Parts of the capsule would be designed to be updated according to the user's needs and technological developments. Thus, the term 'capsule', which will be used frequently in later projects, was first used in *The Amazing Archigram 4: Zoom* issue, published in 1964.<sup>20</sup>



**Figure 3:** Photo of U.S. Pilots Stand in Front of A Cluster of Dymaxion Deployment Units, North Africa (1944) , and Plan of The Deployment Unit (Source: MoMA)



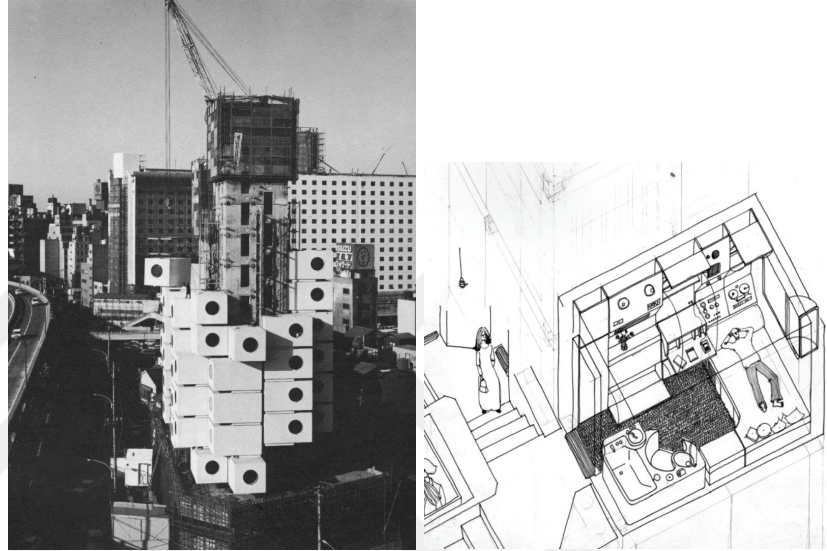
**Figure 4:** Left: Fourth Archigram Magazine 'Amazing Archigram / Zoom', Page 6 (Source: Archigram Archives) Right: Warren Chalk, Drawings Of 'Plug-In Capsule Homes', 1964.

Another example comes from Asia, the other part of the world. In the 1960s, the post-war Japanese architectural movement “metabolism” emerged. Members of the metabolist movement made up of various architects, designers and urban planners argued that Japanese cities and buildings to be rebuilt in the post-war period should be designed as living organisms that can grow and change according to the needs of individuals of the new age. With the influence of this movement, many striking designs of capsules attached to megastructures were made, but most of those designs were not realized and remained examples of utopian paper architecture. As an exception, the Nakagin Capsule Tower designed by Kishō Kurokawa is one of the projects implemented (Figure 5). In his book “Metabolism in Architecture” written in 1977, Kurokawa states that capsule architecture derives from the idea expressed in “Homo Movers” published in 1969. Kurokawa uses the term Homo Movers for urban nomads in transition. He defines this class as “the modern man in our highly mobile society”. He states that a large part of the Japanese housing concept consists of travel, and that people working in cities and living in the countryside figure their homes as temporary dwellings. In this context, the Nakagin Capsule Tower, located in the heart of Tokyo, provides a one-bedroom dwelling for businessmen traveling or living far from the city center. In his introduction to Kurokawa’s book, Charles Jencks notes that Kurokawa himself spends about 20 percent of his time outside of Japan and 20 percent in local cities outside of Tokyo, which means he spends most of his life in places like hotels, cars, and airplanes. And he states that Kurokawa



21. Kisho Kurokawa, *Metabolism in Architecture* (Boulder: Westview Press, 1977).

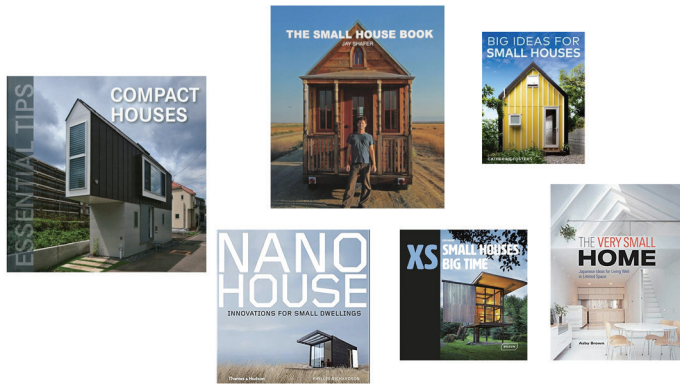
believes Homo Movers will lose the desire to possess and therefore they will dream of moving freely instead of properties and expensive homes.<sup>21</sup>



**Figure 5:** Left: Nakagin Capsule Tower Tokyo 1972  
Right: Isometric Plan of The Capsule Measuring 2.5 M X 4  
M X 2.5 M (Source: Kurokawa, 1977)

If the new home-dependent living style, which the whole world is trying to adapt to due to the Covid-19 outbreak, is ignored for a moment, it is quite interesting to point out that the concept of urban nomad which Kurokawa defined as Homo Movers 50 years ago as if he were seeing the future is still relevant today. And the lifestyle of individuals who are constantly on the move in a high-density city put forward by this concept constitutes the number one argument of micro-living advocates in the urban perspective. In this context, the capsule architecture examples of the Metabolists are inspiring for the design of micro-living spaces in the urban area with its scale and its intention to adapt to the constantly changing lifestyles.

As of the 2000s, small-scale architecture has come to light again and started to show its power. Many architectural competitions and exhibitions are organized for small-scale living units in urban areas. Especially in the last 10 years in high-density cities such as London, Hong Kong, Tokyo, and San Francisco, governments have resorted to micro-living units to solve the housing problem. In this context, micro-living units appear in urban areas with many different titles such as micro-unit, small cabin, micro pod, nano flat, compact unit, tiny house... Although they evoke similar things, they create different perceptions. So, what are the features that distinguish them from each other and what do these nomenclatures mean?



nano    micro    tiny    small



**Figure 6:** Some Books About Nano, Micro, Small and Tiny Houses, and Their Cover Images

The basic idea is to use the space at maximum efficiency by reducing the size of the personal spaces and increasing the efficiency of space. The term “small” and “tiny” are generally preferred for cabinets located in rural settlements and establishing a relatively nostalgic or romantic relationship with nature. On the other hand, adjectives such as micro, nano, and compact are preferred for units usually located in more dynamic places like big cities or used for units with more technological equipment due to the frequent use of these terms in technological studies. If the meanings of these adjectives are examined, it can be observed more clearly that the differentiation between these words also represents a smallness/size rating and discusses the relations with technology.

22. "Small," Cambridge Dictionary, accessed August 10, 2020, <https://dictionary.cambridge.org/tr/s%C3%B6z%C3%BCk/ingilizce/small>.

23. "Tiny," Cambridge Dictionary, accessed August 10, 2020, <https://dictionary.cambridge.org/tr/s%C3%B6z%C3%BCk/ingilizce/tiny>.

24. Rubenach, "Compact Living,".

25. April Anson, "'The World Is My Backyard': Romanticization, Thoreauvian Rhetoric, and Constructive Confrontation in the Tiny House Movement," From Sustainable to Resilient Cities: Global Concerns and Urban Efforts, 2014, pp. 289-313, <https://doi.org/10.1108/s1047-004220140000014013>.

26. 'Henry David Thoreau, Walden; or, Life in the Woods (Boston, MA: Ticknor and Fields, 1854), 76., 1854. Pp. 76.

27. "nano". OED Online. March 2021. Oxford University Press. <https://ezproxy.mef.edu.tr:2313/view/Entry/124974?rskey=P5Ataf&result=2&isAdvanced=false#eid>

According to Cambridge Dictionary, the term "small" means a little in size or amount when compared with what is typical or average.<sup>22</sup> If the terms "small" and "tiny" are compared, tiny means extremely small.<sup>23</sup> This difference is also reflected in architectural terminology. In this context, "small houses" are approximately between 37 m<sup>2</sup> and 93 m<sup>2</sup>, while "tiny houses" are less than 37 m<sup>2</sup>.<sup>24</sup> "Tiny" differs from other explanations. It is a rural housing typology and represents an architectural and social movement called "The tiny house movement" that promotes a simpler life in a smaller area.<sup>25</sup> The Movement establishes a deep connection with Thoreau's desire to live deliberately and front only the essential facts of life, and his discourse of "Simplify, Simplify" in his 19th-century novel the Walden.

"Simplify, simplify. Instead of three meals a day, if it be necessary eat but one; instead of a hundred dishes, five; and reduce other things in proportion." ... "Our life is frittered away by detail. Simplify, simplify, simplify! I say, let your affairs be as two or three, and not a hundred or a thousand; instead of a million count half a dozen, and keep your accounts on your thumb-nail."<sup>26</sup>

With the Great Recession, this movement has attracted considerable attention in the context of proposing affordable and environmentally friendly housing. In addition to dozens of books and hundreds of blogs written about "tiny living", its place in the media is growing with the examples of documentaries such as "TINY: A story about small life" featured on Netflix, TV shows such as "Tiny House Hunters" and many videos on Youtube. In parallel with its increasing visibility in the media, it seems that the interest in this lifestyle will gradually increase.

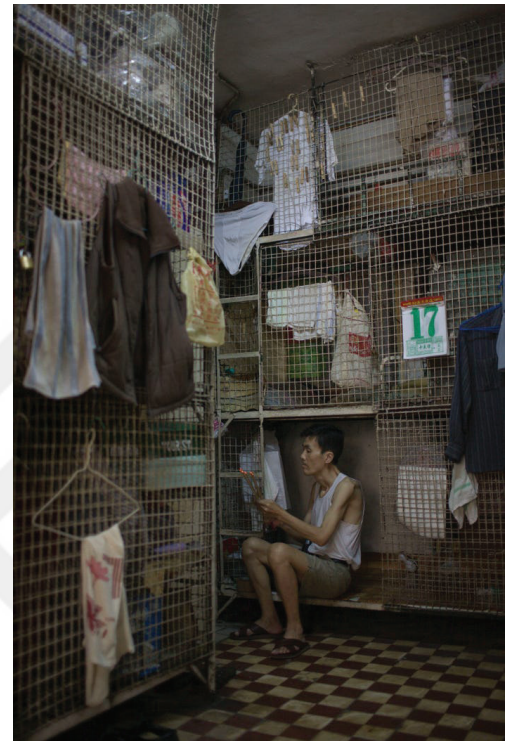
On the other hand, adjectives such as micro, compact, and nano sound more dynamic because these terms have become popular with their frequent use in technological developments. For example, nanotechnology and microtechnology are miniaturizing products to make them more compact and efficient. These terms also represent a measure. The micro term means one-millionth of the meter, while the nano term means one-billionth of the meter. According to Oxford Dictionary, the word "nano" comes from classical Latin "nānus" or its etymon ancient Greek νᾶνος means "dwarf". It is used for expressions such as extremely small; very brief duration, a very small degree; less complex; made at a more fundamental level.<sup>27</sup> The use of these terms to



describe the units creates a perception of an innovator and attractive living unit with high technological equipment due to their frequent use in current technological studies such as material technology.

In addition to these terms, there are forms of dwelling that do not express a particular size in comparison, but which in essence offer a micro-living in a different way. The most well-known method, especially in high-density cities, is to divide an ordinary flat into subsections to provide accommodation to more households. Although this way of life is named as “bedsitter/House in Multiple Occupation” in Britain, “Single-room occupancy” in the United States, “subdivided flat” in Hong Kong, it essentially has the same purpose. In each of these dwelling forms, an ordinary flat is subdivided in accordance with the relevant regulations determined by law, so that more people can be accommodated in it. Some units have a kitchen with a small sink and stove and a small bathroom. But in most of them, these facilities are shared with other residents. These ways of life, which are taken under different names in many parts of the world, are sometimes carried out legally and sometimes illegally. In the case of Hong Kong, the main idea of dividing a flat into subsections to provide accommodation for more people is heartbreaking compared to Western examples. Such that, the cage houses built with metal wires of 180 x 60cm dimensions and the coffin houses built in a makeshift form with wooden boxes with a floor area of less than 2 square meters, which are the types of subdivided flats, take their names from their resemblance to coffins and rabbit hutches stacked on top of each other (Figure 7). The incredible inadequacy of living conditions and their inappropriateness for a human being justifies the attribution in the nomenclature.

Small cabin, tiny house, micro home, compact cabin, subdivided flat, nano capsule, or and many that can be derived...They all define a kind of “micro-living” and essentially aim to simplify, shrink, and take up minimum space. There are many parameters that trigger the emergence of the idea of micro-living and become a trend by spreading all over the world. The increasing number of people living in cities has caused cities to fill their capacities. With the increasing density, a serious land shortage has occurred in dense urban centers, and real estate prices have begun to rise to exorbitant levels. However, this situation did not cause the idea of living in urban centers to lose its charm, and in order to continue to live in these attractive areas, the idea of occupying a minimum area in the precious lands of urban centers emerged. On the other hand, the demographic structure has seriously transformed



**Figure 7:** Similarity Between Cage Houses (Source: REUTERS/Bobby Yip) and Rabbit Hutches.

28. "Micro living defined," BPF (British Property Federation), accessed January 13, 2021, [https://bpf.org.uk/media/1076/compact\\_living\\_full\\_research\\_report](https://bpf.org.uk/media/1076/compact_living_full_research_report).

29. "The Macro View on Micro Units", ULI (Urban Land Institute), accessed February 5, 2021, [http://uli.org/wp-content/uploads/ULI-Documents/MicroUnit\\_full\\_rev\\_2015.pdf](http://uli.org/wp-content/uploads/ULI-Documents/MicroUnit_full_rev_2015.pdf).

with the new dynamics of the period. Differences have arisen between the lifestyles and habits of the generations, and the new priorities of the young generation have become a very critical parameter for the transformation of the image of home. All these changes have brought people closer to the idea of micro-living and caused it to spread all over the world as a global trend.

## Relative minimum space requirements

As the trend is global, there is no standard definition to "micro-living" based on square meters. It can be 45 m<sup>2</sup> in Switzerland, a floor area below 37 m<sup>2</sup> in the UK, half that in Tokyo, or less than half that in Hong Kong. It is an ambiguous term to describe a lifestyle that forces maximum efficiency in dwellings that do not meet the minimum space standards defined by law by governments in many parts of the world. In this context, this term is very relative due to changing standards. For example, in 2018, the British Property Federation collaborated with JLL: Real Estate Advisors & Professionals published a report describing three types of micro-living: "compact living" that provides self-contained living spaces, "co-living" that purpose-built spaces including a combination of personal and shared amenity space, and "Shared Living" that converted and subdivided homes such as HMOs (House in Multiple Occupation). The common feature of these dwelling types is that they do not comply with the minimum 37 square meter area standards in the UK.<sup>28</sup> In New York City, the minimum size requirement for a new residential unit is the same i.e., 37 square meters, while in Japan this value is 25 square meters. These building codes that determine the minimum area are one of the biggest obstacles to the construction of micro-units.

With the micro-living trend spreading globally, the authorities around the world have initiated studies to alleviate zoning restrictions that impose minimum space standards. For example, in New York, the minimum apartment size was determined as 37 m<sup>2</sup>.<sup>29</sup> Former Mayor Bloomberg said: "New York's ability to adapt with changing times is what made us the world's greatest city – and it's going to be what keeps us strong in the 21st Century." And announced a design competition called adAPT NYC to develop affordable micro-units. A project consisting of 55 flats ranging from 23 to 34 square meters, designed by nARCHITECTS, won the competition. Along with the

win, the restrictions were waived for construction of micro-apartments to take place.<sup>30</sup> Another example comes from the UK. Patrik Schumacher, the principal architect of Zaha Hadid Architects argues that the biggest reason for the lack of affordable housing in London is state policies that interfere with the market's privatization and impose restrictive regulations. He asserts that one of the most problematic impositions is the minimum space standards that prevent the building of micro units. With the abolition of these restrictions and allowing micro apartments to be included in the market, a new income group will be created, and competition will increase thus both the total unit and affordability will increase. According to today's conditions and daily life habits, a small, clean, private hotel-room sized central flat suits the needs of many young professionals. Schumacher states: "Many people who don't understand how markets work seem afraid that the liberalisation of standards implies that people are then 'forced' to live in 'rabbit hutches'. Markets never work via force, but only always via being forced to adjust to consumer preferences."<sup>31</sup> In this context these restrictive building codes and regulations close the door to the market's residential conditions tailored and optimized to our individual living needs and desires. In 2019, Vera Kichanova published a report titled "Size Does Not Matter" for the Adam Smith Institute, a neoliberal think tank and lobbying group based in the United Kingdom, calling for the abolition of minimum space standards to enable micro-living units in London's housing economy. According to this report, housing has become very problematic for Londoners as supply has failed to meet demand and average house prices have increased five times over the past 50 years. Especially for young professionals, the ways to survive in the big city life are very limited and challenging. They are stuck among problematic options such as living alone and outside of central activity areas, sharing an apartment with strangers in the center, living in co-living spaces designed directly for this purpose, and, at worst, leaving the capital. Micro-living is an alternative to all these options and to the problematic aspects of shared livings such as noise, cleanliness, privacy, and the need for private space. But it is prevented by the minimum space standards set at 37 square meters for a studio flat in London.<sup>32</sup> On the other hand, co-living developments such as a British start-up The Collective are very popular in London. These corporations offer areas well below the minimum area by taking advantage of the gap in the building restrictions that do not apply to these developments.<sup>33</sup> In the report, Kichanova argued that what matters is not the size of the space but the living standards the space

**30.** "Mayor Bloomberg Announces Winner of Adapt Nyc Competition To Develop Innovative Micro-Unit Apartment Housing Model," The official website of the City of New York, January 22, 2013, <https://www1.nyc.gov/office-of-the-mayor/news/032-13/mayor-bloomberg-winner-em-adapt-nyc-em-competition-develop-innovative-micro-unit#/2>.

**31.** Patrik Schumacher, "Only Capitalism Can Solve the Housing Crisis," Adam Smith Institute, April 25, 2018, <https://www.adamsmith.org/capitalismcansolvethethehousingcrisis>.

**32.** Vera Kichanova, "Size Doesn't Matter: Giving a Green Light to Micro-Homes," Adam Smith Institute (Adam Smith Institute, 2019), <https://www.adamsmith.org/research/size-doesnt-matter-giving-a-green-light-to-micro-homes>.

**33.** Tim Brown, "The Challenges and Controversies of Co-Living," Trowers & Hamlins, 2019, <https://www.trowers.com/insights/2019/november/the-challenges-and-controversies-of-co-living>.

34. "Micro Homes | Mayor's Question Time," Mayor of London, March 2029, <https://www.london.gov.uk/questions/2019/6326>

35. Paul Miles, "Architects' Tiny Triumphs: the Small Buildings with a Big Impact," Financial Times, May 2, 2014, <https://www.ft.com/content/f28e2b6e-cec7-11e3-8e62-00144feabdc0>.

offers and pointed out that well-designed spaces smaller than 37 square meters can be an affordable opportunity for Londoners. In this context the Greater London Authority was called to abandon these restrictions. However, this call has been rejected by the mayor in 2019 (Figure 8).<sup>34</sup>

The screenshot shows a webpage from london.gov.uk with the following content:

**london.gov.uk/questions/2019/6326**

**MAYOR OF LONDON LONDONASSEMBLY**

## Micro Homes

**Session date:** March 21, 2019  
**Question By:** Nicky Gavron  
**Organisation:** Labour Group  
**Asked Of:** The Mayor

### Question

The Adam Smith Institute has recommended in its Jan 21 "Size doesn't matter: giving a green light to micro-homes" report that that you should **remove minimum space requirements for co-living units and micro-homes**. Will you be taking up that recommendation? Please give your reasons.

### Answer

**Micro Homes**

**Answered By:** The Mayor  
**Date:** Friday, 22nd March 2019

No. All self-contained **housing must** be fit for purpose and **meet the needs of residents** now and in the future, and **housing standards are one of the most effective tools we have to ensure** that this occurs. That's why I have strengthened the relevant details in my draft London Plan, making sure that all self-contained housing meets minimum space standards.

Large-scale-shared-living is a new form of non-self-contained accommodation and I have introduced a policy in my draft Plan to manage this type of development. I will be carefully monitoring proposals and if necessary I will produce design guidance to manage the quality of this accommodation.

**Figure 8:** Mayor's Answer to Minimum Space Regulations for Co-Living Units and Micro-Homes

Although the minimum space constraints pose an obstacle to the spread of micro living units, it is also an important tool to control the competitive real estate market. "Pocket-sized homes are a symptom of a failing market, and the government needs to intervene by setting minimum space standards in order to protect the public," states Will Fox, Riba's public affairs manager.<sup>35</sup> The main intention is primarily to protect people with limited options or low incomes from greedy developers of the market. For example, in the densely populated city of Hong Kong, where lands are very valuable and rents are very high, there are no minimum space restrictions. This loophole has radically affected the real estate market and has led to micro-flats, which are smaller than the minimum standards in many countries, to surround the city of Hong Kong. However, the competitive micro-flat market has failed to increase the affordability of these units, and the shortage of affordable housing in Hong

Kong has worsened than in many parts of the world. Even, the unit price per square meter in Hong Kong is significantly higher than in many parts of the world. This situation undoubtedly depends on many factors such as being an island country, land constraints and land management. However, the current picture shows that there are huge gaps between the living standards of people. While one side lives in well-designed, high-tech compact flats, the other side lives under very bad conditions in terrible spaces such as subdivided flats or cage houses. The absence of minimum space standards cannot be addressed as the reason for all these injustices, but the thing is quite clear, it legalizes the incomprehensibly cramped and mind-blowing living conditions in parking lot-sized cage houses.

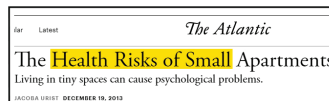
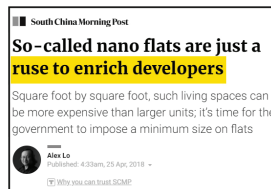


Figure 9: Micro-Living on Media



36. "8% of the world population projected to live in urban areas by 2050, says UN", United Nations, 2018 <https://www.un.org>



**Figure 10:** Love2 House by Takeshi Hosaka Architects (Image by koji fujii nacasa&partners inc)



**Figure 11:** Studio Flat By Hiroyuki Ogawa Architects (Source: Dezeen)

It is very difficult to make an analysis among all these specific and contradictory examples and to come up with a single argument. It may not be fair to draw up a dystopian future scenario in which everyone will be forced to live in rabbit cage size houses with the abolition of minimum standards, or to argue that the lack of restrictive regulations will not cause a deterioration in living conditions, but rather liberate the real estate market and make micro-units affordable for everyone. According to London minimum floor space standards, a small house with a total floor area of approximately 19 square meter in Tokyo designed by Takeshi Hosaka (Figure 10) and or 34-square-metre studio apartment design by Hiroyuki Ogawa Architects (Figure 11) cannot be built, but that does not mean that these spaces offers inadequate or bad living conditions. On the contrary, it offers a space with very good living conditions compared to many shared flats in London. In this context, what is critical is not the size of the space, but the living conditions it offers.

## Housing as a global crisis

The number of people living in cities is increasing day by day. According to a report prepared by the Population Division of the UN Department of Economic and Social Affairs, 55% of the world's population lives in urban areas today and this proportion is expected to rise to 68% by 2050. Increasing population and intensive migration to urban areas has led to the emergence of the megacities with a population of 10 million or more. While there were only 10 megacities in 1990, this number increased to 33 in 2018, and by 2030 it is estimated that there will be 43 megacities with a population of more than 10 million.<sup>36</sup> The opportunities and services offered by urban areas in business, education, healthcare, and social fields have made the dynamic urban environment attractive for many. Demands for living in urban areas increased as new opportunities emerged in city centers; and as demand increased, investments concentrated on urban areas again. This created a vicious circle. At some point, however, urban areas began to fill their capacity, and access to the city's basic services became increasingly unequal for city dwellers with quite different economic opportunities. Especially if this service is one of the most basic human rights, "housing", the situation becomes even more critical.

The financial crisis between 2007 and 2008, dubbed as the “Great Recession”, had a traumatic effect on the whole world. In the period from those years to the present, the real estate market has also been affected by this crisis. Getting a safe, affordable, appropriate house has become increasingly inaccessible to many people in many parts of the world and its effects continue. Economics sociologist David Madden and emeritus professor of urban planning Peter Marcuse explain in their book, “In Defense of Housing”:

“ ... There is a conflict between housing as lived, social space and housing as an instrument for profit making - a conflict between housing as home and as real estate. More broadly, housing is the subject of contestation between different ideologies, economic interests, and political projects. More broadly still, the housing crisis stems from the inequalities and antagonisms of class society.”<sup>37</sup>

In this context, this crisis is a global crisis, but housing problems and approaches to these problems are not the same everywhere because housing is more than just dwelling. It is also very political due to its active role in the formation of social classes in society, in the determination of norms and gender roles. It also establishes a very strong relationship with the economic policies of the current period.<sup>38</sup> In this context, micro-living is one of the approaches that offer an alternative to the housing market, which has difficulties in adapting to the new priorities brought about by changing and transforming conditions with the global crisis. It should be emphasized that it is not an absolute solution but offers an alternative both for an already existing demand and for potential users who can adapt to the lifestyle it proposes and the new conditions it provides.

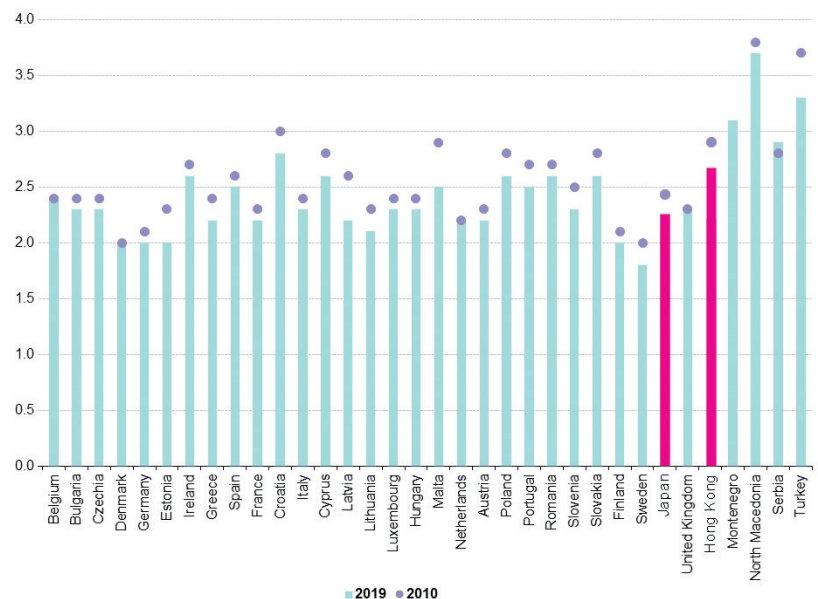
**37.** David Madden and Peter Marcuse, *In Defense of Housing: The Politics of Crisis* (London: Verso, 2016).

**38.** Ella Harris and Mel Nowicki, “GET SMALLER? Emerging Geographies of Micro-Living,” *Area* 52, no. 3 (2020): pp. 591-599, <https://doi.org/10.1111/area.12625>.

## Shifting demographics and rising interest in single living

There have been striking demographic changes around the world. The classical family structure, where the man is the breadwinner, and the woman is the housewife who takes care of the housework and childcare has radically changed. Women have gained empowered economically with the realization of women’s rights and gender equality. The idea of living only by one’s own decisions regardless of the people around, the place or the time has begun to spread like wildfire under the name of “freedom”. This has also caused a dramatic decline in household formation and birth rates. It is observed that there is a great decrease in the marriage rates, birth rates and average household size (Figure 12) and increase in the divorce rates and the number of one-person households worldwide. The world has entered a period of a serious demographic shift. According to Eurostat Statistics, the number of single-family households significantly increased, and the size of households decreased.<sup>39</sup> The idea of a life fiction consisting of successive stages such as growing up, completing education, having a profession, then getting married, having a child, and settling in a house seems to be getting outdated.

**Figure 12:** Average Number of People Per Household by Country, in 2010 and in 2019  
(Source: Eurostat)



39. Household Composition Statistics,” Eurostat Statistics Explained, 2020, [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Household\\_composition\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Household_composition_statistics).



In addition to these, individuality gains importance with the increasing interest in solo living. Focusing solely on meeting their own needs, the individual tends to save money, energy, and time that is more precious than diamonds in today's world. And one of the inevitable methods of these savings is to reduce the scope of taking responsibility. In this context, a smaller house saves resources to be spent on the maintenance of both the house and the furniture, on the other hand, it makes it easier for people to become free individuals by being independent of the material and spiritual elements they depend on.

However, this is a very binary situation. In addition to free and unconstrained lifestyle choices, many economic, political, and cultural parameters lie behind these critical changes. Bentley and McCallum raise the question:

“Has this turning point in household formation rates been the result of unconstrained lifestyle choices, or has it been a response to economic pressures and, in particular, the state of the housing market?”<sup>40</sup>

There are many issues such as the increasing difficulty of finding a job for young adults after the Great Recession began in 2007, the loss of validity of the gender roles imposed on women and men, changes in the classical family structure, emerging unconstrained lifestyle choices, and many more... In this context, changes in the demographic structure are not purely natural and spontaneous changes that the real estate market must adapt to. The household structure is affected by the housing situation, and housing is also affected by household structure. Across Europe, there is a decrease in average household size and an increase in the number of people living alone. However, this acceleration gradually decreases, and the curve is flattening. The impact of the housing market is very critical. Due to the economic uncertainties and the lack of affordable housing, many young adults had to live with their parents. For example, the proportion of young people aged 20-34 living with their parents in the UK rose from 10 percent in 1998 to 26 percent in 2017.<sup>41</sup> And adults who do not return to their family home and do not have sufficient financial means to meet the rent of a house to live alone are forced to share a house with unrelated people they are not in any relationships with.<sup>42</sup> This situation shows that, contrary to all changing normative choices, affordability

**40.** Daniel Bentley and Alex McCallum, “Rise and Fall: The Shift in Household Growth Rates since the 1990s,” Civitas, February 2019.

**41.** Ibid.

**42.** Juliet Stone, Ann Berrington, and Jane Falkingham, “The Changing Determinants of UK Young Adults’ Living Arrangements,” *Demographic Research* 25 (2011): pp. 629-666, <https://doi.org/10.4054/demres.2011.25.20>.

43. Esteban Ortiz-Ospina, "The Rise of Living Alone: How One-Person Households Are Becoming Increasingly Common around the World," Our World in Data, 2019, <https://ourworldindata.org/living-alone>.

of the house plays a critical role. Besides, supply-demand imbalances are arising as a result of the existing housing market's failure to respond to the changing demographic structure.

It is not surprising that this situation is worse in high-density city centers where land price is exorbitant, houses are more expensive, and socio-economic inequalities are more striking. Various ideas have been developed by governments and private companies against these problems, but they are often inadequate. For this reason, urban dwellers who insist on living in urban centers started to look for housing alternatives to survive in the big city life. Some of these alternatives are studio apartments, shared houses, micro apartments, and they diversify in different regions such as "HMOs" (House in multiple occupation) and "bedsitters" in the UK, "subdivided flats" in Hong Kong, "Kyosho Jutaku (micro living)" in Japan, and many more examples of legal or illegal housing methods. The purpose of all these alternatives is essentially the same: to use the precious land in city centers with maximum efficiency by minimizing personal dwelling space, and of course, saving money.

Looking at the international picture, statistical data show that the upward trend of one-person households is spreading all over the world. On the other hand, it imposes a serious financial burden. When examined in more detail, it is striking that the countries where one person households are concentrated are regions with relatively higher welfare levels than others. From this perspective, it is not surprising that in countries with high per capita income, such as Sweden, Finland, and Germany, one person households constitute the majority of the total households. In these high-income countries, social security provided by the state to its citizens makes it easier to live alone, while in poorer countries with fewer social and security services, it is more difficult and riskier to maintain this lifestyle.<sup>43</sup> In this case, some contradictions arise. On the one hand, the decreasing average number of households is attributed to financial inadequacies and insecurity, on the other hand, it is observed that living alone is a consciously preferred way of life in rich countries with high economic welfare. Indeed, this contradictory situation whispers that there are much more than economic capabilities: cultural backgrounds and country-specific qualities. The only common point between these two contradictions is the result, which is that the world is increasingly getting so into the idea of living alone.



Figure 13: The Cover Image of Time Magazine: The Childfree Life (August 2013) Illustration by Randal Ford

## New generations and new habits

Everything that interacts with humanity in the world, from economic developments to political policies, from technological developments to natural events, brings new habits with it. Some of them cause a direct transformation, while others show their effect deeply and gradually in the long term. But undoubtedly, people's daily lives are transforming with the flow of time. The idea of micro-living comes to the fore with its adaptability to daily lives which is in a state of flux. But on the other hand, it has been depicted in many media with derogatory analogies such as "shoebox" or "rabbit holes". These perspectives evaluate micro-units as a danger that can reduce personal space, overcrowding the city, and turn into a slum. To put it even more harshly, they consider micro-units as an infringement of human dignity.<sup>44</sup> But dignity is a very relative value. As the Goldman Sachs report show, generation Y (Millennials) growing up in a period of rapid change, have very different expectations and priorities from previous generations, and they interpret their quality of life differently.<sup>45</sup> (Figure 14)

According to the 2019 report of the United Nations, Millennials covers 23 percent of the world's population with a population of 1.8 billion<sup>46</sup>, and by 2025, millennials will comprise three-quarters of the global workforce.<sup>47</sup> In this context, the new habits of the millennials, which constitutes a significant percentage of the world population, are critical for many industries. For example, years ago, while a standard type of office was common where employees had their own isolated workspaces separated by partitions and rooms, by the 21st century most companies switched to an open space layout that increases sharing and interaction. This change was due not to a lack of resources but to a change in attitude. It aims to be a system that adapts to young professionals with different habits and motivations and improves their skills and thus gains more benefit from them. But on the other hand, it justifies overtime hours and low salaries by pretending to improve working conditions. Their priorities are also different when looking for a house. Instead of living in a large or normal-sized house, this generation prefers to reach their workplaces or schools with fewer vehicles, by walking or cycling as much as possible, and to have easy access to all the services the city offers. According to the "Commuting and Personal Well-being" report published by the UK Office for National Statistics in 2014, personal well-being decreases with

44. Kichanova, "Size Doesn't Matter," 12.

45. "Millennials Infographic," Goldman Sachs, accessed August 17, 2020, <https://www.goldmansachs.com/insights/archive/millennials/>.

46. "World Population Prospects 2019: Highlights," United Nations, 2019, <https://www.un.org/development/desa/publications/world-population-prospects-2019-highlights.html#:~:text=The%20world's%20population%20is%20expected,United%20Nations%20report%20launched%20today.>

47. "Global Generations | A Global Study on Work-Life Challenges across Generations" (EY, 2015), <https://www.coursehero.com/file/52620735/EY-global-generations-a-global-study-on-work-life-challenges-across-generationspdf/>.

48. "Commuting and Personal Well-Being, 2014," ONS (Office for National Statistics, 2014), <https://web.archive.nationalarchives.gov.uk/20160105231823/http://www.ons.gov.uk/ons/rel/wellbeing/measuring-national-well-being/commuting-and-personal-well-being--2014/art-commuting-and-personal-well-being.html>.

49. Allana Akhtar and Shana Lebowitz, "14 Things Millennials Do Completely Differently from Their Parents," Business Insider Australia, March 12, 2018, <https://www.businessinsider.com.au/millennials-habits-different-from-baby-boomers-2018-3?r=US&IR=T>.

50. Annemarie Kuhns and Michelle Saksena, "Food Purchase Decisions of Millennial Households Compared to Other Generations" (United States Department of Agriculture, December 2017), <https://www.ers.usda.gov/webdocs/publications/86401/eib-186.pdf?v=43097>.

every mile of commute.<sup>48</sup> The results show that opportunities such as higher income or better housing may not compensate for the negative effects of commuting and therefore people may be making non-optimal choices. In this context, they consider the abandoned square meters as an efficiency, not a compromise. On the other hand, all this efficiency issue is related to "time". In the global world where competition is gaining acceleration with each passing day, it is not possible to slow down. Time is one of the most precious things people can have. For the younger generation trying to survive in the middle of the competitive world, the effort to extend time is inevitable. - whatever the time is for- At this point, "micro-living" offers an option for these young people, and this living style is not only a dramatic ending that we came to due to lack of resources, but also a matter of state of mind. Priorities and motivations are variable for each generation. Generation Y and first digital native Generation Z are growing up in a digital world shaped by the internet, smart-phones, computers, and tablets. The ability to access services 24/7 at the touch of a button, such as accessing information, buying a jacket they like, ordering a delicious dinner or calling a vehicle to transport them from point A to point B, has brought along many different daily habits. The tools they used became more and more compact. As the hardware of computers improved, people became able to do the research for school assignments or prepare a presentation for the work with tablets that are very easy to use, light, and easy to carry. With the emergence of online applications such as Netflix, Amazon Prime, and Mubi, televisions started to lose their places to computers and projections. With the frequent use of apps such as Spotify and Apple Music, people who still listen to vinyl records or radio are extremely rare. There is a generation that prefers to communicate with people they know or have never seen before by blogging, sending instant messages, via social media; a generation that can download their favorite music, TV series, and movies online and enjoy whatever they want regardless of the broadcast stream of a television or radio; and a generation that can meet their entertainment needs by playing video games.

Even the dietary habits, which are one of the most basic needs of people, change and transform over time.<sup>49</sup> According to the report published by the United States Department of Agriculture, the most obvious feature that distinguishes Generation Y from the older generations is their intense preference for convenience.<sup>50</sup> They make fewer trips to the grocery store, prefer more ready-to-eat foods, are more likely to eat at restaurants or order



**Figure 14:** Illustration of Millennials: Young People with Laptop Bags Moving with Wings On Their Backs, Looking For Their Way With Telescopes In Their Hand. Cover image of the Finance and Development Magazine published by the IMF, June 2017.

a takeaway than other older generations. When the report is examined, it is seen that Millennials prefer to consume fresh foods such as vegetables and fruits, which can be eaten raw or with little cooking, pasta that can be prepared in a short time and with a minimal effort, ready-made foods such as pizza, sandwiches, soups that can be consumed instantly or by heating them later. And they consume less food that have long cooking times or are difficult to prepare such as red meat, white meat, and grains compared to older generations. Among these preferences, the “raw food” trend is very popular. It basically aims to get the maximum benefit from foods with little effort by consuming foods without cooking. This new trend is another simple example of “back to basics”. Just because it is a trend does not mean it’s something new. On the contrary, it is based on an ancient method from a time when the fire was not even found. In this context, millennials’ relationship with the kitchen is questionable. Perhaps a cooking area with a double burner, a mini-fridge, and a few crockeries can meet the needs of this generation.

In addition to all these transforming daily life habits, the methods of ownership have also changed considerably. After years with limited resources and opportunities, Baby boomers born between 1946-1964, and Generation X born between 1965-1980 were motivated to buy goods and acquire properties. But this has changed for the millennials and later generations. For younger generations, there is something more important than having stuff, which is accumulating experience. According to an online survey conducted by Harris Group on behalf of Eventbrite within the United States in 2014, Generation Y views the concept of ownership quite differently from previous generations. Whereas previous generations dreamed of owning a nice car and a house in their youth, millennials see all these beings as a commitment. Instead of owning property and accumulating kinds of stuff, they crave more experience and spend their money in this direction. Harris group claims that since 1987, the share of consumer spending for live experiences and events has increased by 70 percent compared to total US consumer spending.<sup>51</sup> In the light of these new priorities of the young generation, is the concept of home a station where only basic needs are met in the world of collecting experiences? In other words, is it a burden not worth striving to have? On the other hand, such discourses are an illusion of a growing economy based on experiences. Beyond the pursuit of a freedom-based lifestyle, not having a house has been an inevitable end, especially for the younger generation who do not have enough income to own a house and barely afford their rent

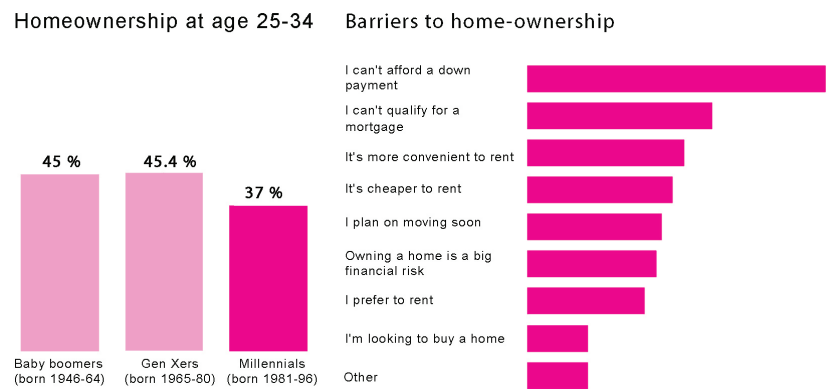
51. “Millennials: Fueling the Experience Economy,” Eventbrite US Blog (Harris Group, 2014), <https://www.eventbrite.com/blog/academy/millennials-fueling-experience-economy/>.



52. "Better Money Habits® 2020 Millennial Report," Bank of America, accessed November 13, 2020, <https://about.bankofamerica.com/en/making-an-impact/bmh-millennial-report>.

53. Annie Nova, "Here's Why Millions of Millennials Are Not Homeowners," CNBC, August 9, 2018, <https://www.cnbc.com/2018/08/09/millions-of-millennials-are-locked-out-of-homeownership-heres-why.html>.

under the heavy burden of student loan debts. In this context, this change in ownership methods is a kind of necessity, and it has reached such a critical level that people between the ages of 18-40 who do not have enough money to buy a house, spend most of their income on rent, and live in rented homes for most of their lives is labeled as 'generation rent'. According to a study by Bank of America published in 2020, Millennials spend about 26 percent of their monthly income on rent/mortgage. Three quarters are saving for retirement and one-third are saving to buy a home. They prefer to buy a more affordable, smaller home (82 percent) instead of buying a larger home at the top of their budget (12 percent), and they are more likely to live a minimalist, frugal lifestyle in order to plan for the future (73 percent) over live for today and spend money when they want. (21 percent)<sup>52</sup> These data show that, contrary to stereotypes such as avoiding home ownership as a deliberate choice, focusing on collecting experience and sustaining life with instant choices, the younger generation does not seem reluctant to make long-term future. However, it is quite clear that the homeownership rate among millennials between the ages of 25-34 is much lower than the previous generations in the same age (Figure 15).<sup>53</sup>



**Figure 15:** Homeownership Tendency of Millennials  
Source: Cnbc (The Urban Institute)

This situation of the millennials has been ridiculed even by Monopoly, a board game about capitalism. In this version, the Rich Uncle Pennybags -the mascot of the game-, greets us not with banknotes or credit cards as we are used to, but with a mobile phone, a take-away coffee and headphones. The tagline of the game says, "Forget about the real estate, you can't afford it anyway". Instead of collecting fake money and buying houses with them as in other versions, in the millennials' version you collect "experience points" by exploring things like music festivals, vegetarian bistros, shared bikes, your

friend's couch and of course practicing yoga and enjoying your avocado toast. The game developers received a heavy reaction from many of the Monopoly players who were part of this generation, as they generalized this difficult and challenging period of the Y generation into a mockery and tried to profit from it.<sup>54</sup>



Figure 16: Monopoly for Millennials

## Times of uncertainty

It is possible to describe the current period as “times of uncertainty”. The constantly changing conditions cause the world to struggle in a continuous transition period. Long-term plans can be easily put into cold storage and priorities can change. Andrés Jaque uses the term “Rolling Society” to describe people who have sustained a semi-nomadic lifestyle, settle for short periods, and are constantly on the move with unstable and external conditions. It takes its name from the movement.<sup>55</sup> Among all these uncertainties, the younger generation (adults under 35 years of age) who are struggling with their own puzzlers are the most affected population by this situation. The idea of micro-living can be an alternative for these problems and uncertainties. Due to its location in attractive points of the city, it provides easy access to the services of the city, and it brings less responsibility and financial burden compared to a normal home. All of these and its easy adaptability potential due to its small scale make this lifestyle attractive to many people.

On the other hand, as of the beginning of 2020, all balances have changed with the outbreak of Covid-19. A global crisis shows once again how the daily lives of all people can change regardless of geography and it further intensifies the uncertainties that surround the entire planet. Until a few months ago, many studies pointed to the limited time spent at home in daily routines between work and school, whereas nowadays more time is spent at home than ever before. Daily life habits are changing, evolving, and intertwining. It remains unclear what kind of a cycle we will enter tomorrow in this constantly existing obscurity. Once, the young generation had gradually moved away from the idea of being at home and they were not too attached to a particular home due to the collapse of the housing market, economic inefficiencies, and the variety of activities that could be carried out outside the home. But now the whole world, including this young generation, has

54. Rachel Sugar, “Hasbro’s New Monopoly for Millennials Illustrates the Problem with Jokes about Millennials: They Have to Be Funny,” (Vox, November 19, 2018), <https://www.vox.com/the-goods/2018/11/19/18102818/hasbro-millennial-monopoly>.

55. Andrés Jaque, “Sheltering The Rolling Society”, Volume 46: Shelter, (2015): 86-91.

56. Foster Kamer, "Home, Bittersweet Home," Vox (Vox, October 14, 2020), <http://www.vox.com/the-highlight/21514367/coronavirus-covid-19-home-renovation-schooling-peloton>.

become more dependent on homes than ever before. Until months ago, while everywhere could be a home, nowadays everywhere fits into a home. As the time spent in homes increased, people had the opportunity to take a closer look at their living environment. The effort to fit all daily activities that were expanded in different places in the former daily routine into one home led to the demand for more space. The house is now more than just a shelter, it is now a library, a fitness center, a workplace, a painting workshop, a bakery and many more (Figure 16). So, will the micro units located in city centers, which have become centers of attraction with their proximity to workplaces, schools and social activity areas, be able to maintain their charm? During this period, many companies are trying remote working and it seems that the indispensable necessity of the office has been interrupted.<sup>56</sup> Many institutions stated that working from home increased efficiency, saved companies from many costs, and saved the time spent commuting to work. In this context, if dependence on outdoor spaces is decreasing, will people still accept to pay high rents for the sake of living in urban centers?



**Figure 17:** Illustrations by Patricia Doria for "More from The Home" Issue, (Source:Vox)

There are many different arguments on micro-living. While some think that the idea of micro-living is a powerful alternative under the conditions of the housing crisis, others criticize it very sharply. The focus of criticism is that this lifestyle has never solved the deep-rooted problems of



the housing market and only normalizes these bad conditions and repackages by embellishing it as if it were a desirable lifestyle. One of the harsh criticisms comes from Dr. Ella Harris and Dr. Mel Nowicki, who defined micro-living terminology as a neoliberal concept of housing. They argue that instead of offering a rational proposal that addresses high housing costs and poor living conditions, micro-living normalizes the downsizing of space with discourses such as minimalism, environmental awareness, flexible lifestyle, and urban single. In this context, they emphasize that micro-living cannot be a solution but maybe a “compensator”. It is an ideology that tries to justify the deterioration of living conditions and the downsizing of living spaces during the housing crisis. But it cannot radically solve the housing problems of young adults, its main target audience, and cannot alleviate the barriers to their life progress. Even positions them as “eternal students” with the lifestyle imposed by micro life.<sup>57</sup> Opposing views and criticisms can be increased, and even considering the fact that in some high-density cities the price per square meter of micro-living units is much higher than that of normal housing.<sup>58</sup> It can be said that it is a rather easily abusable idea for neoliberal policies. But it may not be fair to consider the idea of micro-living as a claim to be a panacea and should be noticed that the quality of living conditions is a relative concept and is influenced by many factors. It is not a one-size-fits-all solution and cannot replace a deep innovation for housing regulations. And beyond negotiating with a small space, it offers an alternative to different attitudes and priorities. It can be a particularly suitable option for people who care about what is outside of their home as much as the inside of their home and who prefer to live in a small apartment close to their workplace and the dynamic center of the city rather than living in a large suburban apartment. For example, Architect Richard Horden describes his life as a triangle between Munich, London, and Poole. He flies from the UK to Germany to lecture at the Technical University of Munich 3 days a week.<sup>59</sup> During his time in Munich, he stayed 3 days a week for 6 years in a Micro Compact Home which was designed for short-term stay with a team of researchers and designers in London and at the Technical University of Munich. Maintaining his life with these short stays, Horden defines the m-ch design, which provides space for sleeping, working, cooking and hygiene with its 2.66m compact cube, as conscious use of space. He describes his experiences for the times he stayed in micro-living unit as follows:

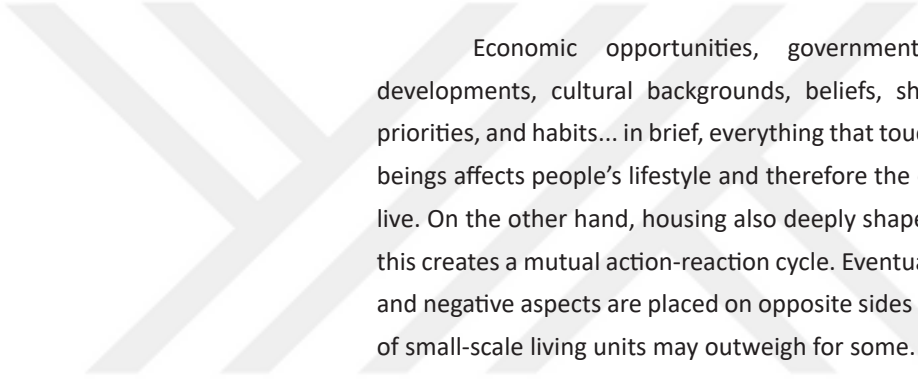
57. Harris and Nowicki, “GET SMALLER,” 596.

58. For example: A micro-unit project in development in San Francisco will rent for \$5.91 to \$6.82 per square foot, compared to an average price of \$4.21 per square foot for the average sized studio in the city. See Neal J. Riley, S.F. Supervisors Back Micro-Apartments, S.F. CHRON., Nov. 20, 2012, <http://www.sfgate.com/default/article/S-F-supervisors-back-micro-apartments-4055493.php>

59. Richard Horden- Micro Architecture (Lecture in AA School of Architecture), YouTube, 2015, <https://www.youtube.com/watch?v=1NggF3CNCwM>.

60. Richard Horden | HCL Architects | The Micro Home (Richard Hordes's Presentation), Vimeo, <https://vimeo.com/190687159>

“Many people are shocked by the idea of having to live in something so small, but I had a two-bedroom apartment before, and I’m so much happier in this... When I plug in my laptop, it all feels comfortable. Like when you are in an aircraft. Everything fits... That is all about using less. Learning to use less water, to eat less food, to cook as little as possible, to consume basic foods like vegetables, yogurts, cheese, and bread...”<sup>60</sup>



Economic opportunities, government policies, technological developments, cultural backgrounds, beliefs, shifting demographics, new priorities, and habits... in brief, everything that touches the daily life of human beings affects people’s lifestyle and therefore the environment in which they live. On the other hand, housing also deeply shapes the way people live, and this creates a mutual action-reaction cycle. Eventually, when all these positive and negative aspects are placed on opposite sides of the scale, the sunny side of small-scale living units may outweigh for some. So, micro-living can offer a reasonable alternative for some people, rather than being an inevitable end. In this context, could architecture and design be a magic wand looking for a moderate way among these high-tension situations without being optimistic? In order to better grasp the fundamentals of the rising micro-living trend and to discuss the main question of the thesis, whether micro-living is a necessity or a choice, it may be a worthwhile start to explore and dig deeper into the conditions that trigger micro-living in Hong Kong and Japan where this lifestyle is not only a cool choice but also an ordinary part of daily life.





# Micro in Japan

# 02

## Acceptance of the idea of being temporary

The idea of micro-living is not a new fancy trend in Japan. It is one of the alternative ways of maintaining life in this unique geography, and this alternative is a common and mundane part of daily life for those who live there. In Japan, where the minimum living area for a person is determined as 25 square meters, there are 5.7 million homes smaller than 19.7 square meters.<sup>61</sup> The background of downsizing goes back a long way. The craze for micro-living has deep roots in Japanese culture, geography, and history. It all began with the acceptance of the forces instead of fighting hard with them. Earthquakes, typhoons, wars, economic crises, and the uncertainties arising from disasters... All of these have taught the Japanese to make a new start after each demolition and to be born from the ashes.

Most of the Japanese houses were built with the method of conventional modular wood-frame construction until the 20th century. The dimensions of a room are based on the tatami which is created according to the body size of a Japanese person. (Figure 17). This measurement is approximately 90 cm to 180 cm but varies from region to region and even over time. The interior of a traditional Japanese house is created with some characteristic Japanese elements such as fusuma (sliding doors), tatami (straw mats), and shoji (sliding panels made of rice paper). Space can constantly change and transform with the help of the moving and fixed walls that fill the modular wood grid. The interior is not organized according to the function. Only clean (bath) and dirty (toilet) separated spatially. All functions except

61. "Simon Scarr, Marco Hernandez, and Manas Sharma, "Sheltering in Small Places," Reuters (Thomson Reuters, April 21, 2020), <https://graphics.reuters.com/HEALTH-CORONAVIRUS/TOKYO-HOMES/dgkvlabxpbx/>.

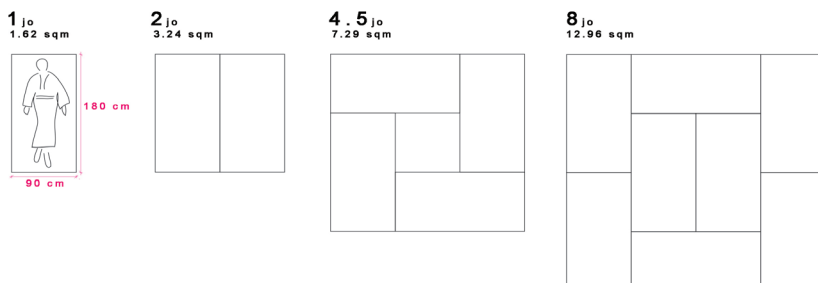


Figure 18: Tatami Measurement

62. Charles D. James, "The 1923 Tokyo Earthquake and Fire", University of California, Berkeley, 25 November 2005, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.372.3862&rep=rep1&type=pdf>.

63. Claudia Hildner, *Small Houses: Contemporary Japanese Dwellings* (Basel: Birkhäuser, 2011).

64. Alan Taylor, "1923 Kanto Earthquake: Echoes From Japan's Past," *The Atlantic* (Atlantic Media Company, March 15, 2011), <https://www.theatlantic.com/photo/2011/03/1923-kanto-earthquake-echoes-from-japans-past/100025/#img01>.

these are intertwined. A folding mattress called Futon is placed on the floor and used for sleeping and resting. It is removed after use and stored in closets during the day. The space is now empty and ready for new use. With all of these, one of the most obvious characteristics of traditional Japanese houses is the ability of the space to change and transform.

Traditional Japanese houses received one of the greatest blows in 1923. The Kanto earthquake is a very critical threshold for the Japanese. They were all faced with great demolition (Figure 18). The country was devastated by heavy seismic waves of 7.9 magnitudes. Although the duration of the earthquake is not certain, it is stated in various sources that it is between 4 and 10 minutes. The fires occurred after the earthquake caused greater damage. More than 694,000 homes were damaged or destroyed during the earthquake. Approximately 381,000 of them were burned in the fires. Nearly 142,000 people perished.<sup>62</sup> Most of the existing buildings consisted of wood construction, and they were destroyed after the fire. This catastrophe caused the Japanese to confront the disadvantages of wood material and re-questioning the conventional construction systems.<sup>63</sup>

16 years after the destruction of the earthquake, the Japanese faced more than heavy destruction. World War II occurred, and the cities were destroyed again. The war ended with the dropping of the nuclear bombs

**Figure 19:** Image of Tokyo's Demolition Seen from The Top Of The Imperial Hotel Which Was Designed By Frank Lloyd Wright And The Only Hotel In The Area That Survived The 1923 Kanto Earthquake And Fires. (Source: US Geological Survey / Science Photo Library)

"A good idea of the tremendous devastation in Tokyo wrought by the earthquake and fire. Enclosed find a few snaps taken on the top of the Imperial Hotel in Tokyo which is the only hotel in the earthquake district that survived." J.H. Messervey, letter dated March 5, 1924.<sup>64</sup>





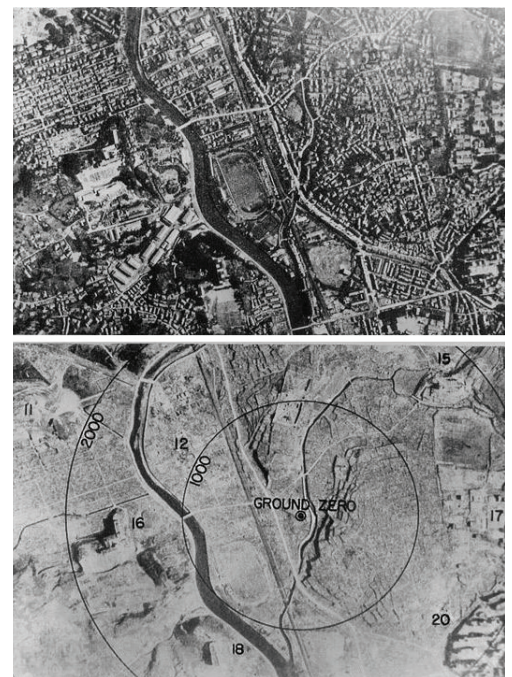
on Hiroshima and Nagasaki in 1945 (Figure 19). More than 220,000 people died from the bomb, and many suffered permanent damage and disease from the radiation emitted by the bomb.<sup>65</sup> Japan had hit rock bottom. All these destructions have fed the desire of being permanent, which is called “mujokan”- one the basis of the Zen culture-, and has once again become a belief they hold tightly to.

With the end of the war, cities began to be rebuilt rapidly. Japan began to become politically stable and have a rising economy. In the mid-1950s after the war, with the effect of rapid industrialization and great economic growth, there was an intense population flow from agricultural areas to metropolises such as Tokyo, Osaka, and Nagoya. Young Japanese people who left their homes and migrated to urban areas got a job in these metropolises and increased their income. Most of the young generation, who felt safe due to their economic income, got married in their 20s and had children in a short time. In a word, rapid economic growth resulted in a marriage boom. It was inevitable for this young generation who was in a foreign city and away from their families to establish their own nuclear family. And this led to the strengthening of gender-based family roles, consisting of a husband who earns money for his family and a housewife with full-time housework and childcare. Indeed, according to the census, the number of typical nuclear family households consisting of “a married couple with children” increased from about 7.5 million in 1955 to 15 million in 1980.<sup>66</sup>

Technological developments were accelerating all over the world. Japan also participated in this race with companies such as Toyota, Sony, Panasonic, and Toshiba. However, its effectiveness has gradually decreased in this race. Meanwhile, Japanese architects met with the concrete material through the Western architecture. They were influenced by the modern movement and launched their modern architectural movement called “Metabolism”. But even the concrete material could not prevent the desire of being temporary. The highly recognizable Nagakin Capsule Tower is one of the representations of this movement. Consisting of concrete capsules, the structure still had the idea of being “temporary.” However, this remained a purely utopian idea. The basis of the design idea was that the modules have a certain lifetime and change and transform over time. However, it could not do that. The building has been in Tokyo for 48 years just like the first day, with all its permanence. Nevertheless, the building consisting of capsules measuring 4 x 2.5 meters is still inspiring for architecture and micro-living.

65. Ilgin Yorulmaz, “Hiroşima Ve Nagasaki: Atom Bombalarının Savaşta Kullanılmasının 75. Yılında Nükleer Silahsızlanma Hala Hayal,” BBC, August 6, 2020, <https://www.bbc.com/turkce/haberler-dunya-53671515#:~:text=6%2D9%20A%C4%9Fustos%2C%202.,220%20binden%20fazla%20ki%C5%9Fi%20%C3%B6lm%C3%BC%C5%9Ft%C3%BC>.

66. Akihiko Kato, “The Japanese Family System: Change, Continuity, and Regionality over the Twentieth Century,” 2013, <https://doi.org/10.4054/mpidr-wp-2013-004>.



**Figure 20:** Nagasaki City Before and After the Nuclear Bomb Attack. Source: U.S. National Archives, RG 77-MDH

67. Hildner, *Small Houses*, 21.

68. Eric Johnston, "Lessons from When the Bubble Burst," *The Japan Times*, April 10, 2013, <https://www.japantimes.co.jp/news/2009/01/06/reference/lessons-from-when-the-bubble-burst/>.

69. *Ibid.*

70. Klasto, "Tokyo's Kyōshō Jūtaku," 156.

Steering the world economy and politics since the mid-1970s, Japan has become the world's second-largest economic power after the USA with its national income. Tokyo led the way in Japanese growth. The city, which is the economic center of world-renowned Japanese companies, soon took its place among the world's largest financial centers. This financial responsibility enabled Tokyo to grow rapidly in terms of population and paved the way for it to become the world's most populous city. Meanwhile, Japanese architecture followed technological developments closely. Their interest in mass production and prefabrication transformed and developed the relationship with material and the methods of construction. The 1980s were the golden years in Japan which was economically the highest level of prosperity. Urbanization has become increasingly accelerated and housing prices have risen.<sup>67</sup> The Japanese were in wealth. They were traveling in record numbers, buying luxury bags and clothes, and drinking the best wine. With the decline in bank loans, real estate prices continued to rise steadily and reached a peak. The increasingly valued real estate market caused land and real estate ownership to be seen as a great investment tool. This created a vicious cycle where land was used as a tool to get more loans and then used to buy more land in the stock market.<sup>68</sup> At that time, the buzz of new small urban apartments known as *kyōshō jūtaku*, which means narrow house in English, was beginning to be heard. These apartments were interpreted as a reaction to the decline in the importance of organically growing traditional neighborhoods and as an alternative to life in the suburbs.<sup>69</sup> Essentially, these houses began to appear in the cities of Tokyo and Osaka in the post-war period through the examples include Tower House (1966) built on a small plot of 12 square meters designed by Takamitsu Azuma (Figure 20), and Ando Tadao's Azuma house (1976) (Figure 21). But the real prelude to the growing interest in these houses marks the time when large numbers of people were forced to live outside of the city center due to rapidly rising land prices after the burst of the bubble economy in 1992.<sup>70</sup>

The 1990s are known as the bubble economy. Japan entered a period of great economic recession due to the increase in bank loans and external borrowing. The inflating bubble burst and newspapers began to swarm with news of housing loan corporations that went bankrupt one by one. Thus, Japan entered a period of economic stagnation known as the "lost decade" for the period 1991-2001 and *Jūtaku* houses became an alternative for young city dwellers who desperately insist on living in the heart of the city despite



the skyrocketing land prices. The economy began to recover a little by 2001, but the 2008 Great Recession hit Japan and never reached its levels in the 1980s. Subsequently, Japan took another major blow by the 2011 Tōhoku earthquake and tsunami.<sup>71</sup>

The 21st-century, known as the information age or digital age has brought radical demographic changes with it. As in the rest of the world, the role of women has changed radically in Japan. Women are now less dependent on home and have gained their own economic freedom. On the other hand, the uncertain conditions of the economy pushed people not to make long-term plans. People started to live more spontaneously. They made plans for only short periods because of the unclear future. At the same time, their daily habits also transformed, and the time people spent at home decreased. Moving away from the idea of taking root in a particular place, new lifestyles based on moving between cities and even countries began to emerge.

71. Finbarr Flynn, "Yen rises further, Japan faces next lost decade.", Bloomberg, 17 June 2016, <https://www.bloomberg.co.jp/news/articles/2016-06-17/O8WH6G6TTDS401>.



**Figure 21:** Left: Tower House by Takamitsu Azuma (Source: Murai Osamu / © Courtesy of Azuma Architects)

**Figure 22:** Right: Row House (Azuma House) By Tadao Ando (Source Archiweb)

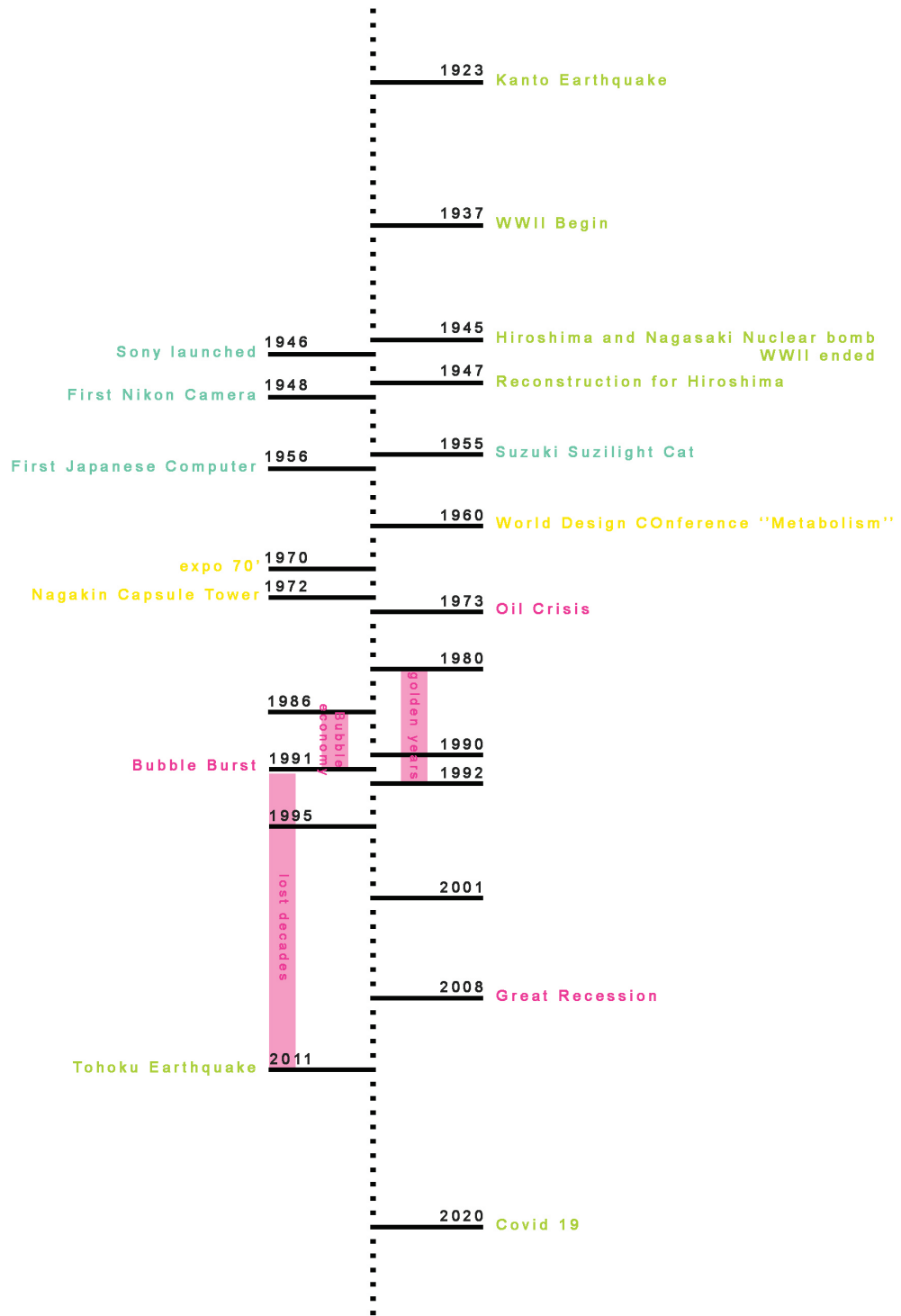
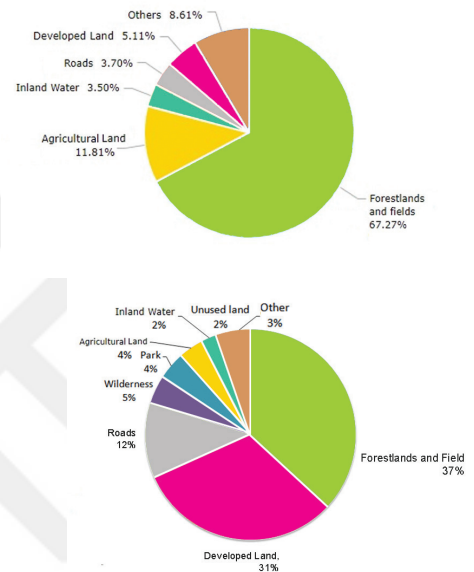


Figure 23: Timeline of Japan's Thresholds for Micro-Living

## Being an island country

Japan is an island country with its unique natural beauty and topography. The land is full of mountainous regions and rugged terrains accounting for about three-quarters of its total area. According to data from 2016, forestland and fields constitute the largest part of the country's surface area. There are 25.40 million hectares of forestland and fields and 4.47 million hectares of agricultural land. Together, forestland, fields, and agricultural land thus cover approximately 80 percent of the nation. Only 5 percent of the total area is used as a developed area such as residential and industrial land<sup>72</sup> (Figure 23). In addition, taking its tendency to geological phenomena into consideration, it can be said that the habitable area in Japan is very limited. Its struggle with density is more challenging than many countries. As a small island, it cannot expand to lighten the density. Even in Tokyo, which is one of the most intense urbanization areas in Japan, one third of its total area consists of mountainous and rough terrains. These areas are not suitable for construction. Considering that the population has been increasing regularly since 1945 and there has been intense migration to city centers, the idea of downsizing has been one of the inevitable alternatives in this limited geography.



**Figure 24:** Percentage of Surface Area by Use Japan And Tokyo  
(Source: Statistical Handbook of Japan 2020, MIAC & a booklet "Kurashi to Tokei 2016")

## Population density

It is a little more difficult to understand the population density in Japan. Because the country consists of megacities, cities, metropolitan areas (Metro), prefectures and wards. Metropolitan areas with a population of more than 10 million are called megacities. This expression is used to describe the "influence" that a city has. Currently, 3 of the 37 megacities in the world are in Japan. These are the Greater Tokyo, Osaka, and Nagoya. According to 2020 data, the Greater Tokyo Area with a population of approximately 38 million is the world's most populous metropolitan area. While Japan is currently experiencing a decline in the population, Tokyo is an exception. It keeps growing with immigration from different cities and countries. According to the Statical Handbook of Japan 2020, among Japan's 47 prefectures, Tokyo Prefecture had the largest population of 13.52 million and the highest population density at 6,200 people per square kilometer. This density was almost 18.1 times larger than the national average (340.8 persons per square

**72.** "Statistical Handbook of Japan 2020," Statistics Bureau of Japan (Statistics Bureau Ministry of Internal Affairs and Communications Japan), accessed June 14, 2020, <https://www.stat.go.jp/english/data/handbook/pdf/2020all.pdf>.

73. Ibid.

kilometer). About 70 percent of the population of Tokyo Metropolis in Tokyo 23 Wards. This is a serious figure that shows that about 7 percent of the entire Japanese population lives here.<sup>73</sup>

In summary, when these values are analyzed, it is possible to say that Japan is not among the densest countries according to the population density within the country. But this value is quite misleading. Its characteristic topography has led to a concentration of population in particular regions. If one wants to get an idea of the size of population density for Japan, it would be a more realistic approach to refer to density in metropolitan areas or density in urban areas. According to the definition of the Metropolitan area, which includes the urban area and its surrounding commuter areas, Tokyo is the most populous city in the world. It is also the largest city by population using the urban area which refers to a contiguous area with a certain population density.



**Figure 25:** Photo by German Photographer Michael Wolf, "Tokyo Compression"



**Figure 26:** The Very Crowded Metro and The Workers Who Are Tasked with Pushing People To Fit Into The Subway During Rush Hours Called "Oshiya". Photo by Kim Newton



## More people & less area

It was inevitable that the prices of houses built on limited habitable lands are exorbitant. And one of the ways that put so many people in a limited and precious urban area is to reduce the living space. So how much space do people take up in Japan?

Japan's Ministry of Land, Infrastructure, Transport and Tourism (MLIT) publishes comprehensive guidance on the minimum and recommended amount of living space a person should have to have a "healthy and culturally fulfilling life". According to this guide, the minimum living area for a single person living in a city center is determined as 25 m<sup>2</sup>, and the optimum is 40 m<sup>2</sup>. In the surveys, it was determined that 58% of the Japanese live in areas smaller than the minimum area and the average living area is smaller than the minimum area with 22.5 m<sup>2</sup>. These ratios become more surprising when focusing on the more central high-density regions. According to the 2015 survey, only 30.4% of the households in 23 Wards (Tokyo) had enough living space to meet the government's minimum 25-sqm recommendation.

Looking at the densely populated city centers of the island countries, it is seen that the average house in Tokyo is 66 square meters, this value has increased to 80 square meters in London and decreased to 40 square meters in Hong Kong (Figure 27). But there are too many people living in much smaller spaces.



**Figure 27:** Skyline of High-Density Tokyo City  
(Source: REUTERS/Issei Kato)

74. Scarr, Hernandez, and Sharma, "Sheltering in Small Places,"

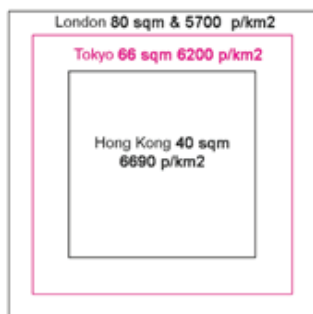


Figure 28: Average Home Size and Population Density in London, Tokyo And Hong Kong

It is more meaningful to make a comparison on “dwelling space” which includes living areas such as bedrooms, living areas, kitchen, and dining area. The bathroom and hall are not included. In this context, the average dwelling space in Tokyo is 41 square meters. Across Japan, there are 5.7 million homes smaller than 19.7 square meters. Out of Tokyo’s 6.8 million households, there are more than 1.4 million that are less than 19.7 square meters. But there are many people living in even smaller areas. There are 75,900 households in Tokyo with a total of 9.8 sqm “dwelling space” (Figure 28). Considering that the average number of members per household in Tokyo is approximately 2 according to 2015 data, the “dwelling space” per person here is 20.2 square meters. In 2015, the population density across Tokyo prefecture was the highest among Japan’s prefectures, at 6,168.7 persons per square kilometer. This was more than 18 times higher than the national average but less than Hong Kong’s average of 6,940 people per square kilometer. And even more strikingly, 1.34 million households in Tokyo have less than 11.4 sqm dwelling space per person, and 25, 400 households have less dwelling space than 4.8 sqm per person. This value is very close to the 4.5-5.5 square meters determined by The UN Refugee Agency as living space per person in refugee camps.<sup>74</sup>

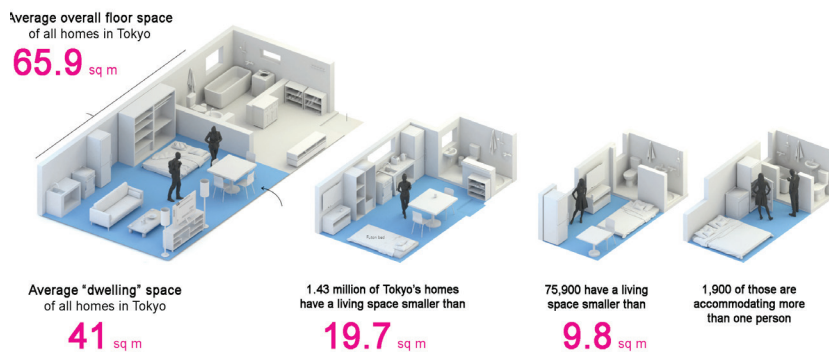


Figure 29: Average Living Spaces in Tokyo (Source: Reuters/Sheltering in Small Places)

## Narrow lands & Eel’s Nest

It is not hardly surprising that when you walk around a busy urban center or a rural area in Japan, you will see small and oddly shaped pieces of land almost as small as the car’s footprint. For the Japanese, these plots are very valuable, sometimes even more than the buildings standing on them... In

the late 90s, the Tokyo Metropolitan Government increased the inheritance tax on land, which is still in effect today. According to this new regulation, the tax bill would accumulate for the lands that were handed over between generations, which caused people to divide large plots of land into smaller pieces and sell some of them in order to pay the tax bill.<sup>75</sup> For this reason, the city is surrounded by pieces of land which are awkwardly shaped, extremely long, generally not more than 4.5 meters wide. These tight plots can be classified into three types: the “corner type” which is open on both sides, the “eel type” which is long and thin, and the extreme version of site; the “flag type” with an L shaped.<sup>76</sup>

In addition, developers often try to make a profit by dividing individual lands that frequently change hands in Japan into as many smaller plots as legally permitted. People who purchase this type of land often prefer to bring down the existing building and rebuild it according to their own needs.<sup>77</sup> Besides, Japanese building codes requiring setbacks result in unused empty spaces. And the combination of all of these in the city has led to leftover spaces such as dead corners. Japanese architects began to discover ways to reveal the potential of these useless lots in the most efficient way, and they created extraordinary designs with rational solutions on a very narrow land.<sup>78</sup> (Figure 29)

75. Klasto, “Tokyo’s Kyōshō Jūtaku,” 157

76. Yoshiharu Tsukamoto and Momoyo Kaijima, *Bow-Wow from Post Bubble City = Atorie Wan Furomu Posuto Baburu Shitei* (Tōkyō: INAX Shuppan, 2006), 79.

77. Claire Voon, “Why Japan’s Futuristic Micro-Homes Are So Popular,” *Hyperallergic*, January 11, 2016, <https://hyperallergic.com/250380/why-japans-futuristic-micro-homes-are-so-popular/>.

78. Hildner, *Small Houses*, 11.



**Figure 30:** Some Examples of Houses on Small Land;  
Left: “flag type” Atelier Bow Wow  
Right: “eel type” Lucky Drops, Atelier Tekuto

## Keep your finger on the pulse & rebuild

In this geography where there is so much uncertainty, economic instability, and possible natural disasters that may occur at any time, the land still carries an investment value. Perhaps this is because after the many natural disasters, it is a piece of land that all Japanese people can physically own. And it is not surprising that a house has a short lifespan in Japan where it is a traditional ritual to bring down and rebuild a temple every 20 years. Rebuilding has deep roots in Japanese culture. It can be observed in the reconstruction ceremony of the Ise Shrine called “Shinken Sengu”. This tradition has been going on since 690 AD and has a great national and cultural importance. While for most societies’ shrines are seen as untouchable heritage that must be preserved forever, in this ceremony; what should be preserved, and the method of preservation is quite different. The Naiku and Geku temples are demolished and rebuilt every 20 years. In this 20-year cycle, the rebuilding of the shrines takes 8 years and then they are destroyed again after 12 years (Figure 30).

“On the surface it might seem odd to take down a perfectly good structure and build it again, but the purpose of this re-building is two-fold. Firstly, over time it renders the shrines eternal and everlasting. Secondly, it enables the skills and knowledge of the shrine carpenters and craftsmen to be passed on from generation to generation. Given that the ceremony has been taking place for over 1000 years it’s testament to the power of tradition.”<sup>79</sup>

79. Daigo, “Traditions: Shikinen Sengu,” Japan Woodcraft Association, February 13, 2020, <https://japanwoodcraftassociation.com/2020/02/13/traditions-shikinen-sengu/>.

**Figure 31:** The Shikinen Sengu Ceremony  
(Source: HH Architecture)





It is easier to gain insight into the desire of being temporary in a society where it is a tradition to demolish and rebuild a shrine. Undoubtedly, there is a kind of permanence here. But this permanence arises from the continuity of being temporary. Building, demolishing, then rebuilding, and demolishing again... rebuilding by the simplest, the most primitive, and the most fundamental ... Repeating these actions over generations describes a kind of knowledge transfer. The cycle of destruction and rebuilding allows knowledge from the past to come across with current information and methods. In this context, it may constitute the foundations of the Japanese construction culture that is not afraid of trying and failing, adapting quickly to new situations, and keeping the pulse of the market. And this adaptability may have caused the micro-living concept to have a very old story in Japan as many cultures are just beginning to meet.

In Japan, the house is not built for eternity. According to the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), the average lifespan of a wooden house is 25-30 years, and a concrete house is 30-40 years. Then the house is brought down and rebuilt. It has been pointed out that in spite of there being actual housing stock available, this stock is not being used for upgrading/moving. Besides, the average cost of purchasing a newly built mansion apartment with an average floor area of 64.48 m<sup>2</sup> in the Tokyo Metropolitan Area in 2017 was \$ 3,319,540, while the average construction cost of a custom-built house built on a 50 square meter plot was \$ 110,000.<sup>80</sup> In addition to the gap between prices, the owner of the house is also the landowner in custom built houses, while there is no land ownership in a mansion apartment. Given the importance of land ownership in the context of social security in Japan, the idea of buying one of the small plots in the heart of the city and building a house designed by an architect according to the user's specific needs is quite common. Within the distribution of existing housing and new housing, the share of new housing in Japan is higher than existing housing (Figure 31). And it is very high compared to countries in Europe and North America. According to 2013 data, new homes make up 85 percent of existing homes in Japan, 30 percent in France, and only 10 percent in the United States and the UK.<sup>81</sup> It was stated that although there is an existing housing stock, this stock is not used for improvement. And this once again reveals the passion of Japanese for the new.

**80.** Klasto, "Tokyo's Kyōshō Jūtaku," 157.

**81.** "White Paper on Land, Infrastructure, Transport and Tourism in Japan, 2015" (Ministry of Land, Infrastructure, Transport and Tourism), accessed June 15, 2021, <https://www.mlit.go.jp/en/statistics/white-paper-mlit-2019.html>, 169.

82. “Ministry of internal affairs and communications, population and households.” Ministry of Internal Affairs and Communications, 2015, <http://www.stat.go.jp/english/data/kokusei/index.html>

83. “Statistical Handbook of Japan 2020,” 11.

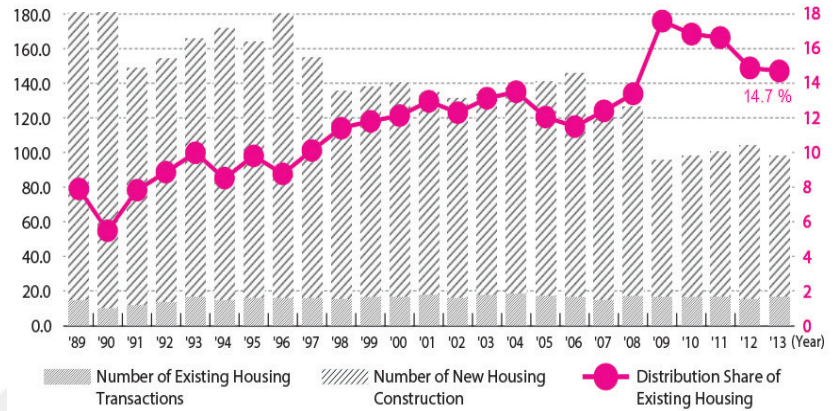


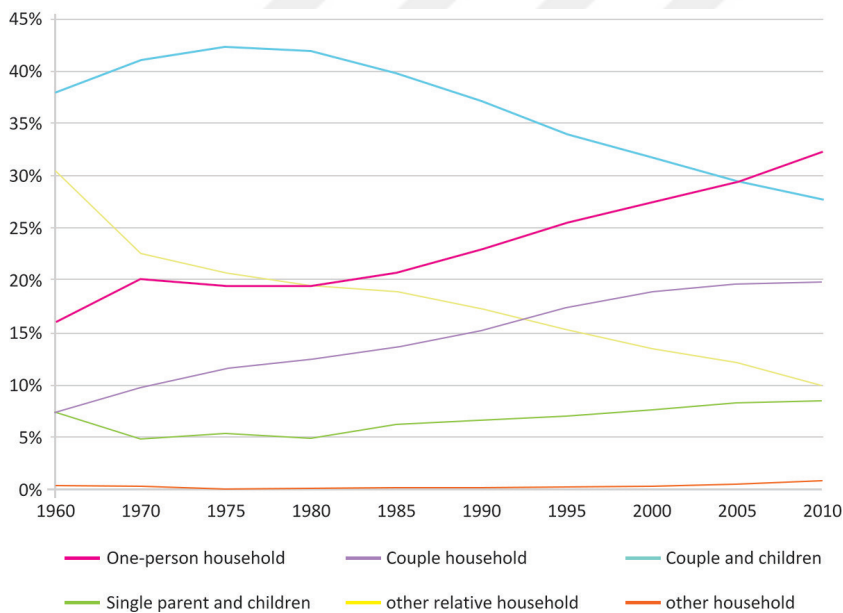
Figure 32: Changes in The Distribution Share of Existing Housing (Source: MLIT 2015)

In this context, the tradition of demolishing and rebuilding makes it possible to keep up to date. While architecture is one of the most cumbersome ways of generating ideas about transforming daily life conditions, changing demographic structure, and technological developments, it turns this situation upside down. It does this in many contexts. The city has become a laboratory where new construction methods are tested, the boundaries of the material are challenged, and new spatial fictions that meet daily life are transformed by technological and demographic changes. It would not be a big deal if these experiments fall through thanks to the short life expectancy. In this context, the idea of micro-living is one of these experiments and coincides with the philosophy of “living with the foundation”, which is the basis of Japanese culture.

## The age of solo and changing lifestyles

The instability of the economy and the transformation of the role of women in society have profoundly affected family structure. According to the census published by the Ministry of Internal Affairs and Communications (MIAC) in 2015, 44.2 percent of Japanese households in 1980 was a typical nuclear family consisting of a married couple and child(ren) (Figure 32). This rate dropped to 27.9 percent in 2010 and is estimated to be 21.9 percent by 2030.<sup>82</sup> While marriage rates gradually decreased, the age of marriage gradually increased. In conjunction with economic concerns, changing preferences, and late marriage, the average household size dropped from 3.41 members in 1970 to 2.33 members in 2015.<sup>83</sup> According to a report

published by the Ministry of Health, Labor and Welfare, the number of babies born in Japan in 2019 is the lowest number seen since registration began in 1899.<sup>84</sup> Undoubtedly, the dynamics and priorities of the present period have a great effect on the decrease in these rates, but in parallel to this, the destabilization of the employment conditions also has a significant impact.<sup>85</sup> Being unable to make predictions about the future created a huge lack of confidence. Now, Japan is in the age of 1-person life. The number of people living alone is increasing day by day. MIAC released the 2016 Census shows that in Japan, the proportion of families living alone is 32.5%, which is the highest in history.<sup>86</sup> In light of this information, it can be said that the idea of micro-living is an inevitable alternative in Japan where the birth rate is gradually decreasing, the population is getting older, and the number of households is increasing. And in Tokyo, singles usually live in dwelling units that they rent in urban areas. Most of these units are smaller than 29 m<sup>2</sup> and of low quality.



According to the 2017 Employment Status Survey Results Summary, 31.2 percent of young Japanese aged 15-34 work in irregular jobs.<sup>87</sup> Employers are striving to survive in this economic recession period by reducing the number of regular employees and hiring workers in informal ways. This alarms a precarious future, especially for the younger generation. Ownership and investment tools of these generations have changed considerably due to

84. Emiko Jozuka, Jessie Yeung, and Jake Kwon, "Japan's Birth Rate Hits Another Record Low in 2019," CNN (Cable News Network, December 30, 2019), <https://edition.cnn.com/2019/12/25/asia/japan-birthrate-hnk-intl/index.html>.

85. Richard Ronald, Oana Druta, and Maren Godzik, "Japan's Urban Singles: Negotiating Alternatives to Family Households and Standard Housing Pathways," *Urban Geography* 39, no. 7 (July 2018): pp. 1018-1040, <https://doi.org/10.1080/02723638.2018.1433924>.

86. Yifen Zhong, "Space for one", M.A Thesis. (Massachusetts Institute of Technology, 2019)

87. "2017 Employment Status Survey Summary of the Results," Statistics Bureau of Japan (Statistics Bureau), accessed November 2, 2020, <https://www.stat.go.jp/english/data/shugyou/pdf/sum2017.pdf>.

**Figure 33:** Household Survey by Census (Source: Richard Ronald, Oana Druta & Maren Godzik, 2019)

88. "Issues with Seniors in Japan," Foreign Press Center Japan, accessed August 18, 2020, [https://fpcj.jp/en/j\\_views-en/magazine\\_articles-en/p=47734/](https://fpcj.jp/en/j_views-en/magazine_articles-en/p=47734/).

89. Marriage and Childbirth in Japan Today: The Fifteenth Japanese National Fertility Survey, 2015 (Results of Singles and Married Couples Survey), (National Institute of Population and Social Security Research, March 2017).

90. Michael Hoffman, "Why Marry, or Worry, When We Can Be Alone Together in Ohitorisama Japan?" The Japan Times, March 1, 2014, <https://www.japantimes.co.jp/news/2014/03/01/national/media-national/why-marry-or-worry-when-we-can-be-alone-together-in-ohitorisama-japan/>.

91. Enis Günaydin, "Japonya'yı Hızla Saran Yalnız Yaşama Sanatı: Ohitorisama," Euronews, November 14, 2018, <https://tr.euronews.com/2018/11/14/japonya-y-h-zla-saran-yaln-z-yasama-sanat-ohitorisama>.

the unclear future and insufficient economic capital. Well-known Japanese management scientist Kenishi Ohmae uses the term "Low desire Society" for young Japanese who tend to "choose not to have".<sup>88</sup> This term reflects the existential challenges of an aging society. Unlike their parents who lived in the 70's golden ages, these young people worry too much about the future and avoid making long-term plans. They do not marry and have no desire to buy luxury cars. They prefer to save rather than spend due to their strong distrust of the current pension system. In this context, micro living can be an alternative for the young generation who struggle to survive with their own unknowns in the fuzzy image of the future scenarios.

Economic concerns aside, there is an apparent tendency to live alone. Due to a survey by The National Institute of Population and Social Security Research, the proportion of single men who had no relationship with the opposite sex increased from 61.4% to 69.8%. For women, this value increased from 49.5% to 59.1%.<sup>89</sup>

"As recently as 1990, a mere 5 percent of men and 4 percent of women in Japan were "lifetime singles," defined as people over 50 who have never married. By 2010 the percentages were 20.14 and 10.61, respectively. By 2030, demographers say, they will be 30 and 23. Nearly a third of all men and a quarter of all women, never marrying!"<sup>90</sup>

These single people believe that living alone is not the same as feeling lonely. This is a conscious choice. On the one hand, it evokes the ascetic lifestyle and the Zen, which are related to the ideology of living with the fundamentals by avoiding ephemeral pleasures and retreating to pursue spiritual pleasures.

Another lifestyle "Ohitorisama", one of the rising trends in Japan in recent years, is defined as the art of living alone. According to JapanDict (Japanese Dictionary), the word means "alone" or "one customer". The culture of loneliness manifests itself not only in the real estate sector but also in every part of the country and in every sector associated with daily life. Many sectors target the masses who prefer "one person life" by adapting to social change. Cinemas separated by single-person compartments, restaurants, karaoke rooms, capsule hotels, food supplies sold for single meals, travel agencies that prepare routes for those who want to travel alone, and more refers to this target.<sup>91</sup>(Figure 34,35,36,37,38) You may place your order

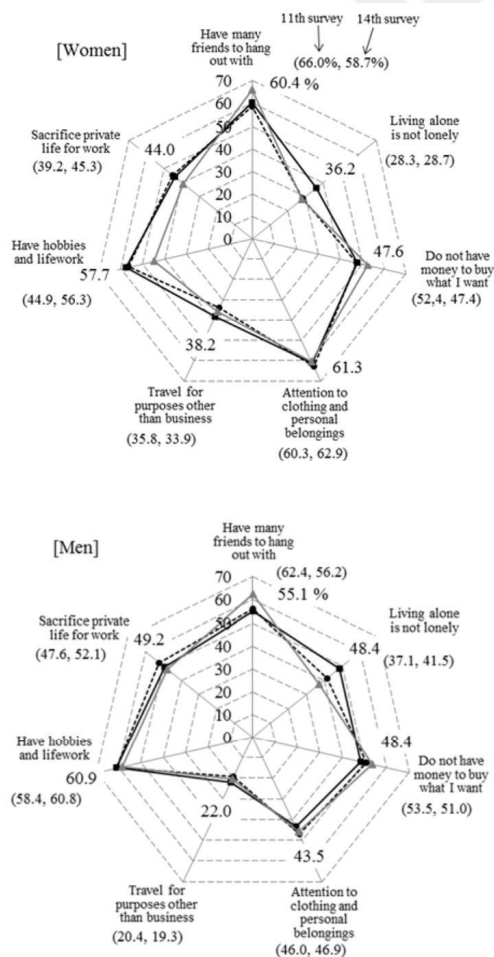


Figure 34: Lifestyle of Singles, By Survey (Source: The Fifteenth Japanese National Fertility Survey in 2015 by The National Institute of Population and Social Security Research)



with the help of a vending machine without communicating with anyone and eat at single seat tables separated by closed compartments, or you can sing alone for hours in the personal entertainment rooms about 2.5 square meters in single room karaoke bars called “Hitokara”.<sup>92</sup> It may sound scary from a Western perspective, but for the Japanese, solitude is an acquired right that represents individuals who have gained their freedom by breaking the traditional Japanese family structure but also evokes the idea of a dystopian future of increasingly lonely people. The word “Hikikomori”, which means social withdrawal and describes adults and adolescents who abnormally avoid social contact, may be one of the previews of this dystopia.

There are many extraordinary lifestyles hidden in the big city life in Tokyo. For some, these lifestyles are a solution to one of the most basic human rights, “sheltering”, while for others it is a pure conscious choice. “Net cafe refugees” is one of the examples of these unique alternatives. (Figure 38) It is a semi-nomadic class that does not own a house and a permanent address and spends the day in internet cafes or manga cafes because of economic reasons.<sup>93</sup> While such cafes initially offered only internet service, some of them started to offer services that would meet the needs of daily life such as eating, drinking, and showering. Before the pandemic, a nightly stay in a 1.85 square meter net cafe room was between \$17 and \$28.<sup>94</sup> This low cost of accommodation has attracted these people and has simply become a home for them. Government research shows that about half of the people staying here got low-paid temporary jobs and are uncertain what will happen tomorrow. About a quarter of them are in their 20s. Although most of them have little to do with the internet, they spend almost half of the week in cafes like Manga Square. According to the figures announced by the Tokyo metropolitan government in 2019, Tokyo, known as a high-tech and wealthy city, has approximately 5,126 homeless and 4,000 of them are Net Cafe Refugees. On the other hand, not only the homeless are accommodated in these cafes. According to a CNN report, the number of people staying in these internet cafes overnight in Tokyo is 15,000, most of them tired Japanese businessmen who go for a drink after work and miss the last train to their home.<sup>95</sup>

92. Lynda Deaver, “Singing Solo: Trying Hitokara at 1Kara,” GaijinPot Blog, October 16, 2014, <https://blog.gaijinpot.com/solo-karaoke/>.

93. Justin Mccurry, “Tokyo Dreaming,” The Guardian, September 28, 2007, <https://www.theguardian.com/world/2007/sep/28/japan.socialexclusion>.

94. Emiko Jozuka and Will Ripley, “When Your Home Is a Japanese Internet Cafe, but the Coronavirus Pandemic Forces You Out,” CNN, May 4, 2020, <https://edition.cnn.com/2020/05/03/asia/japan-coronavirus-internet-cafe-refugee-hnk-intl/index.html>.

95. Ibid.



Figure 35: A Single-Seat Restaurant in Tokyo

## One Person Life in Tokyo



**Figure 36:** Solo Karaoke Box in Tokyo  
(Source: Tofugu)



**Figure 37:** Solo Cinema  
(Source: Toho Cinemas)



**Figure 38:** Single Seat Restaurant  
(Source: kyoto-np.co.jp)



**Figure 39:** Book and Bed  
(Source: thisis-japan)



A short story of Eddie Tanaka, one of the net cafe refugees;

“Tanaka has been dividing his time between internet cafes, capsule hotels and all-night saunas for the past three years since fleeing his home in Saitama prefecture, north of Tokyo, after falling behind on his rent. “I know it’s cramped here, but there is no way I could afford the deposit and rent on an apartment, even a one-room place,” he says as he devours a Slush Puppie with a plastic spoon. “All the drinks are free, I can use the PC for as long as I like, and there’s even a shower upstairs.” For all this he pays about 1,000 yen (£4.30) a night. On days when there is no room at the cafe, or when he craves a little more comfort, he pays a little more and stays at a capsule hotel - a bed and a TV in a room only slightly bigger than a coffin, with communal showers. What little cash he saves goes on occasional trips to a nearby “soapland” - sex shops where the female staff administer soapy “massages”- for 15,000 yen (£65) a time. “Even though I’m penniless, I am still a single, ordinary guy, and I like to play a bit from time to time,” he says. Tonight, though, Tanaka will be asleep by 11pm. He will be up again at 5am and, after a breakfast of two rice balls, a fried egg and a bowl of miso soup, out of the door in search of another day’s casual labour. He keeps his expenditure to about 3,000 yen (£13) a day, does not receive bonuses, and has no health insurance or pension. At a town hall somewhere in Saitama prefecture there is a residence permit with his name on it. But as far as the authorities are concerned, Tanaka might as well not exist.”<sup>96</sup>

In May 2020, Japan declared a nationwide state of emergency and closed businesses to contain the increase in coronavirus cases. Internet cafes were also included in these businesses, which put internet cafe residents in great trouble. Japanese authorities are striving to provide emergency shelter to support those living in internet cafes (Figure 40).<sup>97</sup> In this context, the pandemic reawakened the housing problem through Net cafes, whose origins date back to the 90s and was ignored in the context of offering a temporary alternative to the housing problem. Capsule Hotels, Manga Cafes, Net Cafes, cage-sized rooms, and more extraordinary examples are alternatives created by people seeking solutions for housing -maybe in an illegal way-. The fact

96. Mccurry, “Tokyo Dreaming,”.

97. Jozuka and Ripley, “Japanese Internet Cafe,”.

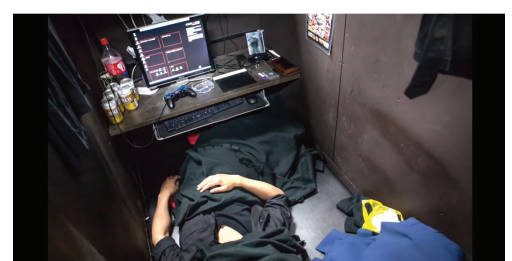
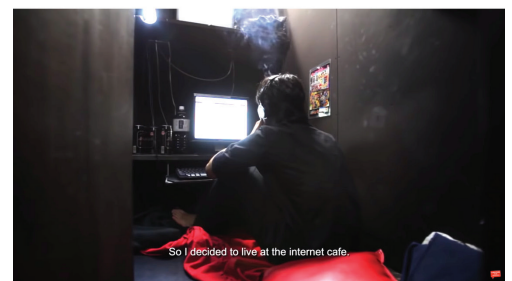
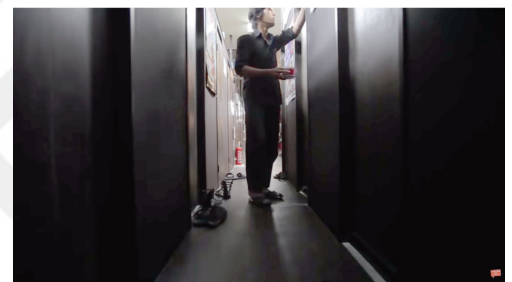


Figure 40: Life in Net Cafe



that they are in many parts of the city shows how ordinary these cafes are for the Japanese. It also maintains micro-living by its nature. On the other hand, the messy photos of cramped rooms that are micro in nature reveal the contradictory side of being micro and minimal.

**Figure 41:** Shelters Provided by Kanagawa Province for Those Staying in Internet Cafes That Are Requested to Be Closed Due to the COVID-19 Coronavirus Outbreak (Source: CNN)







# Micro in Hong Kong

# 03

## Fast-paced cramped city life

Hong Kong, which was a colony and islands group under the British Kingdom for 156 years, became a special administrative region of the People's Republic of China as of 1997. Since the entire region was transferred back to China in 1997, it is politically and economically independent from the People's Republic of China under the principle of "one country, two systems". Hong Kong, Asia's largest free market, busiest center of commerce, industry and tourism, is one of the most populous places in the world.<sup>98</sup> Crowded street markets, apartments rising towards the sky, restaurants overflowing with people, crowds flowing with an unremitting race through elevated walkways and streets, loud sounds, plenty of neon signs, laundries hanging from the balconies, insane energy, verticality, and many more visual extremes... (Figure 39) With all these, Hong Kong offers a dynamic daily life where the high-density can be felt every second of the day. This density is too ordinary and too typical to attract attention for Hongkongers. It is an integral part of daily life and also a way of life. Stating that lack of space brings people closer visually, mentally, and physically and this creates a vibrant, exciting, dynamic high-density space, Rooney describes the density in Hong Kong in her book "At Home with Density" with the following sentences:

"Density is experienced every day: in crowded street markets, looking across to rooms in other buildings, looking down at rooftops, inside windowless offices, in lifts, and elevated walkways. Here, virtually any space is viewed as usable space, no matter how crowded or how ugly, or how small."<sup>99</sup>

Hong Kong's limited urban areas are increasingly exceeding their capacity. The congestion surrounding the whole city has led to attempts to create extra space such as passages connecting the city from underground and above ground, elevated pedestrian paths, and even artificial island projects. Fast-paced urban life, constant movement, sheer density, limited personal distance in public spaces, getting used to physical proximity and not



Figure 42: Photo by Wing Ka Ho Jimmi

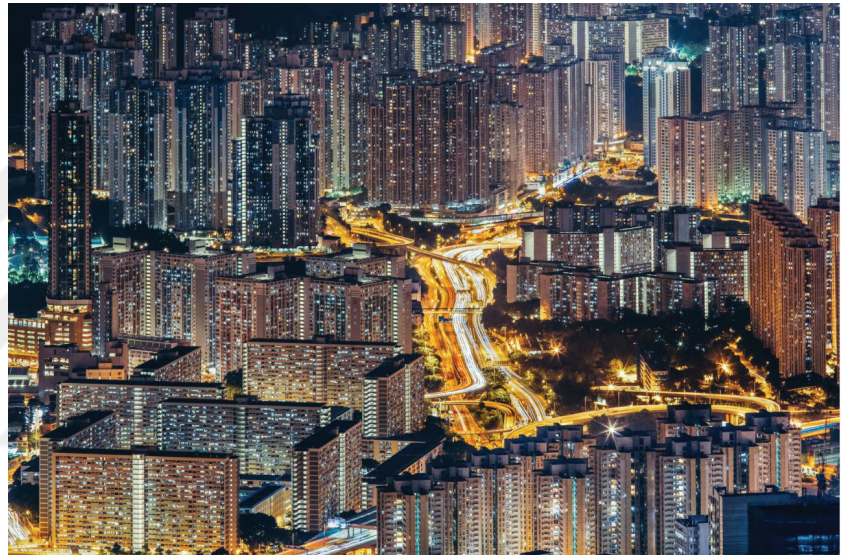
98. Hong Kong," Encyclopædia Britannica (Encyclopædia Britannica, inc.), accessed January 11, 2021, <https://www.britannica.com/place/Hong-Kong>

99. Nuala Rooney, *At Home with Density* (Hong Kong: Hong Kong University Press, 2003).

100. Ambrose Yeo-Chi King and Rance Pui-leung Lee, "High-Density Effects in Urban Areas: What Do We Know and What Should We Do?" in *Social Life and Development in Hong Kong* (Hong Kong: Chinese University Press, 1988), 14.

101. "Hong Kong: An Insider's Guide," *The Guardian* (Guardian News and Media), accessed March 18, 2021, <https://www.theguardian.com/hongkonginsidersguide/story/0,,1627052,00.html>.

being disturbed by it, living, or working with crowded groups in small spaces, high-paced daily life... All these have driven Hong Kong people to develop methods and behaviors to cope with density. They are also trailer that give clues about the domestic life of Hong Kong people.



**Figure 43:** Cityscape: Hong Kong Night  
Photo by Wing Ka Ho Jimmi

The methods developed by Hong Kong residents to get the maximum benefit from the domestic space are quite different from the widely accepted Western spatial theories and norms. Some are methods that shape their design cultures, such as space-saving techniques and compact furniture that allow the use of the same space for multiple purposes. On the other hand, some of the methods are socio-cultural mechanisms that derive from experiences that are an ordinary part of daily life. In fact, these methods are the consciousness of a high-density space that develops in the long term and significantly shapes daily spatial knowledge.<sup>100</sup> For example, close distance between people is culturally recognized in Hong Kong. Large groups are used to getting together in small places.<sup>101</sup> The tradition of different generations living together in a small house also supports this perception. In addition, one of the most typical methods is to organize daily life based on the outside. In short, an externalized lifestyle. In Hong Kong, the world's most expensive housing market, many people living in cramped apartments execute most of their daily work in public spaces. This externalized lifestyle stems from both the inadequacy of domestic space, long working hours, and the desire of Hong



Kong residents to socialize. Citizens generally spend time with their friends outside rather than at home and dining out very often. To give an even more absurd example, hourly-rate hotels are common for couples or lovers to make love.<sup>102</sup> On the other hand, domestic life also tends to stretch outside. While walking around the city, it is very likely to encounter laundry, dried fruits and vegetables hanging on the ropes tied to the streetlights, stairs, playgrounds, around high apartment blocks or to the edges of fences on the roadside. Although it is illegal to hang laundry in public places, many people tend to occupy public spaces because they do not have enough space for the dryer in their home. Photographer Ho Wing Ka Jimmi, who explored the city on foot, documented the transformation of public spaces into a drying rack with an adaptation of urbanites (Figure 43).<sup>103</sup>

All these habits are methods developed by urbanites to combat density and are essentially an effort to transform almost any area into a useful space. It emerges with the experience of intense urban life and the superposition of some cultural data. It is inevitable to develop these methods in order to continue to live here, because at the end of the day, a large and spacious home does not welcome Hong Kong residents who return home from this fast-paced, vibrant, cramped urban life.

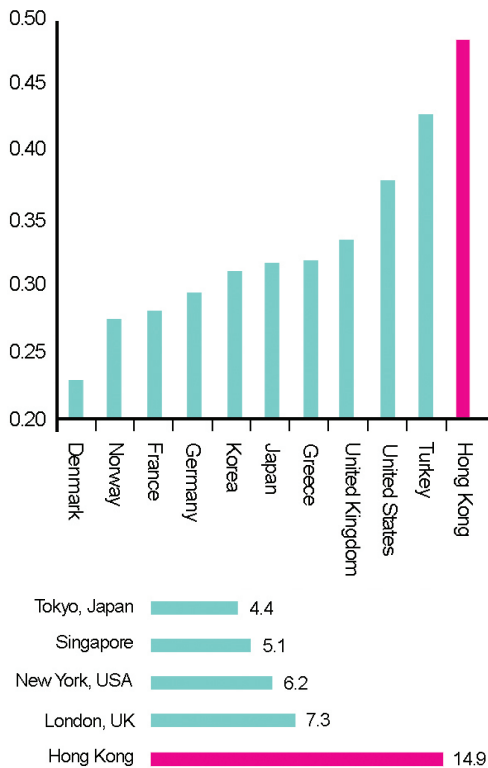
**102.** King and Lee, “High-Density Effects in Urban Areas,” 14.

**103.** Sophie Wright, “Laundry Art- Photographs by Wing Ka Ho: Text by Sophie Wright,” LensCulture, accessed June 15, 2021, <https://www.lensculture.com/articles/wing-ka-ho-laundry-art#slideshow>.



**Figure 44:** Laundry Art, Photographs by Wing Ka Ho

## Dwelling as a dream



**Figure 45:** Left: Gini Coefficient of Income Inequality, Mid2000s.<sup>104</sup> Right: House Price/ Household Income

Many global cities have difficulties in providing affordable housing to their citizens. But in the city of Hong Kong, this challenge has risen to extraordinary levels. The idea of owning a house for Hongkongers has become a dream that cannot be achieved, rather than a goal they strive for. Economic growth benefited only the richest and while the rich are getting richer with each passing day, the poor are getting poorer. According to the World Bank's Poverty and Shared Prosperity 2020 report, Hong Kong ranked 8th in the world in terms of income inequality, given the GINI coefficient which indicates the degree of inequality.<sup>104</sup> And it remains the world's most expensive housing market for 7 years in a row. Gaps between income levels have caused serious differences and injustices in terms of living standards. While some live in highly equipped ultra-luxury residences, the middle and middle-low-income segments live in social housing provided by the government and even subsidized for some.

The government has tried to find a solution to the housing problem with initiatives such as Home Ownership Scheme, Public Rental Housing, the Secondary Market Scheme, the Flat-for-Sale Scheme, Tenants Purchase Scheme, and many... Except Public Rental Housing, these initiatives aim to provide homeownership that is heavily government subsidized, with lower prices compared to the private housing market. Many citizens had to live in these public housing forms due to sky-high property prices. According to the report "Housing in Figures 2020" by the Hong Kong Housing Authority, 45.0 percent of the population lives in the forms of public housing.<sup>105</sup> But it cannot be said that these initiatives have completely achieved their goal. Rising demand caused the existing housing stock not being able to meet the demand for social housing, and as at the end of September 2020, the average waiting time for public rental housing was recorded as 5.7 years.<sup>106</sup> As a matter of fact, hundreds of thousands of people who cannot benefit from these opportunities or who cannot afford even public housing are exposed to sustain their lives under extraordinary conditions such as cage houses and subdivided-flats, which the UN describes as "an insult to human dignity".

As the lack of affordability of housing became an increasingly serious problem, the newly built flats are getting smaller and smaller to make the property relatively more economical. This shrinkage is not only observed in private residences. In fact, according to 2019 data, the average square meter

**104.** Valentine Henrard, "Income Inequality and Public Expenditure on Social Policy in Hong Kong," Civic Exchange, July 2011, <https://civic-exchange.org/report/income-inequality-and-public-expenditure-on-social-policy-in-hk/>.

**105.** "Housing in Figures- Transport and Housing Bureau," Transport and Housing Bureau- the Government of the Hong Kong Special Administrative Region of the People's Republic of Rhina (Census and Statistics Department, August 31, 2020), <https://www.thb.gov.hk/eng/psp/publications/housing/HIF2020.pdf>.

**106.** "Number of Applications and Average Waiting Time for Public Rental Housing," Hong Kong Housing Authority and Housing Department, May 10, 2021, <https://www.housingauthority.gov.hk/en/about-us/publications-and-statistics/prh-applications-average-waiting-time/index.html#:~:text=The%20Housing%20Authority's%20objective%20is,around%20three%20years%20on%20average.>



per person in state-provided social housing is 13.4 square meters. And it is quite striking that 83 percent of the Public Rental Houses are flats with an area of less than 40 square meters.<sup>107</sup> This value is extremely small, even among global cities. Most public houses are apartment blocks with 40 or more stories, containing cramped and dense flats. And the lack of the minimum area restrictions makes this situation more critical every day.

107. Ibid.



**Figure 46:** Stunning Photos of High-Rise Apartments in Hong Kong. (Photo by German photographer Michael Wolf, "Architecture of Density")



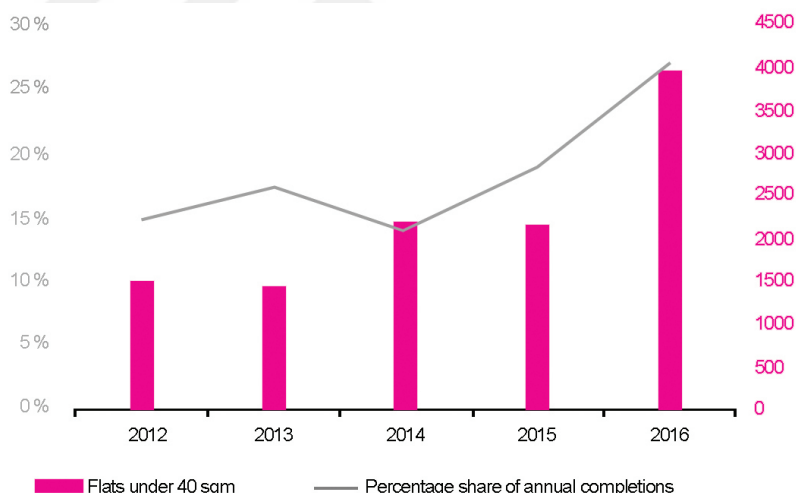
**Figure 47:** Photo by German Photographer Michael Wolf, "Back Door"

108. "LCQ3: Areas of Private Residential Flats," The Government of The Hong Kong Special Administrative Region, Press Releases., accessed February 3, 2021, <https://www.info.gov.hk/gia/general/201704/12/P2017041200289.htm>.

109. Mandy H.M. Lau and Xueji Wei, "Housing Size and Housing Market Dynamics: The Case of Micro-Flats in Hong Kong," *Land Use Policy* 78 (2018): pp. 278-286, <https://doi.org/10.1016/j.landusepol.2018.06.039>.

## Micro-living as an option or imposition

There is no official definition of micro-living in Hong Kong. Flats are classified as Class A, B, C, D and E based on square meters. Class A are flats with a saleable area less than 40 sqm<sup>108</sup> and are generally called micro-flats. These flats constitute a very significant share of the private sector housing. While 15 percent of the private residences completed in 2012 consist of flats smaller than 40 square meters, this value increased to 27 percent in 2016 (Figure 47). Some of these are flats with a salable area of less than 20 square meters and they are often referred to as "nano-flats" by the media.<sup>109</sup>



**Figure 48:** Completions of Flats with Saleable Area Less Than 40 M2 2012–2016  
(Source: M.H.M. Lau, X. Wei, 2018)

This dramatic shrinkage of flats is also observed in state-provided social housing. According to a report published by the Transport and Housing Bureau, as of the end of March 2020, only 16.7 percent of the public rental flats are larger than 40 square meters (Figure 48). On the other hand, when examining the Home Ownership Scheme flats subsidized by the state, it is observed that the areas are larger than the rental apartments. This situation undoubtedly depends on many factors. A purchased house can be used by the same household for a longer period compared to rented apartments, which generally appeal to mobile users. In summary, when both the private real estate market and state-supported social housing are examined, it is observed that the size of flats in Hong Kong is significantly small and continues to shrink. So, what are the conditions that cause this shrinkage and shape the housing market? Geographical constraints, economic inequalities,

demographic changes, new living trends and habits, and most importantly, government policies that separate Hong Kong from other dense and global island countries... When all these parameters come together, the idea of micro-living is getting stronger and stronger in the Hong Kong real estate market.

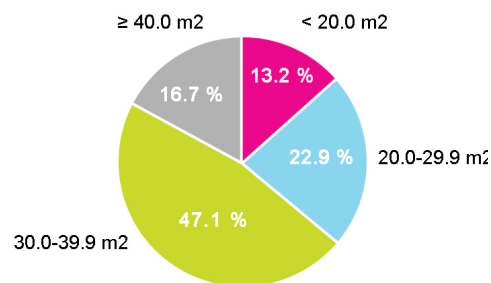
**110.** Task Force on Land Supply. (2018, April). Land for Hong Kong: Our Home, Our Say! How to Tackle Land Shortage. Available at: <https://www.legco.gov.hk/yr17-18/english/panels/dev/papers/dev20180529-booklet201804-e.pdf>

**111.** "Hong Kong Population Projections 2017-2066," Census and Static Department- (Census And Static Department, September 8, 2017), [https://www.censtatd.gov.hk/media\\_workers\\_corner/pc\\_rm/hkpp2017\\_2066/index.jsp](https://www.censtatd.gov.hk/media_workers_corner/pc_rm/hkpp2017_2066/index.jsp).

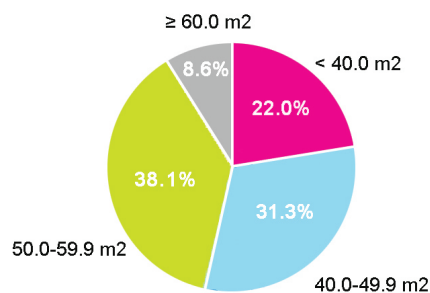
## Geography as a critical shaper of housing market

Hong Kong has a unique natural landscape with its untouched forested slopes, ocean-spreading islands, valleys, rivers, and many more... You may encounter unexpected green hillside views among the concrete buildings rising into the clouds in the sky. The geographic data of Hong Kong, such as its mountainous topography and limited flat area, have a fatalistic effect on shaping the housing market. (Figure 49) Only 24.3% of the total land area is determined as a buildable area, while the remaining 75.7% consists of areas that are not suitable for development and construction activities such as grassland, woodland, agricultural land, shrubland, country parks, wetland, reservoirs.<sup>110</sup> As a result of the lack of suitable land for horizontal expansion, skyscrapers rising towards the sky between steep mountains and slopes covered the city's skyline. In a sense, urban life is experienced vertically. This vertical living can be observed in every moment of daily life, from the city panorama with buildings rising above the cramped streets to the bunk beds covering bedrooms and the storage areas rising on the wall in the houses, from the livings in cages or cubicles stacked on top of each other in an ordinary apartment to the hyper-dense burial places consisting of vertical graves carved into the mountainsides due to lack of space.

On the other hand, the number of people living in this limited urban area has reached serious levels. Hong Kong has the world's fourth highest population density with an average of 6,781 people per sq kilometer. According to a report by the Census and Statistics Department, population density and households are projected to increase by 2043 and reach their peak. Afterwards, the population density will begin to decrease, but the number of households will continue to increase with the decreasing average household size.<sup>111</sup> The government's zoning strategy, in which only 3.7 percent



Public Rental Housing



Home Ownership Scheme

**Figure 49:** Stock of Public Rental Housing and Home Ownership Scheme Flats In 2020 By Flat Size (Source: Transport and Housing Bureau)



112. Yip, NM and Forrest, R (2014) Choice or constraint? Exploring solo-living for young households in Hong Kong. Urban Research Group—City U on Cities Working Paper Series, Working Paper 1, <http://www.cityu.edu.hk/ityuoncity/ploa/il/rigina/05520140620144948.pdf>

of the land is zoned as a residential area, combined with increasing population density has been the most critical determinant of the emergence of shocking cramped living spaces in Hong Kong. Additionally, land scarcity has greatly increased land values, and the inevitable end of putting a dense population in a limited and precious residential area has made Hong Kong the world's most expensive property market with incredibly small living spaces.



Figure 50: Mountainous Topography of Hong Kong. Photo by Finbarr Fallon

## Market dynamics and government policies

The story of the birth and spread of micro-living in big cities mostly begins with the narrative of the increasing number of one-person households and the growing interest in single living. But in Hong Kong the situation is a little different. As the craze of solo living continues to spread in the densely populated global cities in the world, this lifestyle is also increasing among young adults in Hong Kong, but it is significantly less common than in other global cities. Quite many young adults live with their parents until they form their own family. The intergenerational household is a cultural norm that represents respect for family and good fortune in many Asian cultures.<sup>112</sup> In addition to cultural factors, some economic factors play a critical role. In Hong Kong, where housing has become a problem for everyone, economic uncertainties and inadequacies cause young adults to move away from the idea of living alone. Very few young people can afford high housing prices to

live independently in Hong Kong. This situation has increased the dependence of young people on their families. According to City University's Urban Research Group, 76 per cent of Hongkongers aged 18-35 are still living with their parents.<sup>113</sup> Affordability problems have reached such a serious level that there are some couples living with one of their parents after marriage due to high property prices, and even some couples who cannot fit in these houses due to their small size and had to live separately from each other (Figure 50).<sup>114</sup> According to a report by the Census and Statistics Department of the government, in 2016, 13.2% of the married youths aged 25 to 34 cohabit with their parents together with their spouse and/or children.<sup>115</sup>

**113.** Jing Li, "'I Am Not Leaving Home': Post-80s' Housing Attitudes and Aspirations in Hong Kong," SSRN, August 5, 2014, [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2347914](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2347914).

**114.** Chermaine Lee and Megumi Lim, "The Married Couples in Hong Kong Who Live Apart," BBC, September 16, 2019, <https://www.bbc.com/worklife/article/20190903-the-married-couples-in-hong-kong-who-live-apar>.

**115.** "2016 Population by Census, Thematic Report: Youths (2016)," 2016 Population By-census (Census and Statistics Department, Hong Kong Special Administrative Region, February 12, 2016), [https://www.byccensus2016.gov.hk/data/16BC\\_Youth\\_report\\_2018.02.12.pdf](https://www.byccensus2016.gov.hk/data/16BC_Youth_report_2018.02.12.pdf).

**116.** Rental Indices for Hong Kong Property Market," Rating and Valuation Department- (The Government of the Hong Kong Special Administrative Region), accessed April 12, 2021, [https://www.rvd.gov.hk/en/property\\_market\\_statistics/index.html](https://www.rvd.gov.hk/en/property_market_statistics/index.html).

**117.** Mandy H.M. Lau and Xueji Wei, "Housing Size and Housing Market Dynamics: The Case of Micro-Flats in Hong Kong," Land Use Policy 78 (2018): pp. 278-286, <https://doi.org/10.1016/j.landusepol.2018.06.039>.



**Figure 51:** An Example of a Couple Who Had to Live Apart: Ma Hoi-Shing (69), Lives Most of The Year Separated from His Wife Who Cannot Live in This 5.5 Sqm Flat Due to Health Problems

According to a report by the Rating and Valuation Department, from 2010 to 2020, the price index of private domestic flats increased from 98 to 185.5 and these figures show that rental prices are soaring significantly.<sup>116</sup> As a solution to affordability problems, the supply of micro-flats was increased with the support of the initiatives of the government and private institutions. In this context, Hong Kong differs sharply from other global cities in terms of the government's dominant role in spreading micro-living. The adoption of mortgage-tightening measures, one of the changes in government policies, has increased the demand for small apartment buildings. Citizens who do not have enough cash have turned to smaller flats as they cannot get credit for higher-priced apartments due to the lowering of the Loan-to-Value ratio (LTV).<sup>117</sup> In fact, although the change in this policy seems to indirectly affect the demand for micro-flats, especially considering the young population who have just gained their economic freedom and want to own a property,

**118.** Yujing Liu, “Hong Kong’s Tiny Flats Are 9 per Cent Pricier in Square Footage,” South China Morning Post, July 20, 2018, <https://www.scmp.com/business/article/2108665/hong-kongs-tiny-flats-9pc-pricier-larger-homes-sq-ft>.

**119.** The Government of The Hong Kong Special Administrative Region, Press Releases. Available at: <https://www.info.gov.hk/gia/general/201806/20/P2018062000367.htm>

**120.** Development Bureau, The Government of The Hong Kong Special Administrative Region. “SDEV speaks to media on quarterly land sale programme for January to March 2017” Available at: [https://www.devb.gov.hk/en/sdev/speeches\\_and\\_presentations/index\\_id\\_9358.html?print=1](https://www.devb.gov.hk/en/sdev/speeches_and_presentations/index_id_9358.html?print=1) (Accessed in: 04.02.2021)

this change has caused most citizens to demand these flats. As the demand for small residences increases, naturally, developers prefer to build smaller flats that are easier to market rather than medium and large flats. Although smaller flats are more preferred because they are more affordable, it should be emphasized that the goal of the developers is to make money. Considering the price per square meter of micro-flats, it is worth noting that micro-flats are more expensive than most mid-size flats.<sup>118</sup> In 2018 June, a member of the Hong Kong Special Administration Legislative Council addressed a question about whether the government will take any measures for residential flats that are getting smaller and smaller every day. In response, the President drew attention to the land shortage and stated that their priority is housing production with the following sentences:

“We need to strike a reasonable balance between housing production and average living floor area per person, as both the increase in housing production to address needs for accommodation and the increase in average living floor area per person to improve living standard would require additional land. In view of the imbalance in supply and demand for land and housing and given the fact that property prices are soaring continuously, our current priority is accorded to increasing housing production to meet the basic accommodation needs of the people. Besides, as a pluralist society, there are diverse aspirations in respect of flat size. In the longer run, we consider that when the land shortage situation is alleviated, the society will be in a better position to explore whether a standard on average living floor area per person should be set.”<sup>119</sup>

A similar question was asked to the Development Minister, Mr. Paul Chan. And the Minister stated that, there is a period of several years between the sale of the land and its transformation into a residential unit, and the market can change very rapidly in this past period. So, they want to give the market flexibility, and, in this context, they do not find it appropriate to impose minimum area restrictions.<sup>120</sup> In addition to these statements, considering the size of the rental flats subsidized by the government, it is not surprising that most of the newly built private flats are smaller than 40 square meters. It can be said that the policies pursued by the government have gradually legitimized this downsizing and encouraged private companies to build smaller flats.

On the other hand, some changes in the building regulations have also shaped the real estate market. According to a report by investigative news agency FactWire, the number of nano apartments has increased considerably with the loosening of the lighting and ventilation regulations of open plan kitchens. According to the former regulation, the kitchen had to be separated from other places by walls and doors that would be able to resist fire for 1 hour. However, with the new regulations in 2014, the fire safety requirements have been alleviated and the restriction of separating the kitchen from other rooms by walls has been abolished. This caused a boom in hotel room-like flats with open kitchens.<sup>121</sup> According to the data of the Transport and Housing Bureau, only 222 nano-flats were given the consent to commence work in 2013. Then, in 2014, this number increased to 1385 and reached 2312 in 2019. In this context, Factwire claims that the relaxation of the regulations in 2013 and the substantial increase in the number of nano-flats in 2014 are not coincidental issues. With the relaxation of fire safety requirements, the residential market took advantage of loosening regulations and began developing smaller apartments with open kitchens, lowering the total cost, and maximizing the number of units produced.

With the absence of restrictions on the minimum size of flats, and a lack of a control mechanism of the living conditions, the private sector has received a strong message from the government that it may continue to build smaller flats. In the face of this situation, citizens who want to pay less rent are forced to live in apartments that are getting smaller day by day. Another important factor that should be emphasized is all lands except St. John's cathedral belong to the Hong Kong government. Only 3.7 percent of the buildable area is zoned as a residential area, and these areas are leased to private developers by tender.<sup>122</sup> This situation has increased competition in the market and lands are rented at excessive prices. Thus, medium-sized developers became unable to compete in the market, large companies became stronger and richer. In this context, considering that land leases and sales are a very significant source of income for the Hong Kong government, some suspicions may arise that the interests of the government and the private sector may overlap.

**121.** FactWire. (2020) "Nano flats soared owing to loosening of open kitchen requirements in 2012. Available at: [https://www.factwire.org/investigation/nano-flats-soared-owing-to-loosening-of-open-kitchen-requirements-in-2012/?lang=en&\\_\\_cf\\_chl\\_jschl\\_tk\\_\\_=4a9b8dea49c0e148edf2244a2c19b5b8493449a5-1613301778-0-AbCSguEAlWJf-v\\_4hfxV1S6J3SYvZUteCOfCG61EgzoN0BnLEVKaMnzxSceL](https://www.factwire.org/investigation/nano-flats-soared-owing-to-loosening-of-open-kitchen-requirements-in-2012/?lang=en&__cf_chl_jschl_tk__=4a9b8dea49c0e148edf2244a2c19b5b8493449a5-1613301778-0-AbCSguEAlWJf-v_4hfxV1S6J3SYvZUteCOfCG61EgzoN0BnLEVKaMnzxSceL). (Accessed in: 2 February 2021.)

**122.** "Public Engagement Booklet- Task Force on Land Supply," The Government of the Hong Kong Special Administrative Region (Land for Hong Kong, April 2018), [https://www.devb.gov.hk/filemanager/en/content\\_1051/Land\\_Supply\\_En\\_Booklet.pdf](https://www.devb.gov.hk/filemanager/en/content_1051/Land_Supply_En_Booklet.pdf).



## Informal micro-lvings for survival

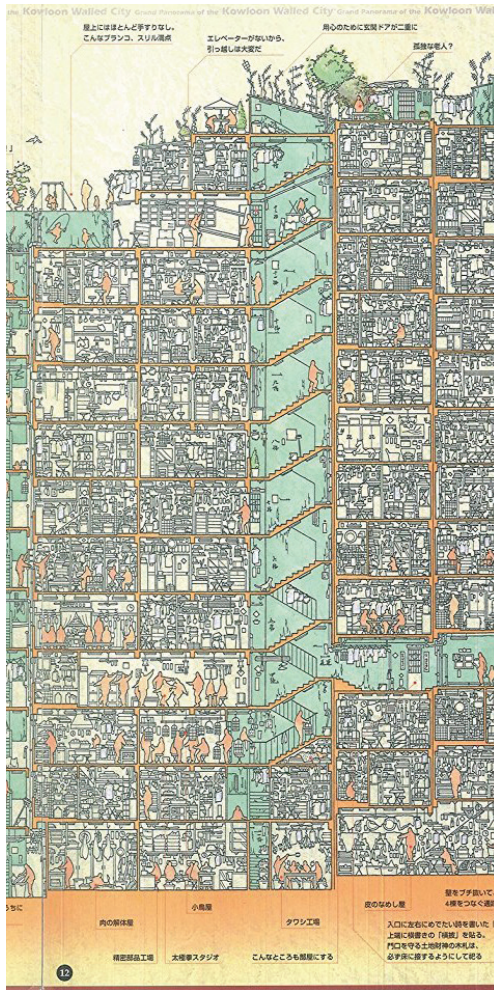


Figure 52: An Illustrated Cross Section Of Hong Kong's Infamous Kowloon Walled City

Hong Kong has been struggling with density for quite a long time. The best-known example is the Kowloon Walled City, which was the most densely populated place in human history before its demolition in 1994. In 1898, Hong Kong was leased by China to the United Kingdom for 99 years. However, as a result of disagreements between the two countries, Britain took a hands-off policy for Kowloon and then the area became an enclave known as the Kowloon Walled City, ruled by local triads.<sup>123</sup> Although Kowloon Walled City is a bizarre and anomalous example as it is an ungoverned, self-generated and unplanned area that does not utilize the municipality for basic services, it reveals the significant tendency of the city to downsize. The independence of the region was so severe that the city met all needs in itself and was closed to any kind of intervention. In the city where even the laws did not function properly, doctors and dentists who migrated from China to Hong Kong and wanted to avoid expensive licenses required by the colonial government were working here without a license. There was a self-sufficient, cramped, and extraordinary life with shops, markets, butchers, restaurants, workshops, and even kindergartens located on the ground floor. (Figure 51) The enclave measuring about 200 x 100 meters housed 40,000 people with 350 tightly packed buildings. Most people shared flats of 23 square meters or less with several other families, and the average area per person was 3.7 square meters. Each room was about 3.7 square meters and was rented for 35 HK\$ per week.<sup>124</sup> People lived cramped in tiny rooms, and piles of items that could not fit in the rooms were spilled out of the balconies and corridors. People ruled all the buildings, and each space was filled with different functions. The corridors have been storage areas for some, a sleeping place, or a socializing area for others. Terraces were used for exercise areas, playgrounds, recreation areas, pigeon races and many other purposes. In summary, there was an extraordinary life in these cramped spaces that developed spontaneously without any architectural intervention.

It has been 27 years since the destruction of Kowloon Walled City, but density is still a fact of daily life in Hong Kong. Behind the glowing Hong Kong skyline with neon lights, bustling streets, and skyscrapers, there are congested and miserable living spaces that reveal the seriousness of the housing problem and bad living conditions in Hong Kong. Land scarcity and some government

123. Greg Girard and Ian Lambot, *City of Darkness: Life in Kowloon Walled City* (Somerset, UK: Watermark, 2014).

124. "Remembering Kowloon Walled City," *South China Morning Post* (SCMP Graphics, July 18, 2018), <https://www.scmp.com/infographics/article/1193675/remembering-kowloon-walled-city>.

policies caused the housing and rental prices to skyrocket. So much so that as of 2018, the prices have reached 19.7 times higher than median household income.<sup>125</sup> To better perceive the level of this dire situation, imagine that you have been working continuously for 20 years and spend a minimum amount of money during this period. And that at the end of 20 years, you can “maybe” buy a house. As a solution to this problem, the government is increasing the number of public units, but it is not enough to accommodate Hong Kong’s lower class. In order to survive in the world’s least affordable housing market with increasing inequality, Hong Kong residents are forced to look for illegal forms of housing. The most common are the subdivided flats.

Subdivided flats are usually created by the owners of traditional single-family apartments by dividing them into smaller individual dwellings with a floor area of 10-15 square meters.<sup>126</sup> (Figure 52) While 15 square meters can be the size of a kitchen, bedroom or living room in another city in the world, in Hong Kong this measure represents the size of an entire space they call home (Figure 53). The average living space per person in these units was 5.3 square meters.<sup>127</sup>



It might seem extreme, but according to the 2016 Population By-census, Hong Kong has approximately 92,700 subdivided units and 209,700 people live in these units with incredibly small and extremely inhumane conditions.<sup>128</sup> Unrelated singles and even families live together in these flats, each of which can be rented separately.<sup>129</sup> According to a survey by Policy 21 Limited published in 2013, only 54.3 percent of these flats were self-contained

125. Inside Hong Kong’s Cage Homes, YouTube (Vox, 2018), <https://www.youtube.com/watch?v=hLrFyGZ9NU>.

126. Joanna Chiu, “How Subdivision of Flats Yields Higher Profits,” South China Morning Post, August 19, 2012, <https://www.scmp.com/business/money/money-news/article/1018096/how-subdivision-flats-yields-higher-profits>.

127. Census and Statistics Department, Hong Kong Special Administrative Region. 2016.

128. World’s Busiest Cities, Series 1, Hong Kong, BBC Two (BBC, 2019), <https://www.bbc.co.uk/programmes/b093q92w>.

129. “Information Note: Subdivided Flats in Hong Kong,” The Legislative Council of the Hong Kong Special Administration Region (Legislative Council Secretariat, May 28, 2013).

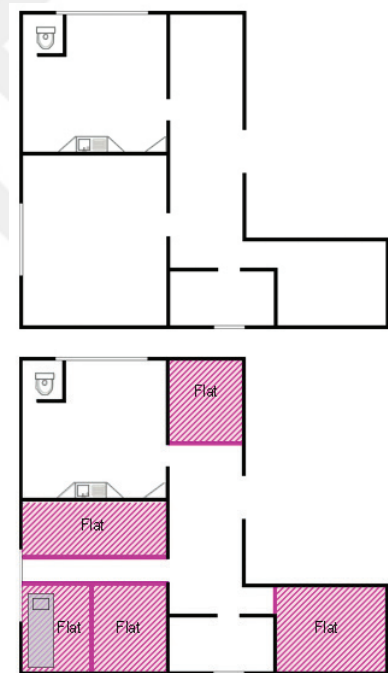


Figure 53: Transforming an Ordinary Apartment into Subdivided Flat (Main Drawing by Vox)

Figure 54: Typical kitchen-toilet complex of a Subdivided flat (Main Photo: SCMP Pictures)



130. "Survey on Subdivided Units in Hong Kong," The Legislative Council of the Hong Kong Special Administration Region (Policy 21 Limited, 2013), [https://www.legco.gov.hk/yr12-13/english/panels/hg/hg\\_lths/papers/hg\\_lths0530cb1-1197-1-e.pdf](https://www.legco.gov.hk/yr12-13/english/panels/hg/hg_lths/papers/hg_lths0530cb1-1197-1-e.pdf).

131. "Frequently Asked Questions: Subdivision of a Flat (Subdivided Units)," Buildings Department, 2011, [https://www.bd.gov.hk/en/resources/faq/index\\_subdivision\\_of\\_a\\_flat\\_subdivided\\_units.html](https://www.bd.gov.hk/en/resources/faq/index_subdivision_of_a_flat_subdivided_units.html).

132. Dwan, Sawicki, Wong "Subdivided Housing Issues,".

133. "Survey on Subdivided Units in Hong Kong," The Legislative Council of the Hong Kong Special Administration Region (Policy 21 Limited, 2013)

134. Dwan, Sawicki, Wong "Subdivided Housing Issues,".

and had essential facilities such as a cooking area, toilet and water.<sup>130</sup> In order for this division action to be legal, property owners should consult building professionals on the feasibility and must comply with the Hong Kong Building Ordinance, which sets building design and construction standards for fire safety, structural safety, and drainage works.<sup>131</sup> However, in most subdivided flats, these building codes are neglected and the tenants' safety is put at risk by illegal renovations.<sup>132</sup> The striking thing is that; not everyone living here is very poor or unemployed. Some people whom we often encounter in our daily lives such as waiters, security guards, market workers, etc... are also living in these flats with unsanitary conditions. Even more shocking, surveys show that more than 20,000 children live in such subdivided units.<sup>133</sup> In this context, the housing problem in Hong Kong is quite different from other densely populated cities. Because, behind the glittering Hong Kong skyline, the housing problem has become a struggle for survival and has become "a problem for everyone".

For low-income households, the already poor living conditions are getting worse, and thus some Hong Kong-specific living practices for survival are emerging such as cage homes, coffin homes, and cubicle homes with extremely cramped, unventilated bed spaces that can be smaller than a standard parking lot. Cubicle homes, which are generally located close to the city center and have an old infrastructure, provide shelter for low-income households of Hong Kong by dividing apartments into less than 2 square meters of makeshift cubicles with the help of large slabs.<sup>134</sup> (Figure 55) These flats are also known as "coffin cubicles" due to their extremely tiny dimensions. The cramped type of subdivided living spaces, which are literally stacked on top of each other like a coffin, are so small that it is not possible to stand in them. A person can only fit inside in a lying position. There is no suitable space for any belongings except the mattress on the floor, the television or radio hanging on the opposite wall, a fan mostly mounted on the sides, a few clothes and personal items stuffed into plastic bags hanging on the walls.

Living conditions in "cage houses" are even worse (Figure 56). Hong Kong's poorest residents call "home" the metal cages, which measure about 1.5 square meters, built with wires, and placed in an ordinary apartment. Just like a rabbit cage, cages are placed side by side and on top of each other, allowing more efficient use of the space. The cages are so small and cramped that for some, it is impossible to stretch the legs and sleep in a normal position on a mattress placed on the floor of the cage. There is no space to store

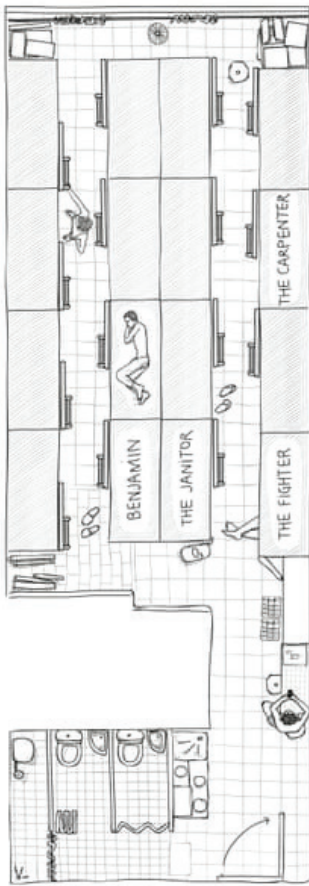


Figure 55: A Floor Plan of the 'Coffin' Home. Illustration By Rachel Suming

personal items other than a few pieces of clothing, towels, pots, cleaning materials hanging on the metal cage wires. Residents lock their cages and go out, just as if they lock the door of the house. A substantial number of Hong Kong residents are condemned to shelter in these cages with poor hygiene, ventilation, and infrastructure. In 2007, there were approximately 53,200 people living in cage homes.<sup>135</sup>

134. Number of Persons Living in Cage Housing,” Social Indicators of Hong Kong, accessed April 15, 2021, <https://socialindicators.org.hk/en/indicators/housing/8.11>.



Figure 56: Life Inside Coffin Home



Figure 57: Life Inside Cage Home



# Conclusions and discussion

Micro-flat, nano-capsule, compact-unit, and many derivations are emerging day by day. In essence, each of them aims to shrink and occupy less space on the planet. And the micro-living trend, which continues to spread all over the world, is powered by many different fuels. While the idea of living in a smaller living space instead of living in a normal-sized flat may be a conscious choice for some, some are indirectly dragged into this kind of living due to the conditions of the context in which they live, and for some, it may even be a necessity in order to survive.

There are many parameters that trigger the emergence of the idea of micro-living and become a trend by spreading all over the world. The number of people living in cities is gradually increasing, and cities are beginning to fill their capacity. This situation causes a serious land shortage. Especially in big cities around the world, the lack of space has caused property prices to rise to unattainable levels. Despite this increase in prices, city dwellers who insist on living in the city centers for many reasons are trying to overcome this problematic situation by restricting their personal living spaces. On the other hand, with the economic uncertainties of the current period, the concept of the nuclear family began to disappear gradually, and there was a serious decrease in the rate of marriages. Social changes, such as the blurring of the boundaries between gender roles and women gaining their own economic freedom, have deeply shaken the traditional family structure, and the interest in living alone is increasing day by day. In parallel with the rising interest in solo living, new daily habits and priorities are also emerging. Despite this transformation, the current housing stock and the housing supply cannot meet the demand. Now, it has become almost a dream to buy an affordable and appropriate house in city centers. This situation is more challenging for the young generation, who are more deeply exposed to the effects of economic uncertainty. Many young professionals are stuck with options such as living in shared apartments with unrelated people in the city center, or living in their family's home, or living alone in a house away from the city center. And many prefer to live in a smaller area in city centers due to their commute time to work or school, and easy access to all services offered by the city. In this context, the idea of micro-living has become an alternative for many people due to its attractive



location close to city centers, requiring reasonable responsibility compared to a normal-sized apartment, and often being organized according to the habits of solo living. The adaptability potential with its small-scale allows it to easily adapt to the new dynamics of today's unclear world. And now this lifestyle has become a trend and continues to spread around the world. Thus, governments are striving to alleviate zoning regulations that set minimum living space standards to be able to build micro-dwellings in densely populated cities such as New York, London, and San Francisco.

On the other hand, micro-living is strongly criticized with the claims that it is not a permanent solution to the problems of the market, it is just a compensator that only postpones the problems. And since it is mostly more expensive than a normal sized flat compared to the price per square meter, it is stated by some people as a new method of exploitation that feeds neoliberal policies. However, although these criticisms are mostly recognizable, they are also a bit brutal because they are quite generalizing. Housing is a multidimensional issue in itself and it is not fair to consider this lifestyle as a magic wand to solve every problem. Additionally, micro-living is not only a dramatic ending strained by lack of resources. It is also an attitude of mind and matter of living. There are several other factors besides economic reasons such as cultural backgrounds and country-specific characteristics. In order to discuss the question of whether micro-living is a choice or a necessity, the context and conditions in Japan and Hong Kong, where micro-living has long dominated, have been studied in depth. In this context, research was conducted on the conditions that triggered the idea of micro-living in Hong Kong city with its small, inhumane dwellings, and in Japan known for its compact living units dealing with extremely small and oddly shaped plots in a densely built-up residential area. It is important to trace these conditions because each of them caused the idea of micro-living to become an ordinary part of daily life.

The idea of micro-living is a fairly common reality of everyday life in Japan. There are many conditions that trigger this situation. One of the main reasons is that Japan is an island country and has a very limited flat and buildable area due to its rugged topography. Considering the fact that it has a very crowded population, it has been inevitable to follow a policy of downsizing in order to fit in limited areas. But it is not limited to this. Earthquakes, typhoons, wars, economic crises, disasters, atomic bombs, and the uncertainties that emerged after disasters, all of these have taught the

Japanese to start again from scratch after each destruction. In a way, they have accepted to be “temporary” in the world. The most prominent example of this is the micro-houses called “Kyosho Jutaku”, which emerged with the explosion of the Bubble Economy in 1992 and the dramatic shrinkage in land size following the increasing population. These houses are also built on the idea of “impermanence”, and have no resale value. Only the land on which these micro houses are located has a meaningful resale value. At the same time, these houses have a certain life span. They are demolished and rebuilt after completing their period. This culture also shows the Japanese passion for new things. In this way, Japanese architecture provides an experimental space where spatial organizations are tested in accordance with the dynamics of the current period and the boundaries of the materials are forced. Thus, a dynamic and up-to-date housing stock is formed that responds to today’s needs. In addition, the desire to live alone and the perception of loneliness as an acquired freedom, contributed significantly to the root of micro-living in Japan. So much so that it is not surprising that a person walking through the crowded streets of Japan encounters single-person spaces such as one-person cinemas, restaurants, karaoke rooms, capsule hotels.

There are many similarities between the situation in The Hong Kong Special Administrative Region and Japan. Its geographical constraints such as being an island country and having a rugged topography have been very effective in shaping the housing market. With its limited development area, Hong Kong is one of the most densely populated places in the world. So, it was inevitable that the living areas here would become incredibly small. But besides all the factors, unlike Japan or anywhere else in the world, there is a different factor that causes this downsizing: government policies. In Hong Kong, all land is owned by the state, and these lands are rented to private companies by auction for certain years. The auction method increases competition over the already restricted residential areas, which causes these areas to be rented at exorbitant prices. Houses built on these plots are inevitably rented at very high prices. In addition, given the fact that Hong Kong ranks 8th in the world in income inequality, having a house in Hong Kong has become a dream for the majority. This situation led the real estate market to an impasse, and the flats continued to get smaller and smaller with increasing prices. This downsizing policy and daily life habits have mutually affected each other. And the small size of living spaces in Hong Kong has been very effective in the adoption of an externalized lifestyle. On the other hand, the government is trying to

alleviate this serious housing problem with public housing, but this is not enough. These dwellings built by the state are also very small compared to the residences in other parts of the world. While this is the case, the poor are getting poorer, and the rich are getting richer with each passing day. And thus, unimaginable gaps arise between living conditions. Today, a very serious majority in Hong Kong are trying to survive in conditions contrary to human dignity. They live in spaces such as subdivided flats, wooden boxes with a floor area of less than 2 square meters called “coffin homes”, metal cages measuring 180 x 60 cm called “cage homes”, and many more. Now, there are ultra-luxurious skyscrapers and residences on one side, and cages stacked on top of each other in an ordinary apartment on the other side. When all these images are put side by side, the difference between the size of the downsizing and living conditions in Hong Kong is breathtaking. Sustaining micro-living here offers a reasonable life for some, while for others it is the only remedy for survival. But it is certain that maintaining life on a very small footprint is an ordinary fact of life in Hong Kong.

As a result of all this research, it has been observed that housing is a multidimensional issue and is affected by the dynamics of the current period, cultural backgrounds, personal preferences, economic context, political policies, beliefs, in short, all factors that affect the daily life of the human being. So, there is no one and absolute answer to the main question. So much so that micro-living has been a deliberate way of life for some, an ordinary part of daily life for some, an option among deadlocks for some, and the only solution for others to survive. In this context, while there is no single and definitive answer to this multidimensional issue, all research has deciphered the conditions that caused micro-living to emerge and become an increasingly popular trend. On the other hand, it raised new questions by questioning the similarities between the conditions between the past and the present. Just as the term “Homo Movens”, which Kurokawa used in his book published in 1969, to describe individuals who are in transition and lead an urban nomadic lifestyle, is still valid today and even constitutes the largest target audience of micro dwellings.

It is observed that the micro-living trend is not limited to Japan and Hong Kong. The trend continues to spread beyond these geographies. The idea of downsizing is an analytical and ordinary solution in a scenario where housing prices are rising to unaffordable levels, time spent at home is decreasing and the idea of externalized living is becoming more and more

common. But beyond reducing the total space, can basic architectural issues such as the dimensions of architectural elements, the dimensions of fixed and movable furniture be reconsidered over the duration and frequency of use, and the dimensions of the human body? Would it be a good start to create a new measurement system and standards, just like the Japanese, who use a human body-based measurement system when describing a place?

In this dissertation, Japan and Hong Kong have been accepted as the pioneers of micro-living, due to the existence of this way of life here for quite a long time. In this context, when we go back in time by deepening the examples of Japan and Hong Kong, it is observed that the need for a rapid reaction after radical changes such as heavy earthquakes, natural disasters, world wars, atomic bombs, political dependencies, are quite related with the emergence of micro-living. Just like the example of Japan, where micro-living units have increased rapidly after World War II and the explosion of the Bubble Economy, or like the Hong Kong special administrative region, which has difficulty in establishing its own identity between Britain and the Chinese government, with its unstable political structure result in incredibly small living units with inhuman living conditions. Crises are changing, and responses to crises are transforming along with the dynamics of the present time. Just like small-scale living units and compact capsules attached to megastructures, which emerged after the most radical crises of the 60s. These utopias are evolving today and pointed out a solution to the lack of affordable and appropriate housing in dense urban centers. So, crises and the relationship of micro-living with urgency have raised a question for the crisis we are in today. In the middle of the writing and research process of this dissertation, the whole world has faced an unexpected pandemic. The Covid-19 outbreak has brought many uncertainties with it, and long-standing assumptions have lost their validity. With the global crisis, daily lives have undergone a radical change and people have become more dependent on houses than ever before. In this context, parallel to the research question in this dissertation, a new question has arisen: Could the idea of micro-living respond to the crisis we are in today, with its modest scale, reasonable construction effort, relatively rapid applicability, and adaptability?



## References

Allana Akhtar and Shana Lebowitz, "14 Things Millennials Do Completely Differently from Their Parents," *Business Insider Australia*, March 12, 2018, <https://www.businessinsider.com.au/millennials-habits-different-from-baby-boomers-2018-3?r=US&IR=T>.

Anson, April. "The World Is My Backyard': Romanticization, Thoreauvian Rhetoric, and Constructive Confrontation in the Tiny House Movement." *From Sustainable to Resilient Cities: Global Concerns and Urban Efforts*, 2014, 289–313. <https://doi.org/10.1108/s1047-004220140000014013>.

Bentley, Daniel, and Alex McCallum. "Rise and Fall: The Shift in Household Growth Rates since the 1990s." *Civitas*, February 2019.

"Better Money Habits® 2020 Millennial Report." Bank of America. Accessed November 13, 2020. <https://about.bankofamerica.com/en/making-an-impact/bmh-millennial-report>.

Briganti, Chiara, and Kathy Mezei, eds. 2019. *Living with Strangers: Bedsits and Boarding Houses in Modern English Life, Literature and Film*. London, England: Bloomsbury Academic.



Brown, Tim. "The Challenges and Controversies of Co-Living." Trowers & Hamlins, 2019. <https://www.trowers.com/insights/2019/november/the-challenges-and-controversies-of-co-living>.

Chiu, Joanna. "How Subdivision of Flats Yields Higher Profits." South China Morning Post, August 19, 2012. <https://www.scmp.com/business/money/money-news/article/1018096/how-subdivision-flats-yields-higher-profits>.

"Commuting and Personal Well-Being, 2014," ONS (Office for National Statistics , 2014), <https://webarchive.nationalarchives.gov.uk/20160105231823/http://www.ons.gov.uk/ons/rel/wellbeing/measuring-national-well-being/commuting-and-personal-well-being--2014/art-commuting-and-personal-well-being.html>.

Cook, Peter. Archigram. New York, NY: Princeton Architectural Press, n.d.

Development Bureau, The Government of The Hong Kong Special Administrative Region. "SDEV speaks to media on quarterly land sale programme for January to March 2017" Available at: [https://www.devb.gov.hk/en/sdev/speeches\\_and\\_presentations/index\\_id\\_9358.html?print=1](https://www.devb.gov.hk/en/sdev/speeches_and_presentations/index_id_9358.html?print=1) (Accessed in: 04.02.2021)

“Frequently Asked Questions: Subdivision of a Flat (Subdivided Units).” Buildings Department, 2011. [https://www.bd.gov.hk/en/resources/faq/index\\_subdivision\\_of\\_a\\_flat\\_subdivided\\_units.html](https://www.bd.gov.hk/en/resources/faq/index_subdivision_of_a_flat_subdivided_units.html).

Daigo. “Traditions: Shikinen Sengu.” Japan Woodcraft Association, February 13, 2020. <https://japanwoodcraftassociation.com/2020/02/13/traditions-shikinen-sengu/>.

Deaver, Lynda. “Singing Solo: Trying Hitokara at 1Kara.” GaijinPot Blog, October 16, 2014. <https://blog.gaijinpot.com/solo-karaoke/>.

Dwan, Daniel Joseph, J. Wong and M. Sawicki. “Subdivided Housing Issues of Hong Kong: Causes and Solutions.” (2013).

FactWire.(2020) “Nano flats soared owing to loosening of open kitchen requirements in 2012. Available at: [https://www.factwire.org/investigation/nano-flats-soared-owing-to-loosening-of-open-kitchen-requirements-in-2012/?lang=en&\\_\\_cf\\_chl\\_jschl\\_tk\\_\\_=4a9b8dea49c0e148edf2244a2c19b5b8493449a5-1613301778-0-AbCSguEAlWJf-v\\_4hfxV1S6J3SYvZUteCOfCG61EgzoNOBnLEVKaMnzxSceL](https://www.factwire.org/investigation/nano-flats-soared-owing-to-loosening-of-open-kitchen-requirements-in-2012/?lang=en&__cf_chl_jschl_tk__=4a9b8dea49c0e148edf2244a2c19b5b8493449a5-1613301778-0-AbCSguEAlWJf-v_4hfxV1S6J3SYvZUteCOfCG61EgzoNOBnLEVKaMnzxSceL). (Accessed in: 2 February 2021.)

Flynn, Finbarr. “Yen rises further, Japan faces next lost decade.” Bloomberg, 17 June 2016. <https://www.bloomberg.co.jp/news/articles/2016-06-17/O8WH6G6TTDS401>.

Fuller, Richard Buckminster. *Your Private Sky*. R. Buckminster Fuller: The Art of Design Science. Edited by Joachim Krausse and Claude Lichtenstein. Baden: Müller, 1999.

“Gini Coefficient By Country 2021 Gini Inde.” World Population Review. Accessed August 10, 2020. <https://worldpopulationreview.com/country-rankings/gini-coefficient-by-country>.

Girard, Greg, and Ian Lambot. *City of Darkness: Life in Kowloon Walled City*. Somerset, UK: Watermark, 2014.

“Global Generations | A Global Study on Work-Life Challenges across Generations.” EY, 2015. <https://www.coursehero.com/file/52620735/EY-global-generations-a-global-study-on-work-life-challenges-across-generationspdf/>.

Günaydın, Enis. “Japonya’yı Hızla Saran Yalnız Yaşama Sanatı: Ohitorisama.” Euronews, November 14, 2018. <https://tr.euronews.com/2018/11/14/japonya-y-h-zla-saran-yaln-z-yasama-sanat-ohitorisama>.

Harris, Ella, and Mel Nowicki. “GET SMALLER? Emerging Geographies of Micro-Living.” *Area* 52, no. 3 (2020): 591–99. <https://doi.org/10.1111/area.12625>.

Harris, Johnny. *Inside Hong Kong’s Cage Homes*. YouTube. Vox, 2018. <https://www.youtube.com/watch?v=hLrFyjGZ9NU>.

Henrard, Valentine. "Income Inequality and Public Expenditure on Social Policy in Hong Kong." Civic Exchange, July 2011. <https://civic-exchange.org/report/income-inequality-and-public-expenditure-on-social-policy-in-hk/>.

Hildner, Claudia. *Small Houses: Contemporary Japanese Dwellings*. Basel: Birkhäuser, 2011.

Hoffman, Michael. "Why Marry, or Worry, When We Can Be Alone Together in Ohitorisama Japan?" *The Japan Times*, March 1, 2014. <https://www.japantimes.co.jp/news/2014/03/01/national/media-national/why-marry-or-worry-when-we-can-be-alone-together-in-ohitorisama-japan/>.

"Hong Kong," *Encyclopædia Britannica* (Encyclopædia Britannica, inc.), accessed January 11, 2021, <https://www.britannica.com/place/Hong-Kong>.

"Hong Kong: An Insider's Guide." *The Guardian*. Guardian News and Media. Accessed March 18, 2021. <https://www.theguardian.com/hongkonginsidersguide/story/0,,1627052,00.html>.

"Hong Kong Population Projections 2017-2066." *Census And Static Department- The Government of the Hong Kong Special Administrative Region*. Census And Static Department, September 8, 2017. [https://www.censtatd.gov.hk/media\\_workers\\_corner/pc\\_rm/hkpp2017\\_2066/index.jsp](https://www.censtatd.gov.hk/media_workers_corner/pc_rm/hkpp2017_2066/index.jsp).

“Household Composition Statistics.” Eurostat Statistics Explained, 2020. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Household\\_composition\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Household_composition_statistics).

“Housing in Figures - Transport and Housing Bureau,” Transport and Housing Bureau- the Government of the Hong Kong Special Administrative Region of the People’s Republic of Rhina (Census and Statistics Department, August 31, 2020), <https://www.thb.gov.hk/eng/psp/publications/housing/HIF2020.pdf>.

“INFORMATION NOTE: Subdivided Flats in Hong Kong,” The Legislative Council of the Hong Kong Special Administration Regio (Legislative Council Secretariat, May 28, 2013).

“Issues with Seniors in Japan.” Foreign Press Center Japan. Accessed August 18, 2020. [https://fpcj.jp/en/j\\_views-en/magazine\\_articles-en/p=47734/](https://fpcj.jp/en/j_views-en/magazine_articles-en/p=47734/).

Jaque, Andrés. “Sheltering The Rolling Society”. Volume 46: Shelter, (2015): 86-91.

James, Charles D. “The 1923 Tokyo Earthquake and Fire”. University of California, Berkeley. November 2005. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.372.3862&rep=rep1&type=pdf>.

Johnston, Eric. “Lessons from When the Bubble Burst.” The Japan Times, April 10, 2013. <https://www.japantimes.co.jp/news/2009/01/06/reference/lessons-from-when-the-bubble-burst/>.

Jozuka, Emiko, Jessie Yeung, and Jake Kwon. "Japan's Birth Rate Hits Another Record Low in 2019." CNN. Cable News Network, December 30, 2019. <https://edition.cnn.com/2019/12/25/asia/japan-birthrate-hnk-intl/index.html>.

Jozuka, Emiko, and Will Ripley. "When Your Home Is a Japanese Internet Cafe, but the Coronavirus Pandemic Forces You Out." CNN. Cable News Network, May 4, 2020. <https://edition.cnn.com/2020/05/03/asia/japan-coronavirus-internet-cafe-refugee-hnk-intl/index.html>.

Kamer, Foster. "Home, Bittersweet Home." Vox. Vox, October 14, 2020. <http://www.vox.com/the-highlight/21514367/coronavirus-covid-19-home-renovation-schooling-peloton>.

Kato, Akihiko. "The Japanese Family System: Change, Continuity, and Regionality over the Twentieth Century," 2013. <https://doi.org/10.4054/mpidr-wp-2013-004>.

Kichanova, Vera. "Size Doesn't Matter: Giving a Green Light to Micro-Homes." Adam Smith Institute. Adam Smith Institute, 2019. <https://www.adamsmith.org/research/size-doesnt-matter-giving-a-green-light-to-micro-homes>.



King, Ambrose Yeo-Chi, and Rance Pui-leung Lee. "High-Density Effects in Urban Areas: What Do We Know and What Should We Do?" Essay. In *Social Life and Development in Hong Kong*. Hong Kong: Chinese University Press, 1988.

Klasto, Cathryn. "Tokyo's Kyōshō Jūtaku: Nature through the Inside, Outside and the In-Between." *Interiority* 2, no. 2 (2019). <https://doi.org/10.7454/in.v2i2.63>.

Kuhns, Annemarie, and Michelle Saksena. "Food Purchase Decisions of Millennial Households Compared to Other Generations." United States Department of Agriculture, December 2017. <https://www.ers.usda.gov/webdocs/publications/86401/eib-186.pdf?v=43097>.

Kurokawa, Kisho. *Metabolism in Architecture*. Boulder: Westview Press, 1977.

Lam, Sharon. "Here's What Western Accounts of the Kowloon Walled City Don't Tell You." *ArchDaily*. December 02, 2016. [https://www.archdaily.com/800698/heres-what-western-accounts-of-the-kowloon-walled-city-dont-tell-you?ad\\_medium=widget&ad\\_name=recommendation](https://www.archdaily.com/800698/heres-what-western-accounts-of-the-kowloon-walled-city-dont-tell-you?ad_medium=widget&ad_name=recommendation).

Lau, Mandy H.M., and Xueji Wei. "Housing Size and Housing Market Dynamics: The Case of Micro-Flats in Hong Kong." *Land Use Policy* 78 (2018): 278–86. <https://doi.org/10.1016/j.landusepol.2018.06.039>.

“LCQ3: Areas of Private Residential Flats,” The Government of The Hong Kong Special Administrative Region, Press Releases., accessed February 3, 2021, <https://www.info.gov.hk/gia/general/201704/12/P2017041200289.htm>.

Lee, Chermaine, and Megumi Lim. “The Married Couples in Hong Kong Who Live Apart.” BBC, September 16, 2019. <https://www.bbc.com/worklife/article/20190903-the-married-couples-in-hong-kong-who-live-apar>.

Li, Jing. “‘I Am Not Leaving Home’: Post-80s’ Housing Attitudes and Aspirations in Hong Kong.” SSRN, August 5, 2014. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2347914](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2347914).

Liu, Yujing. “Hong Kong’s Tiny Flats Are 9 per Cent Pricier in Square Footage.” South China Morning Post, July 20, 2018. <https://www.scmp.com/business/article/2108665/hong-kongs-tiny-flats-9pc-pricier-larger-homes-sq-ft>.

Madden, David, and Peter Marcuse. *In Defense of Housing: The Politics of Crisis*. London: Verso, 2016.

“Mayor Bloomberg Announces Winner of Adapt NYC Competition To Develop Innovative Micro-Unit Apartment Housing Model.” The official website of the City of New York, January 22, 2013. <https://www1.nyc.gov/office-of-the-mayor/news/032-13/mayor-bloomberg-winner-em-adapt-nyc-em-competition-develop-innovative-micro-unit#/2>.

Marriage and Childbirth in Japan Today: The Fifteenth Japanese National Fertility Survey, 2015 (Results of Singles and Married Couples Survey). National Institute of Population and Social Security Research, March 2017.

Mccurry, Justin. "Tokyo Dreaming." The Guardian, September 28, 2007. <https://www.theguardian.com/world/2007/sep/28/japan.socialexclusion>.

"Micro Homes | Mayor's Question Time." Mayor Of London, March 2019. <https://www.london.gov.uk/questions/2019/6326>.

"Micro living defined," BPF (British Property Federation), accessed January 13, 2021, [https://bpf.org.uk/media/1076/compact\\_living\\_full\\_research\\_report](https://bpf.org.uk/media/1076/compact_living_full_research_report).

Miles, Paul. "Architects' Tiny Triumphs: the Small Buildings with a Big Impact." Financial Times, May 2, 2014. <https://www.ft.com/content/f28e2b6e-cec7-11e3-8e62-00144feabdc0>.

"Millennials: Fueling the Experience Economy." Eventbrite US Blog. Harris Group, 2014. <https://www.eventbrite.com/blog/academy/millennials-fueling-experience-economy/>.

"Millennials Infographic." Goldman Sachs. Accessed August 17, 2020. <https://www.goldmansachs.com/insights/archive/millennials/>.

“Ministry of internal affairs and communications, population and households.” Ministry of Internal Affairs and Communications, 2015, <http://www.stat.go.jp/english/data/kokusei/index.html>

MLIT. (2015). Chapter 5: Creating a Comfortable Living Space. White Paper on Land, Infrastructure, Transport and Tourism in Japan, 2015. Ministry of Land, Infrastructure, Transport and Tourism. Pp.169

National Institute of Population and Social Security Research. Marriage and Childbirth in Japan Today: The Fifteenth Japanese National Fertility Survey, 2015 (Results of Singles and Married Couples Survey). 2017; [http://www.ipss.go.jp/ps-doukou/j/doukou15/NFS15\\_reportALL.pdf](http://www.ipss.go.jp/ps-doukou/j/doukou15/NFS15_reportALL.pdf). (Accessed 27.10.2020)

Nova, Annie. “Here’s Why Millions of Millennials Are Not Homeowners.” CNBC, August 9, 2018. <https://www.cnbc.com/2018/08/09/millions-of-millennials-are-locked-out-of-homeownership-heres-why.html>.

“Number of Applications and Average Waiting Time for Public Rental Housing.” Hong Kong Housing Authority and Housing Department, May 10, 2021. <https://www.housingauthority.gov.hk/en/about-us/publications-and-statistics/prh-applications-average-waiting-time/index.html#:~:text=The%20Housing%20Authority’s%20objective%20is,around%20three%20years%20on%20average.>

“Number of Persons Living in Cage Housing.” Social Indicators of Hong Kong. Accessed April 15, 2021. <https://socialindicators.org.hk/en/indicators/housing/8.11>.

Ortiz-Ospina, Esteban. “The Rise of Living Alone: How One-Person Households Are Becoming Increasingly Common around the World.” Our World in Data, 2019. <https://ourworldindata.org/living-alone>.

“Remembering Kowloon Walled City.” South China Morning Post. SCMP Graphics, July 18, 2018. <https://www.scmp.com/infographics/article/1193675/remembering-kowloon-walled-city>.

“Rental Indices For Hong Kong Property Market,” Rating and Valuation Department - (The Government of the Hong Kong Special Administrative Region), accessed April 12, 2021, [https://www.rvd.gov.hk/en/property\\_market\\_statistics/index.html](https://www.rvd.gov.hk/en/property_market_statistics/index.html).

Richard Horden - Micro Architecture (Lecture in AA School of Architecture). YouTube, 2015. <https://www.youtube.com/watch?v=1NggF3CNCwM>.

Richard Horden | HCL Architects | The Micro Home (Richard Hordes's Presentation). Vimeo. <https://vimeo.com/190687159>.

Ronald, Richard, Oana Druta, and Maren Godzik. “Japan’s Urban Singles: Negotiating Alternatives to Family Households and Standard Housing Pathways.” *Urban Geography* 39, no. 7 (2018): 1018–40. <https://doi.org/10.1080/02723638.2018.1433924>.

Rooney, Nuala. *At Home with Density*. Hong Kong: Hong Kong University Press, 2003.

Rubenach, T., 2017. *Compact Living: Benchmarking the Liveability of Micro-Housing for the Sydney Market*. 2017

Scarr, Simon, Marco Hernandez, and Manas Sharma. "Sheltering in Small Places." Reuters. Thomson Reuters, April 21, 2020. <https://graphics.reuters.com/HEALTH-CORONAVIRUS/TOKYO-HOMES/dgkvlabxpbx/>.

Schumacher, Patrik. "Only Capitalism Can Solve the Housing Crisis." Adam Smith Institute, April 25, 2018. <https://www.adamsmith.org/capitalismcansolvethethehousingcrisis>.

Skalska, Karolina. 2016. "'Existenzminimum' - The rise of an idea." In *A house in a city: properties of an architectural thing.*, edited by Anna Mielnik, Vol. 8. Kraków, Poland: Wydawnictwo Politechniki Krakowskiej.

"Small," Cambridge Dictionary, accessed August 10, 2020, <https://dictionary.cambridge.org/tr/s%C3%B6zl%C3%BCk/ingilizce/small>.

"Statistical Handbook of Japan 2020." Statistics Bureau of Japan. Statistics Bureau Ministry of Internal Affairs and Communications Japan. Accessed June 14, 2020. <https://www.stat.go.jp/english/data/handbook/pdf/2020all.pdf>.



Stone, Juliet, Ann Berrington, and Jane Falkingham. "The Changing Determinants of UK Young Adults' Living Arrangements." *Demographic Research* 25 (2011): 629–66. <https://doi.org/10.4054/demres.2011.25.20>.

Stott, Rory. "The Paradoxical Popularity of Jean Prouvé's Demountable Houses." *ArchDaily*. ArchDaily, February 23, 2016. <https://www.archdaily.com/782589/the-paradoxical-popularity-of-jean-prouves-demountable-houses>.

"Survey on Subdivided Units in Hong Kong," The Legislative Council of the Hong Kong Special Administration Region (Policy 21 Limited, 2013), [https://www.legco.gov.hk/yr12-13/english/panels/hg/hg\\_lths/papers/hg\\_lths0530cb1-1197-1-e.pdf](https://www.legco.gov.hk/yr12-13/english/panels/hg/hg_lths/papers/hg_lths0530cb1-1197-1-e.pdf).

"Public Engagement Booklet- Task Force on Land Supply," The Government of the Hong Kong Special Administrative Region (Land For Hong Kong, April 2018), [https://www.devb.gov.hk/filemanager/en/content\\_1051/Land\\_Supply\\_En\\_Booklet.pdf](https://www.devb.gov.hk/filemanager/en/content_1051/Land_Supply_En_Booklet.pdf).

Rachel Sugar, "Hasbro's New Monopoly for Millennials Illustrates the Problem with Jokes about Millennials: They Have to Be Funny," (*Vox*, November 19, 2018), <https://www.vox.com/the-goods/2018/11/19/18102818/hasbro-millennial-monopoly>.

Taylor, Alan. "1923 Kanto Earthquake: Echoes from Japan's Past." *The Atlantic*. Atlantic Media Company, March 15, 2011. <https://www.theatlantic.com/photo/2011/03/1923-kanto-earthquake-echoes-from-japans-past/100025/#img01>.

The Government of The Hong Kong Special Administrative Region, Press Releases. (2018) Improving average living floor area per person. Available at: <https://www.info.gov.hk/gia/general/201806/20/P2018062000367.htm>

"The Macro View on Micro Units -." ULI. Urban Land Institute. Accessed February 5, 2021. [http://uli.org/wp-content/uploads/ULI-Documents/MicroUnit\\_full\\_rev\\_2015.pdf](http://uli.org/wp-content/uploads/ULI-Documents/MicroUnit_full_rev_2015.pdf).

"Thematic Report Persons Living in Subdivided Units " By Census. Census and Statistics Department, Hong Kong Special Administrative Region., 2016. [https://www.bycensus2016.gov.hk/data/16BC\\_SDU\\_report.pdf](https://www.bycensus2016.gov.hk/data/16BC_SDU_report.pdf).

Thoreau, Henry David. *Walden; or Life in the Woods*. Boston, MA: Ticknor and Fields, 1854.

Teige, Karel. *The Minimum Dwelling*: Translated by Eric Dluhosch. Cambridge, MA: MIT Press, 2002.

"Tiny." Cambridge Dictionary. Accessed August 10, 2020. <https://dictionary.cambridge.org/tr/%C3%B6zl%C3%BCk/ingilizce/tiny>.

Tiny House Talk (2015). Tiny House Movement: Affordable Revolution. Tiny House Media LLC webpage, <http://tinyhousetalk.com/tiny-housemovement/>

Tsukamoto, Yoshiharu, and Momoyo Kaijima. Bow-Wow from Post Bubble City = Atorie Wan Furomu Posuto Baburu Shitei. Tōkyō: INAX Shuppan, 2006.

Voon, Claire. "Why Japan's Futuristic Micro-Homes Are So Popular." Hyperallergic, January 11, 2016. <https://hyperallergic.com/250380/why-japans-futuristic-micro-homes-are-so-popular/>.

"WHITE PAPER ON LAND, INFRASTRUCTURE, TRANSPORT AND TOURISM IN JAPAN, 2015." Ministry of Land, Infrastructure, Transport and Tourism. Accessed June 15, 2021. <https://www.mlit.go.jp/en/statistics/white-paper-mlit-2019.html>.

Wright, Sophie. "Laundry Art - Photographs by Wing Ka Ho: Text by Sophie Wright." LensCulture. Accessed June 15, 2021. <https://www.lensculture.com/articles/wing-ka-ho-laundry-art#slideshow>.

"World Population Prospects 2019: Highlights." United Nations, 2019. <https://www.un.org/development/desa/publications/world-population-prospects-2019-highlights.html#:~:text=The%20world's%20population%20is%20expected,United%20Nations%20report%20launched%20today>.

World's Busiest Cities, Series 1, Hong Kong, BBC Two (BBC, 2019), <https://www.bbc.co.uk/programmes/b093q92w>.

Wolf, Micheal. "Architecture of Density." MICHAEL WOLF PHOTOGRAPHY. Accessed April 15, 2021. <https://photomichaelwolf.com/#architecture-of-density/1>.

Wolf, Micheal. "Back Door". MICHAEL WOLF PHOTOGRAPHY. Accessed April 15, 2021. <https://photomichaelwolf.com/#back-door/>

Wolf, Micheal. "Night" MICHAEL WOLF PHOTOGRAPHY. Accessed April 15, 2021. <https://photomichaelwolf.com/#night/>

Yip, NM and Forrest, R (2014) Choice or constraint? Exploring solo-living for young households in Hong Kong. Urban Research Group–City U on Cities Working Paper Series, Working Paper 1. Available at: <http://www.cityu.edu.hk/ityuoncities/ploa/il/rigina/05520140620144948.pdf>

Yorulmaz, Ilgın. "Hiroşima Ve Nagasaki: Atom Bombalarının Savaşta Kullanılmasının 75. Yılında Nükleer Silahsızlanma Hala Hayal." BBC , August 6, 2020. <https://www.bbc.com/turkce/haberler-dunya-53671515#:~:text=6%2D9%20A%20C4%209F%20ust%20os%20C%202020.,220%20binden%20fazla%20ki%20C5%209Fi%20%20C3%B6lm%C3%BC%20C5%209Ft%C3%B>

Zhong, Yifen. "Space for one" B.A Thesis. Massachusetts Institute of Technology, 2019. <https://dspace.mit.edu/handle/1721.1/121699>

“8% of the world population projected to live in urban areas by 2050, says UN”. United Nations, 2018. <https://www.un.org>

“2016 Population by Census, Thematic Report: Youths (2016).” 2016 Population By-census. Census and Statistics Department, Hong Kong Special Administrative Region, February 12, 2016. [https://www.bycensus2016.gov.hk/data/16BC\\_Youth\\_report\\_2018.02.12.pdf](https://www.bycensus2016.gov.hk/data/16BC_Youth_report_2018.02.12.pdf)

“2017 Employment Status Survey Summary of the Results.” Statistics Bureau of Japan. Statistics Bureau. Accessed November 2, 2020. <https://www.stat.go.jp/english/data/shugyou/pdf/sum2017.pdf>

