Compact **Living:**

Benchmarking the
Liveability of Micro-Housing
for the Sydney Market

Tom Rubenach

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Tom Rubenach was awarded the Byera Hadley Travelling Scholarship in 2015

Cover image: Inside one of the private en-suite rooms at The Collective's Old Oak development in London. Image courtesy of The Collective.

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Compact Living

Benchmarking the Liveability of Micro-Housing for the Sydney Market

"Why should the physical size of a dwelling determine its liveability?" This research seeks to explore the potential of a more compact housing typology for Sydney and assess its compatibility with our shifting cultural expectations.

It is acknowledged that “micro” or “compact” housing is not a universal solution. The diversity in our attitudes and expectations towards housing and the way we live are attuned to the priorities and values we each hold individually, and are largely influenced by our cultural upbringing and the preconceptions accrued from past generations.

However, it should also be acknowledged that the current generation of aspiring home owners is being met with far greater obstacles than its predecessors. Therefore, one must ask why we still see relevance in the idea of the Australian Dream – the supposed opportunity afforded to all of the stand-alone family home on a quarter acre block in suburbia – when such a concept is truly unattainable for the majority of millennials, especially in Sydney. In the face of growing pressures to increase density and tackle affordability in our urban centres, perhaps it is finally time to redefine the Australian Dream and reconsider the way we assign value to housing.

In light of this study’s principle title, it should be noted that not all of the projects that follow would typically be defined as compact housing. However, what they do exhibit (each in their own way) are characteristics or processes relevant to the development of a suitable compact housing model for Sydney. As an example, a number of the projects included here operate based on the idea of collective or shared living. For the purpose of future discussions, this concept is considered to be very influential in determining a new approach to dwelling size requirements, particularly in relation to private versus shared spaces and facilities. Likewise, other projects are framed here based on the processes which led to their development, as a response to the housing challenges experienced in their respective contexts. These alternative approaches are worth local consideration, given we face similar problems in our own housing market.

While some attempts are made throughout this report to describe or critique the design qualities of each project, the focus of this study is not to provide commentary on aesthetics. The principle aim is to identify the cultural and social shifts that are impacting the liveability of housing, and explore a selection of architectural responses (in cities with similar urban challenges) to better inform our approach to housing here in Sydney. Based on an understanding of current conditions, one approach is to question our pre-existing thoughts on physical space, and update these attitudes to reflect our changing lifestyles and the pressures of sustainable and affordable urban living.

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Introduction

In 2002, the state of New South Wales (NSW) became the first to legislate minimum apartment sizes in the approval of future multi-residential developments. These measures were introduced as part of *State Environmental Planning Policy No 65 - Design Quality of Residential Apartment Development* (SEPP65). The policy was branded as a method to control and monitor the quality of new medium- and high-density housing developments across NSW. It responded to a dramatic rise in the number of multi-residential developments - some 80,000 new apartments in Sydney alone within ten years [1] - while attempting to guarantee the performance of such structures and manage their impact on local communities. Ten design quality principles were outlined within SEPP65, forming a template for the *Residential Flat Design Code*, which accompanied the policy. The code served as a series of checks and balances for assessing the liveability of each apartment, ensuring solar access, natural ventilation, thermal comfort, and energy performance were all considered, while providing guidance on layout configurations and site amenity. Housing affordability was outlined as one of the policy's primary aims, listed as one of SEPP65's ten design principles. However, since its implementation, some have viewed the introduction of minimum floor areas (based on the number of bedrooms) as counterintuitive to this aim.

In 2015, around the time I was developing my area of study for this project, the government finalised a review of the policy's operation to date. They published a series of proposed amendments, which included substituting the old *Residential Flat Design Code* with the arguably more prescriptive *Apartment Design Guide*. The proliferation of new high-density residential developments across Sydney had continued, with approvals for apartment-type dwellings overtaking those for detached houses. [2] However, the city's housing affordability crisis had also escalated, despite attempts by local and state authorities to relax density controls and stimulate an increase in the supply of dwellings. More than a decade since SEPP65's implementation, there was little evidence to support any measurable improvement in housing affordability. Therefore, while few disputed the policy's overall intentions, aimed at a more considered and scientific approach to dwelling amenity, some within the industry continued to question the logic of legislating minimum apartment sizes and the impact this has on affordability. It is also curious to note that, in updating the schedule of design principles within SEPP65, a decision was made to delete "housing affordability" and rebrand it "housing diversity". In defining "diversity" the policy calls for designs that offer a variety of unit types, providing housing choice for different demographics, living needs, and household budgets. [3] Sadly, the policy doesn't go far enough in addressing affordability. What is absent is legislation to ensure a percentage of rent stabilised, affordable dwellings are included in each development, as has been done in cities such as London and New York.

In my exposure to the use of SEPP65 within professional practice, along with similarly prescriptive design codes (such as local Development Control Plans), I have witnessed an absence of flexibility and economic foresight when applied to site-specific circumstances. While SEPP65 requires the active involvement of an architect in the design of multi-residential developments, innovation is largely confined to aesthetics. Developers are often hesitant to veer away from the traditional approach, design decisions frequently favour short-term financial gains, and architects occasionally find themselves answerable to real estate agents - "experts" in the field of what residents want. Attempts to improve on convention or address social trends, if not already stifled by the critics mentioned above, become the subject of further scrutiny when exposed to the tick-a-box assessment process of local planning authorities. The end result is inevitable - mass fabrication of generic apartment types, each one built to suit the living requirements of hypothetical households, and all with a systemic lack of long-term flexibility.

In Sydney, many millennials are becoming increasingly demoralised by recurring reports on the city's inflated housing market and the limited opportunities available for those looking to secure affordable housing in relative proximity to employment. These reports largely attribute the continued lack of affordable housing to the growing imbalance between supply and demand. However, increasing housing supply must be understood as only part of the solution. The mass urban migration being experienced, both here in Australia and around the world, is a direct result of people looking for stable, long-term employment. However, vacant land in proximity to strong employment centres is a finite resource. Therefore, we need to be more critical of its current use, and ensure those who have the most to contribute towards the city's future growth are adequately supported. Other global cities, such as London and New York, have started to note a net loss of young professionals due to the lack of affordable housing. As a result, local businesses are finding it increasingly difficult to retain employees and have raised concerns about the long-term impact to productivity. Current conditions would suggest that a similar outcome is likely to emerge in Sydney.

If we are to seriously tackle the issue of housing affordability, then one important step is to assess the way in which we assign value to housing. At an average of 208m^2, Australia currently builds the largest dwellings of any country. [4] We exceed the United States of America, with their average of 201m^2, and more than double the average dwelling size of most European and Asian nations, including Germany (109m^2), the United Kingdom (76m^2), and Japan (95m^2). [5] Therefore, it would appear physical space is weighted very highly in our cultural definition of a liveable dwelling. However, there is some evidence to suggest our obsession with the size of our private dwellings is slowly being reined in. Despite increasing from 150m^2 to 208m^2 in the years between 1984 and 2013, the country's average dwelling size has stabilised over the past decade. [6] This can be linked to the rise in apartment-type developments, which have fallen in size since 2003 - from an average of 143m^2 to 134m^2 - perhaps due to higher demand for studios and one-bedroom units. [7] However, since the introduction of SEPP65, the average size of newly built apartment-type dwellings in NSW has fluctuated between 130m^2 and 150m^2. [8] This is well in excess of the 95m^2 legislated minimum size for a three-bedroom unit, suggesting the policy hasn't helped in generating more spatially efficient housing solutions.

In challenging the idea that a dwelling's physical size determines its liveability, it is important to identify shifts in our social priorities and to understand the impact these have on our housing culture. Today, the typical Australian household is more difficult to define. Across a century of cultural evolution Australia's median household size has fallen from 4.5 to 2.6 people. [9] More recently, we are observing a dramatic rise in the number of single-person dwellings, which currently make up almost a quarter of all households. [10] Our elderly are living healthier and longer than past generations, while young adults are increasingly deferring the traditional pressures of adulthood - marriage, employment, family - and instead seeking a more flexible, mobile, and independent life.

These shifts in our cultural development continue to influence the ways in which we live, demanding new approaches to the design and construction of our living environments. We are transitioning from a possession-based lifestyle to an experience-based lifestyle. Wealth and status have become more connected to how we live rather than a reflection of what we own, while our attitudes toward possessions are slowly reducing the spatial demands of our dwellings. The role of the home is changing, becoming more a place of private retreat - a place to escape and re-energise - rather than a place of socialisation. Millennials, in particular, are becoming increasingly drawn towards the city itself, as it provides both stability and freedom, while offering a more stimulating environment to socialise and collect experiences. With the help of technology, our living and working lives are becoming increasingly independent and spontaneous.

By examining this new age of mobility and digital freedom we can begin to redefine the role of the dwelling. The cultural values we assign to housing are in a constant state of change. Many of the living conditions we once struggled to acquire are now taken for granted, while our expectations continue to evolve. The term "dwelling" has moved beyond the fundamentals of a physical shelter to include more subjective elements, each attributing to the concept of "home". Therefore, before proposing alternative strategies for the production of housing, it is important to understand the various elements that influence a dwelling's liveability. To aid in the development of a new framework for analysing the compatibility of urban housing models, we must first examine the layered meaning of comfort with regard to domestic architecture.

The term comfort is easily generalised and highly subjective from person to person and across cultures. While difficult to define objectively, at its root it relates to a sense of well-being - synonymous with relief, warmth, and an absence of pain (discomfort). However, when discussing the meaning of comfort as applied to the built environment, the definition goes beyond the environmental sphere and considers psychological attributes. In a domestic context, the idea of comfort has evolved over time in response to the changing aspirations of the dweller. At a base level, comfort was achieved with shelter, providing protection from the natural elements and safety from intruders. However, with time, society began to want more from their dwellings. The shelter matured into the "home", as notions of privacy, domesticity, efficiency, and beauty were given greater importance. This transition of a house towards a private home is discussed by Witold Rybczynski in his book *Home - A Short History of an Idea*:

> *"The household had changed, both physically and emotionally; as it had ceased to be a workplace, it had become smaller and, more importantly, less public. Since there were fewer occupants, not only its size but also the very atmosphere within the house was affected. It was now a place for personal, intimate behaviour."*
>
> *"The house was no longer only a shelter against the elements, a protection against the intruder - although these remained important functions - it had become the setting for a new, compact social unit: the family. With the family came isolation, but also family life and domesticity. The house was becoming a home, and following privacy and domesticity the stage was set for the third discovery: the idea of comfort."* [11]

Attaining comfort in a domestic environment is synonymous with the concept of habitability. In *Human Space*, Otto Bollnow outlined the elements he believed contributed to the "homeliness" of a dwelling. Comfort, he suggested, could be found within a dwelling that gave the impression of seclusion and provided refuge from the outside world. The interior space needed to suitably accommodate the needs of its inhabitants, and be appropriately furnished so as to appear lived in. The dwelling was to offer warmth and appear familiar to its occupants; it should be an expression of the individuals who inhabit it, a reflection of their history, and a preservation of past memories. Finally, it was to provide an atmosphere conducive to human intimacy, and be accommodating of family life. For Bollnow, the role of the dwelling was to enable the fulfilment of a human life:

> *"In order to survive in the world and be able to fulfil his tasks there, man needs a space providing security and peace, to which he can retreat, in which he can unwind and become his normal self again, when he has warn himself out in battle with the outside world."* [12]

> *"Man needs such a centre, in which he is rooted in space and to which all his relationships in space refer... This is the place where humans 'dwell', where they are 'at home' and to which they can always 'return home'."* [13]

In highlighting the attributes that relate to domestic comfort, we can categorise them as either a physical or subjective element. Such is the method used by architects Helga Santos da Silva and Mauro Cesar de Oliveira Santos, in their research paper *The Meaning of Comfort in Residential Environments*. They define the physical attributes of comfort as those linked to bodily protection, and relief from the primal anxieties caused by exposure to the natural environment or physical harm. The subjective attributes are those tied to our desires and aspirations, and often vary according to our cultural expectations. In their research, they identify the following attributes of domestic comfort, distributing each according to the context in which it is observed:

Physical Context:	**Subjective Context:**
Safety	Territory
Environmental Adjustment	Home
Efficiency	Privacy
	Beauty

Santas and Silva conclude that each attribute sits intertwined with the others, and all are required to attain comfort within a domestic environment. While I agree that a multi-layered series of elements collectively contribute to the perceived comfort of a dwelling, applying their template to real world projects appears to ignore one increasingly important component: affordability. Establishing the full set of architectural conditions needed to deliver individualised comfort becomes more complicated when restrained by a budget. When domestic comfort is impacted by the financial need to compromise, it becomes more difficult to assess. Despite our efforts to minimise the net damage to a dwelling's amenity, in our compromises we can often be misguided by outdated cultural expectations and preconceptions of value. We lose sight of a balance that works for us specifically, and must therefore establish a new way of assessing comfort which reflects the need to compromise.

Therefore, I put forward my own four-tiered approach to determine the liveability of a dwelling with respect to personal circumstances. The relevance of each tier should be adjusted to favour individual needs and preferences, so as to arrive at the tailored set of conditions most suited to your current living situation.

The four tiers for analysing domestic comfort are defined as:

Spatial Comfort - the dimensional and architectural properties as relevant to your specific household needs, the adequacy of the dwelling with regard to its size, the efficiencies of its layout, the ergonomics of its inclusive parts, and the opportunities it provides for growth, flexibility, and future adjustment.

Environmental Comfort - the thermal performance and environmental efficiencies of the dwelling's design and long-term operation. This includes access to natural daylight, controlled sunlight, fresh air, and natural ventilation, as well as technology based inclusions that facilitate thermal conditioning, monitor air quality, and provide physical comfort in relation to the outdoor environment.

Social Comfort - the dwelling's ability to support and sustain you in your relationships with other people, including fellow household members, family, friends, work colleagues, and the public. It represents the elements of a dwelling which enable privacy, intimacy, domesticity, self-expression, recreation, and a sense of belonging or ownership. It also explores the priorities associated with a dwelling's location, and its connectivity or isolation for the other aspects of your life.

Financial Comfort - the dwelling's impact on your way of life with regard to affordability. It questions your willingness to make compromises in other areas of your life to facilitate your housing choices, and aligns our expectations of space and amenity with our desire for freedom and adaptability.

Developing an approach to the supply of housing that offers the flexibility to fine-tune dwelling performance and address personal needs is no small task. Perhaps "diversity" is the appropriate starting point, not just diversity in terms of dwelling type, but diversity in the processes of housing construction and tenure. If we are to successfully implement strategies which allow future residents to define their own cost-to-amenity mix, we must start by untangling ourselves from the cultural biases of the current housing system, and rethink the ways in which we assign value to our dwellings. The introduction of more compact housing typologies appears an obvious and inevitable part of the solution, as we seek to develop more compatible procedures for housing future generations. However, determining the appropriate forms for them to take and the systems by which they operate is a matter of continuing debate.

Sydney is not alone in having to address the problems of urban density and housing affordability. In completing this study, I was fortunate enough to travel to Tokyo, London, Berlin, and New York, cities which all currently face similar challenges with regard to sustainable housing supply. Presented as a series of articles, the following report seeks to better understand the wide range of social and cultural conditions which influence the different ways in which we live, while analysing a number of unique architectural responses to these issues.

[1] Bob Carr, "Premier's Foreword," in *Residential Flat Design Code* (NSW Planning Department, 2002).
[2] Andrew Wilson, "Sydney apartment building boom skyrockets," *Domain*, August 30, 2016, accessed February 23, 2017, https://www.domain.com.au/news/sydney-apartment-building-boom-skyrockets/.
[3] *State Environmental Planning Policy No. 65*, (NSW), Schedule 1, January 6, 2017, accessed February 23, 2017, http://www.legislation.nsw.gov.au/#/view/EPI/2002/530/sch1.
[4] Australian Bureau of Statistics, *8752.0 - Building Activity, Australia, Jun 2013*, accessed February 23, 2017, http://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/8752.0Feature%20Article1Jun%202013.
[5] Lindsay Wilson, "How big is a house? Average house size by country," Shrink That Footprint, April 30, 2013, accessed February 23, 2017, http://shrinkthatfootprint.com/how-big-is-a-house.
[6] ABS, *8752.0 - Building Activity, Australia, Jun 2013*.
[7] ABS, *8752.0 - Building Activity, Australia, Jun 2013*.
[8] ABS, *8752.0 - Building Activity, Australia, Jun 2013*.
[9] Australian Institute of Family Studies, "Households in Australia," accessed February 23, 2017, https://aifs.gov.au/facts-and-figures/households-australia.
[10] AIFS, "Households in Australia."
[11] Witold Rybczynski, *Home - A Short History of an Idea* (New York: Penguin, 1987), p. 77.
[12] Otto F. Bollnow, *Human Space*, trans. Christine Shuttleworth (London: Hyphen Press, 2011), p. 130.
[13] Otto F. Bollnow, *Human Space*, p. 119.

i The Tiny House Movement

Percolating on the fringes of our housing culture, the tiny house movement has continued to gain international attention over the past decade. While it has sustained some momentum here in Australia, the movement's biggest growth has been witnessed in the United States of America. The first signs of real traction occurred shortly after Hurricane Katrina (2005), when designer Marianne Cusato released a series of small house plans branded as Katrina Cottages. The designs ranged from 300sqft (28m^2) up to 1800sqft (167m^2), and were developed as more aesthetic and amenable alternatives to the demountable FEMA (Federal Emergency Management Agency) trailers traditionally assigned to victims of natural disasters. When the US housing bubble burst during the global financial crisis (2007-08), the same concept of a smaller, more affordable housing solution drew the attention of those worst affected. Since then the movement has continued to attract people willing to downscale their dwelling space in order to live mortgage free, while others turn to it as a means of reducing their carbon footprint and living more sustainably. The tiny house movement markets itself as responding to the very real need for more affordable, amenable, and sustainable housing.

So what are the spatial parameters for a tiny house? It seems owning a house less than 1,000sqft (93m^2) qualifies you for a place within the social movement. Some make a distinction between small houses, those 400sqft to 1,000sqft, and tiny houses, those less than 400sqft (37m^2). However, the spatial definition appears far less important than the movement's social aims: environmental consciousness, life simplification, and self-sufficiency. The movement challenges our efforts to retain traditionalist approaches to home ownership in an economic climate that is rigged against us, while also questioning our rationale for committing such high portions of our income towards where we live.

Despite drawing attention to a number of key concerns, the tiny house movement has also contracted a bit of a stigma. Some align its downscale, eco-friendly lifestyle with that of hippies and transients. Locally this has a lot to do with the fact that tiny houses sit within the grey areas of legislation and aren't adequately considered under the building code. This impacts how they are defined, where they can be built, and their permanency. There is limited guidance on how to seek building approval for a tiny home, forcing many owners to build in remote areas, often atop wheeled trailers to allow relocation if later objected to by authorities. Tiny houses within urban areas are rare. The most common examples are granny flats, which appear to undergo a less stringent approval process because they aren't considered a primary residence. In the context of such restriction and ambiguity, it is difficult to find support for the inclusion of tiny houses within existing residential neighbourhoods. Based on their default aesthetics, many would struggle to draw distinctions between a community of tiny houses and a caravan park. Overcoming such a stereotype remains a challenge, and for now this group of micro living enthusiasts feel obliged to park themselves beyond the city's urban edge.

Getaway offer short stay rental experiences with their collection of tiny homes outside Boston and New York for those looking to escape the city

 As a consequence of this, one must query the true long-term sustainability of retreating to a tiny home on the city's outskirts, if you then have to commute long distances for food, work, and entertainment. To counter this impact some attempt to live "off-grid", opting to grow their own food, raise livestock, harvest rainwater, and collect solar energy. Yet of all those willing to pursue a downscaled life, most will look to maintain a high level of connectivity to the city. Density goes a long way to helping provide services economically, and if tiny houses are only thinly spread across a city's outer fringes, this would appear to counteract the movement's aims. A tiny house may release you from the trappings of traditionalist home ownership. However, this new found financial freedom may soon suffocate as a result of prescribed isolation - bogged down by the added labours of achieving true sustainability. It would appear that in its current form the tiny house movement cannot be genuine without being all consuming. It requires a complete change of lifestyle.

It may sound appealing to some, but living small in rural isolation does little to stem the growing pressures of density and urban sprawl. The houses may be tiny, but the movement itself struggles to be seen as much more than faddish escapism, and remains difficult to translate into an urban context. If we are truly invested in solving our local housing crisis, then in parallel to re-examining the spatial requirements of our dwellings we must also consider new ways of grouping housing, and find a middle ground between the suburban stand-alone house and an apartment building. The challenge for any global city is to balance employment opportunities with proximity to housing. Affordability cannot be solved simply by increasing housing supply. Efficient land use that caters to current and future lifestyle trends is a critical part of the solution.

So where do we go from here? Can we apply the principles of the tiny house movement in an urban setting? How do we do so without building inner city camping groups and trailer parks? To assist answering these questions, and help steer us towards a potential urban equivalent to the tiny house, I turn first to Japan.

The Mt. Hood Tiny House Village is made up of five compact and relocatable homes located about 45 minutes outside of Portland, Oregan

ii The Craze for Kyosho Jutaku

In the past decade or so, Japan has developed something of a reputation internationally for its unique approach to housing – small, abstractionist experiments that place emphasis on the unconventional, while appearing to give less thought to function or amenity. However, despite this publicity, outside of Japan the relevance of such a phenomenon is commonly dismissed, perhaps a consequence of cultural bias. Locally the movement has been branded *kyosho jutaku*, which translates to micro living, and represents the growing number of projects which uphold a mantra of living more with less. To help uncover the influences behind this emerging craze, I have arranged to visit the Tokyo office of architecture practice Atelier Tekuto and meet with practice director Yasuhiro Yamashita. Over the course of his career Yasuhiro has designed some 300 homes, and become somewhat of an expert in the design approach and spatial principles associated with compact living.

To provide a context for his work, Yasuhiro begins by explaining Japan's cultural acceptance of minimalist living. The country is roughly 30% flat and liveable, and 70% mountains and forests. As a small island nation, Japan has always relied heavily on its own natural resources, with timber quickly becoming the dominant building material. Plagued by earthquakes and typhoons, traditional Japanese houses were highly susceptible to collapse, and often whole villages were destroyed in the resulting fires. Such events were expected and accepted. Out of respect for mother nature, little effort was ever made to protect against her wrath. Few structures were designed for long-term performance, and remnants of this rebuild culture still exist today. One example is the Ise Jingu shrine, which is torn down every 20 years by the local community and rebuilt anew. With each reconstruction, the belief is the shrine is purified, cleansed of the impacts of time by returning it to its original state.

The concept of living with only the fundamentals and not to excess is central to Zen culture. Yasuhiro recalls a Japanese saying, which translates as "you only need half a tatami mat to stand on, and a full tatami mat to lie down". This idea is similarly expressed in a passage from *An Account of My Hut*, written by Kamo no Chōmei in 1212, who many architects cite as the first spokesperson for *kyosho jutaku*. In describing his timber framed hut, only ten feet square and built deep in the mountains, Chōmei writes:

> *"It is very small, but it holds a bed where I may lie at night and a seat for me in the day; it lacks nothing as a place for me to dwell. The hermit crab chooses to live in little shells because it well knows the size of its body."* [1]

In his project Reflection of Mineral House architect Yasuhiro Yamashita developed a sculpted form that maximised the site's permissible floor area

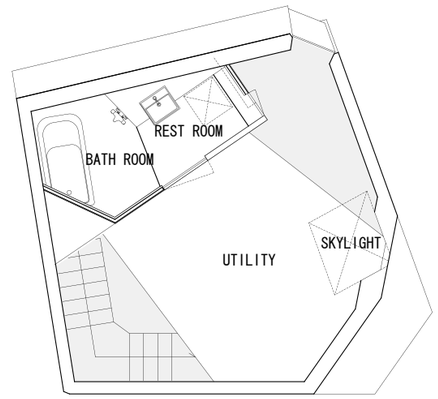
In his essay, Chōmei recounts events which have reshaped the city during his lifetime. He tells of a great fire, a whirlwind, a famine, and an earthquake, each of which crippled the capital (Kyoto at that time) and its people. He begins by describing the ceaseless flow of a river, with its surface in a constant state of change, and equates this to humans and their dwellings in the city. Eight centuries on, at the 2010 Venice Biennale of Architecture, the same concept was presented inside the Japanese Pavilion. In the exhibition titled *Tokyo Metabolising*, a series of time stamped satellite images were screened chronologically to highlight the city's daily transformation and continual self-reinvention. However, today the city's evolution is less a result of natural disaster and more attuned to shifts in cultural preference and social circumstance. Yasuhiro confirms the Japanese home has an average lifespan of just 25 years. Only the land, not the house, is perceived to hold long-term value. Houses rarely survive more than one generation of the family. As the living situation of a household evolves, the house is commonly torn down and replaced, in order to address changing needs.

Echoing the principles of the Australian Dream, Yasuhiro indicates that owning a house or apartment is the dream which drives most Japanese workers. However, he also notes that home ownership in Japan is a relatively recent concept. It is only in the last 150 years that citizens have been able to purchase land. Prior to this, during the Tokugawa (Edo) Period (1603-1868), land was controlled by the *daimyō* (feudal lords appointed by the Shogun) and borrowed by merchants and farmers, who established small villages. The country's capital, Edo (former Tokyo), was divided into the upper (Yamanote) and lower (Shitamachi) cities. The upper city housed the nobility of the sword - feudal lords and their samurai - and included temples, shrines and gardens, whereas the lower city supported local artisans and merchants, and housed the poorer classes. The living conditions varied dramatically between the two cities, and land was already a precious resource. It was not until after the end of the Tokugawa regime, when Japan became more open to Western influence, that laws were introduced to allow individual property ownership for all classes. Perhaps this explains why today, as Yasuhiro says, Japanese people view owning a house as having a "private castle", regardless of its physical size.

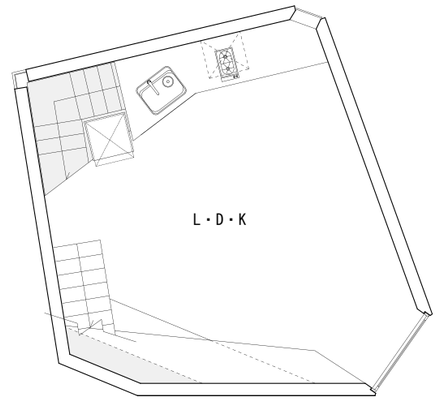
In Japan's urban centres, land scarcity and inflated property prices make home ownership a serious challenge for young adults. As of 2008, only 5.5% of residents in Tokyo under the age of 30 owned their own home, and for those aged 30-39, the home ownership rate was less than 30%. [2] Despite property prices remaining fairly stagnant over the past two decades, a continual decline in income levels has the average house price at 8.7 times the typical earnings of young workers (aged 30 years and under). [3] Given home ownership is still viewed as the basis of self-sufficiency, and integral to obtaining welfare security for young families, a new generation of aspiring home owners have been urging architects like Yasuhiro to challenge the norms of housing design. Their collective brief asks for small and affordable dwellings. The sites which they are able to afford are often awkwardly shaped, calling for experimentation with form, structure, and materials. The architecture at times calls for a symbiotic relationship with its inhabitants. Not expecting a home for eternity, and unfazed by convention or resale value, owners seem prepared to accept higher levels of spatial compromise. There is a willingness to adapt their existing living habits in the pursuit of a place to call their own.

In speaking with Yasuhiro about some of his housing projects, you begin to understand his design approach. Over his career, he has developed a number of techniques to ensure scale doesn't infringe on amenity. Referencing a scale model of one recent project, he explains, the exterior form is a result of many tested iterations aimed at determining the maximum volume possible for the building's site. The house's unique shell was determined by the various building constraints imposed on the site: building height, setbacks, floor space ratio etc. Yasuhiro likens it to the way a craftsman studies a stone, to maximise value and weight, before cutting it into a faceted gem. It is this analogy which led to the project's name, Reflection of Mineral House. When asked, Yasuhiro confirms there was an overlap between this process and his thoughts for the interior spatial arrangement. These two avenues of the design ran in parallel and informed each other.

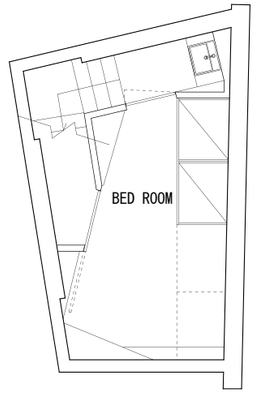
Daylight floods the house's interior, while white and reflective surfaces disguise its modest scale



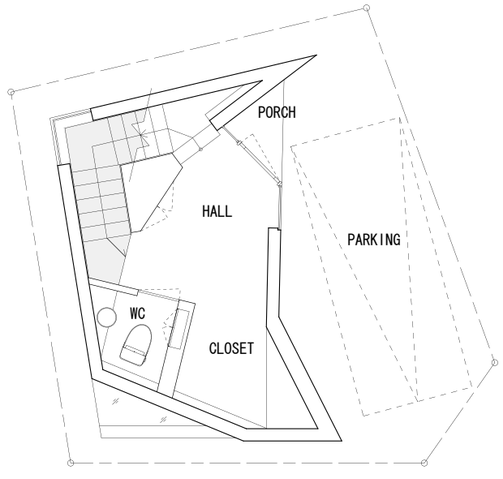
Second Floor



First Floor



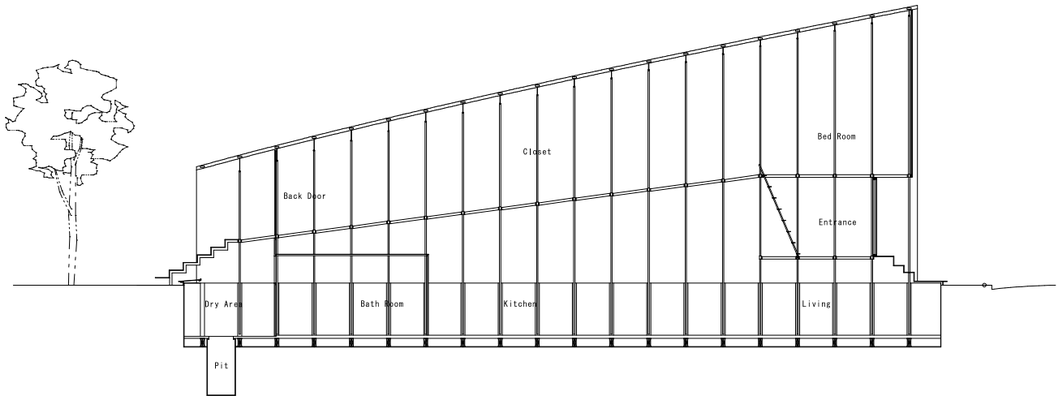
Basement Level



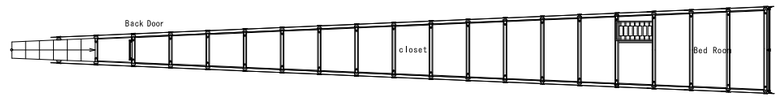
Ground Floor

Reflection of Mineral House Plans
Scale: 1 : 100

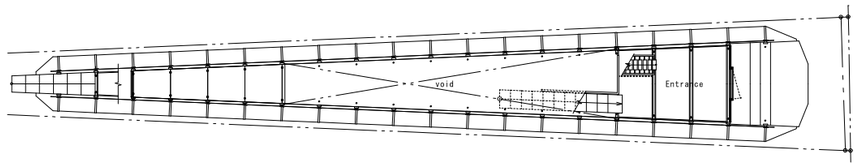
Of an evening the tent-like canopy of Lucky Drops House glows from within, while providing shelter for the building's underground living spaces



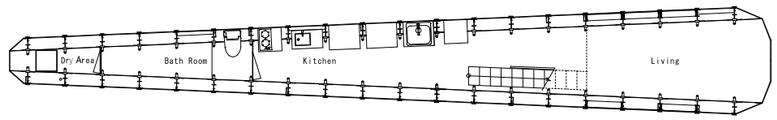
Lucky Drops House Section
Scale: 1 : 150



First Floor



Ground Floor



Basement Level

Lucky Drops House Plans
Scale: 1 : 150

As is obvious from the project's scale model, Yasuhiro doesn't shy away from irregular shapes or non-uniform spaces. In fact, he believes such forms help disguise and distract from a space's actual size. He describes the feeling you would get standing inside an eggshell, with its crisp white interior of curved walls and absence of sharp corners to trap light or cast shadows. In his houses, he will often deliberately destroy square corners by slicing through them with an extra surface, eliminating the dark lines of a right angle, and blurring the junction of wall and ceiling. Often, this extra surface forms a window or skylight, opening the interior up to daylight or a view towards the sky. As views of the streetscape are often chaotic and uncontrollable, links to nature and the outdoors are carefully framed. His buildings commonly open themselves up to the outdoors via internalised courtyards or roof lights, and tend to filter any visual connections made directly with the street. Access to natural light is critical in minimising feelings of claustrophobia, and high ceilings can also make a space appear larger. Yasuhiro suggests that monochromatic spaces, such as an all white interior, make it harder to detect surface edges, while the use of reflective materials can also enhance the impact of lighting and disguise spatial boundaries.

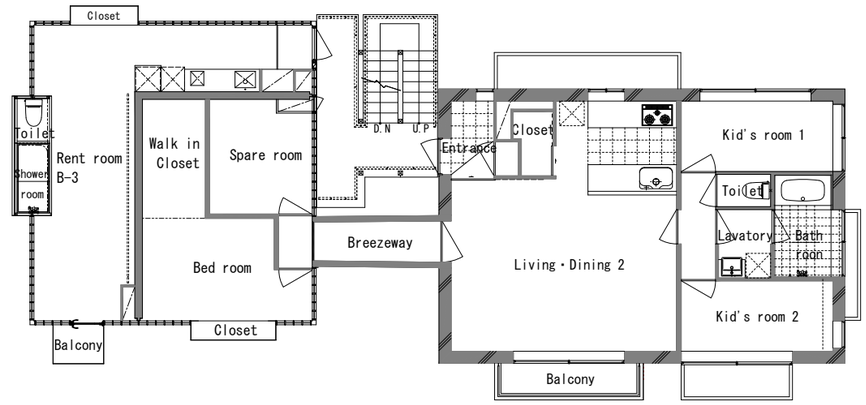
One of Yasuhiro's most striking projects is likely also one of the more challenging infill sites ever to be developed in Tokyo. Named Lucky Drops, the site is a narrow trapezoid, with a street frontage of 3.2m, a length of almost 30m, and a back edge of just 0.7m. Making use of such a uniquely proportioned plot took a new level of ingenuity, with the bulk of the living spaces buried below ground, where the 0.5m setback didn't apply. The tent-like canopy that sits above ground combines both skin and structure in as thin a profile as was possible, so as to minimise the loss of usable internal space. However, apart from an entrance at each end and a second floor loft space, the visible portion of the building acts predominantly as a shelter and roof light for the underground spaces. The translucent skin and perforated metal floor allow an abundance of much needed natural light to flood the sunken living area, without compromising privacy. The house is the result of experimentation, in both construction and materiality, as are many of Yasuhiro's projects.

His project Twin Bricks is another example of this methodology. The building combines two apartments, which serve a young family and the father's parents, and a further five micro units for rent. The project was conceived as two wings, the front half for the family (including a garage, relying on easy street access) and the rear section, which is divided up into rental accommodation. This distinction is clear in the building's aesthetics, the result of a new experimental method of construction for the building's back half. The exterior skin expresses a structural grid, developed by Yasuhiro to resist the movement of earthquakes, with a two by three infill module of glass bricks. As Yamashita explains, the thin structural lattice fits within the standard mortar thickness, so as to avoid interruptions. In addition, this structural system allows for alterations to the façade to be made easily. One is able to interchange and relocate openings to suit future changes to the internal layout. With such experimentation the project offers a level of durability and adaptability beyond that of traditional construction.

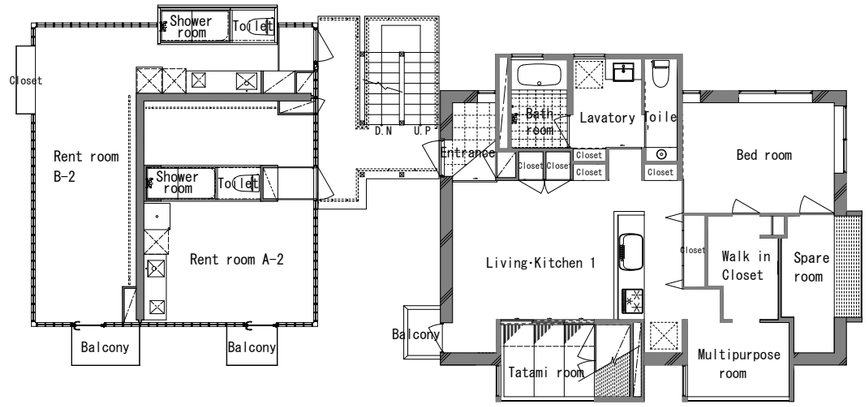
In regard to his projects' functionality and performance, Yasuhiro stresses the importance of a personalised solution, which feeds off the requirements of both the owner and the site itself. In his work, he takes inspiration from traditional methods and local materials, yet avoids the use of standardised parts. It appears Yasuhiro is willing to take advantage of his strong reputation, and the limited risks associated with these smaller scale projects, to pursue new techniques and develop alternative uses for materials. Each project is an opportunity for invention. Upon completion they stand as prototypes ready to undergo testing, for at least 25 years and maybe more...

[1] Kamo no Chōmei, *Hōjōki (An Account of My Hut)*, in *Anthology of Japanese Literature* (New York: Grove Press, 1955), p. 209.
[2] Zoe Ward, "MLIT White Paper on Home Ownership," *Japan Property Central*, July 6, 2013, accessed January 14, 2017, http://japanpropertycentral.com/2013/07/mlit-white-paper-on-home-ownership/
[3] Ward, "MLIT White Paper on Home Ownership."

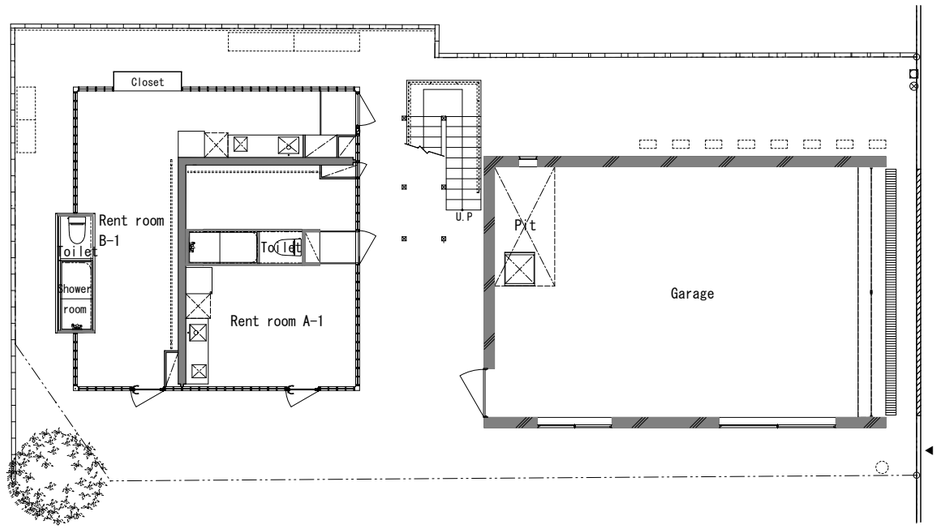
Upon entering the house you either proceed below ground into the main living areas, or up a ladder into the building's loft with its sloping mesh floor



Second Floor



First Floor



Ground Floor

◂ **For his project Twin Bricks, Yasuhiro Yamashita integrated a thin structural lattice into the building's facade to help it withstand Tokyo's earthquakes**

Twin Bricks Development Plans
Scale: 1 : 150

A freestanding blade wall sits beyond the roof line and funnels visitors towards the front door of Makiko Tsukada's M&M House in Tokyo

iii The Home Reimagined

While Japan's new generation of aspiring home owners may be more agreeable to experimentation, this should not be understood as pure compromise for the sake of obtaining a place to call their own. This need for invention is partly born out of a growing demand for increased functionality within the home. The role of the house in Japanese culture has expanded to accommodate the shifting trends in work and family life. Owners are seeking smarter, higher performing houses that offer more for less – greater functionality and flexibility despite a smaller footprint or volume. Some housing is being built to include a work or retail space, while other dwellings are reintroducing the concept of multi-generational living and taking advantage of what old (wealth) and young (care) have to offer each other. Despite their contemporary aesthetic, many of these reinvented homes retain an essence of the traditional Japanese house – a logical relationship between structure and interior space to allow flexibility of use, and a strong connection to nature. In Tokyo, the collective works of local architect Makiko Tsukada offer a good introduction to this idea of the Japanese home reimagined.

I have arranged to meet with Makiko at her combined home and architectural studio in the residential neighbourhood of Nerima. Located on a small corner block, the house radiates a level of grace and sophistication not found in its neighbours. It reads as playful and daring, yet exudes a modesty in its scale and a honesty through its detailing and materiality. The building has been moulded to fit comfortably within its irregular site. The house's exterior walls, finished in a rough grey render, appear to shield its interior from the public street. Freestanding blade walls stand beyond the building's roof line, accommodating a tiny courtyard garden on one side and funnelling visitors towards the house's recessed entrance.

The house's honesty continues inside; the interior walls appear to be lined in raw fibrous cement sheets, their joints expressed and screw fixings left exposed. Pale timber floorboards and matching joinery units offer an intimate and functional studio/office space, adjacent to the narrow entrance hall, from where Makiko runs her practice. Heading upstairs, via an elegant spiral staircase, we emerge into a modest, yet comfortable combined kitchen, living, and dining room. There is an abundance of natural light in the space, which filters in through a highlight window that wraps around the room under the roof. The high ceiling gives the impression the space is bigger than it actually is.

This house, completed in 1996, marks the beginning of Makiko's architectural practice. Having originally studied as an engineer, Makiko quickly developed a desire for more control over projects as a whole, not just their structure. However, it would appear her background in engineering does feed into her architecture, allowing her to challenge traditional methods and conceive both form and structure in unison. Before beginning her own practice Makiko spent time working in the respective offices of local architects Minoru Takeyama and Shigeru Ban. These are the architects she feels have most influenced her career and informed her approach in regards to construction and materiality.

28 There appear to be a number of social trends influencing Japanese housing models. Despite an ageing population, there has been a shift away from the more traditional housing typology of multi-generational living. An increasing desire across all age groups to live closer to the city is made difficult by high land prices and limited space within urban areas. Makiko explains that in her projects she looks for pockets of “disadvantaged” land. These are sites with an unusual or irregular shape, which have been left unbuilt. They present more of a challenge to inhabit and are perceived to hold less value, making them more affordable. Makiko suggests that the challenge to build on these sites makes each project visually unique, and therefore for an architect each project is refreshing and new.

So why are Japanese clients more accepting of alternative and experimental house designs than in other cultures? Is it because there is no resale value in a Japanese house? If only the land retains value, perhaps owners are more inclined to build something unique and personalised. Makiko explains that when the economy was good (during Japan’s “bubble” period of the 1980s and early 1990s), the balance between the price of land and the house itself was totally skewed. This meant only land was considered to have resale value, and the house ignored. However, now there is renewed interest in longer-term housing investments. Clients will choose to buy one of these disadvantaged blocks of land and then focus on the design of the house, with the intention of living in the same place for a long time. Hence, less thought is given to resale value. The focus is instead given to the experience of living in the house itself, and for the architect each project becomes very specific to the personal requirements of its owner.

Makiko believes that after the bubble burst and land prices dropped, people began looking to build more unique and personalised housing. However, as the economy begins to improve, the focus is shifting towards housing that is more cost effective and quicker to build. In addition to this, Makiko feels clients are demanding more functionality from their houses. They are no longer just a home but must perform other roles. Makiko refers to plans for one of her other projects, which was designed to accommodate two generations. The house provides a ground floor unit for the owner’s parents, independent of the main house and easily rented out in the future. There is also a separate studio space, which is used to teach *ikebana* (flower arranging).

Makiko refers to another one of her projects, Kozuki House, where the ground floor includes a retail space and a “grandpa room”, which can be absorbed back into the shop tenancy if no longer needed. The building sits nestled between its neighbours, accessed only via its narrow street frontage. Despite being only 3m wide, the house’s interior spaces are arranged around two staircases, ensuring no space feels like a dead end. Rooms are suspended across the building’s width and supported by the perimeter walls, to eliminate the need for columns. The interior is white, minimalist, and flooded with light from the skylights above. Translucent partitions separate each space, yet limit any sense of enclosure. Small spaces feel open and remain visually connected to the building’s central void. These techniques disguise what is on paper a small house, and help balance the spatial values of function and amenity.

For the second part of our meeting Makiko has arranged a visit to another one of her projects, Sukima Atelier. Located one back from the corner, and separated from this neighbour by a narrow car space, the house’s front façade is technically its side. The narrower, street facing facade is a monolithic blank wall, the top trimmed to follow the fall of the roof, and built as close to the boundary as was allowed. In contrast to its beige and tan coloured neighbours, Sukima Atelier has a dark, moody-grey exterior. The only openings visible from the road run along the building’s south facing “front” side. On the upper level a large window sits just back from the street corner, shaded by a deep cantilevered awning, while at the far end a square framed profile has been extruded out of the wall to form a narrow balcony. The entire opening is glazed and integrated with sliding

The entrance to Sukima Atelier sits beneath a cantilevered timber pergola woven with planting and providing shelter for the car parking space

doors to access the balcony. At ground level two obscured glass doors sit at either end of a continuous band of windows, all beneath a cantilevered timber pergola woven with planting and providing shelter for the car space.

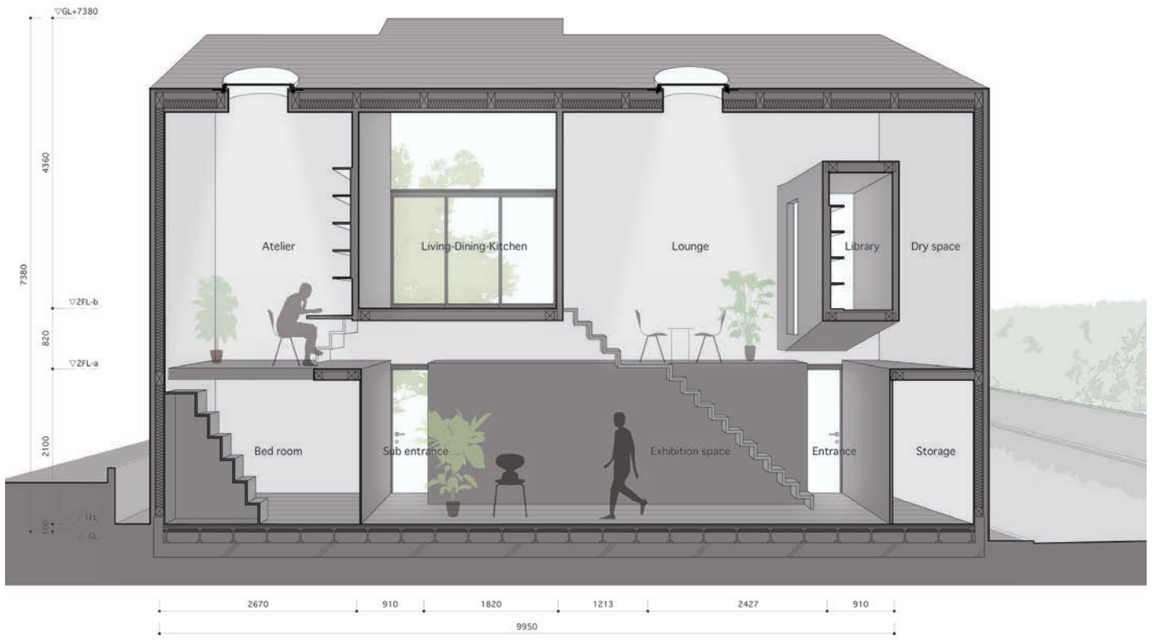
Although not obvious from the street, once inside you immediately appreciate this is not a typical house. Makiko describes the design of the house as representative of life in the city. The idea was to transfer the experience of walking through the city into a single piece of architecture. While some spaces are defined by specific functions, their boundaries are less rigid. The house reads as one large central space, surrounded by a series of interconnected caves, alcoves, and tunnels. Given its relatively small size, there is a profound diversity in the range of experiences offered by the design, which give added pleasure to the house's living experience. The structure is simple; a series of beams and boxes. The geometry is crisp and familiar, orthogonal, not curved. The materials are reserved, a mix of rough and smooth darkly stained timber, contrasted against the flat white interior shell. The house's complexities are obscured by their own refined detailing, and it doesn't try to hide anything. Everything appears intentional, deliberate, and as a result, rational.

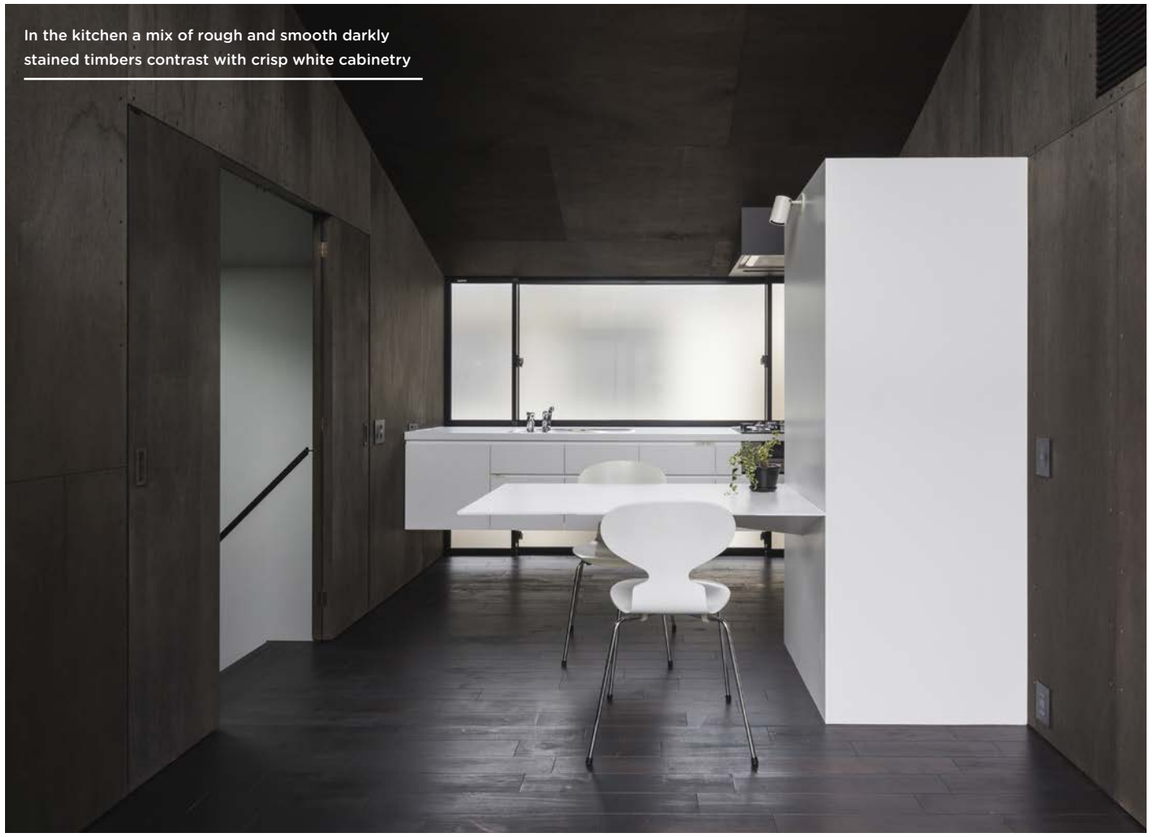
Once again, this house offers more than the traditional home. The owner's brief included space for an office/studio with toilet, a separate studio for his wife, a small library, a storage area, and a large gallery/lounge space for exhibiting his artwork, listening to music, and entertaining friends. Accommodating all these functional requirements within the building's shell appears to have been the main driver of the architecture. Juggling the layering of public and private spaces within the dwelling, and articulating these transitions with light and materials, is perhaps the most interesting element within the building. Both of the house's entrances lead you into the central gallery space. This serves as an extension of the public threshold, and from here doorways lead into more intimate rooms. Taking the stairs you first stop at a large open landing, which doubles as a lounge area. From here you can either climb further up into the kitchen, or instead turn and step up into the floating library pod, with its ramped floor and lookout window. This is the only unfiltered visual link to the outside, which stares directly down the street, tracking anyone who approaches the front door.

In the kitchen, from left to right, the work space transitions into a play space. The wrap around kitchen joinery morphs into a cantilevered tabletop, offering a place to sit and eat, and the glazed right hand wall (with vertical blinds for privacy) opens out onto the balcony. An opening in the corner leads down into the office/studio, which is lit from above by a skylight. The wall cuts away below the desk, providing an indirect link back to the main gallery space. An operable hatch in the floor accesses the steep, narrow stair down to the bedroom. Back in the main gallery, the bathroom and second studio run along the front wall between the two entry doors. The toilet and store room sit against the street boundary wall, below the laundry room, which is accessed via the library pod.

From the main gallery space a timber stair leads up to a large open landing which doubles as a lounge area, and then climbs further into the kitchen

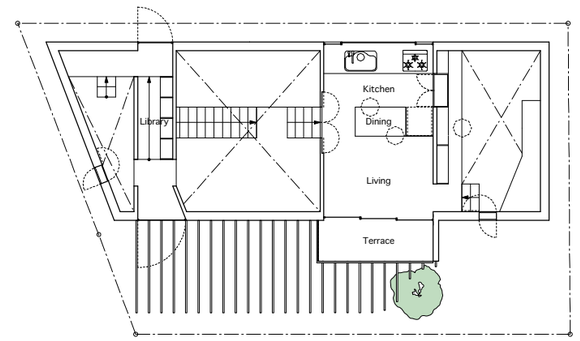
Internally the house reads as one large space, which connects a series of caves, alcoves, and tunnels



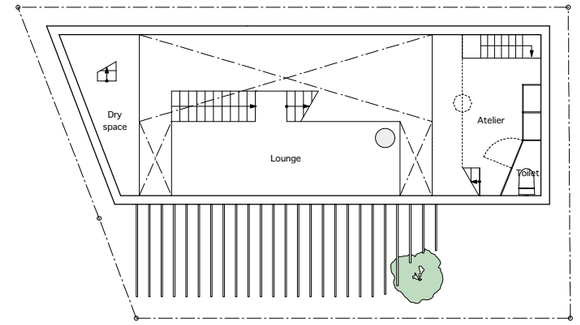


In the kitchen a mix of rough and smooth darkly stained timbers contrast with crisp white cabinetry

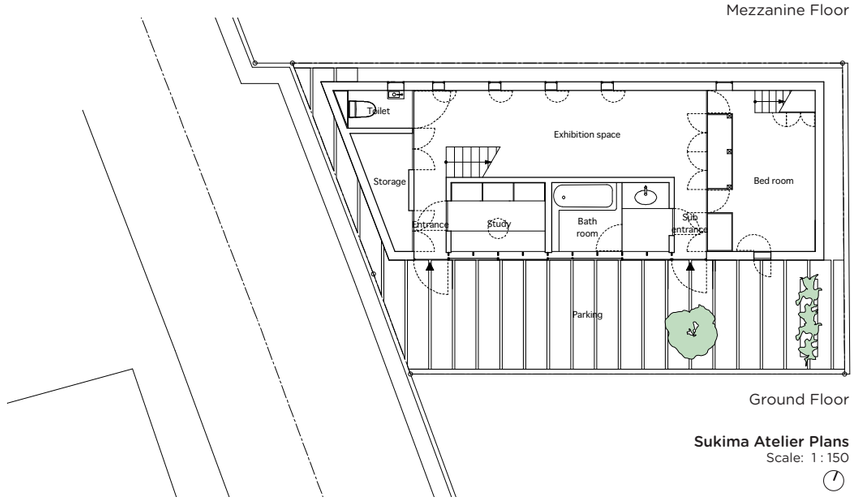
When asked, Makiko agrees that despite its contemporary aesthetic, there are elements in the architecture that honour the traditional Japanese house. The use of timber remains important. Spaces are interconnecting, and designed to be flexible, or serve dual functions. The links to nature are still very significant - light, air, and visual connections between internal and external spaces. However, the house also responds to a very contemporary set of requirements, and is a reflection of the shifts in Japan's housing culture. It facilitates varying degrees of intimacy, from the open central gallery space through to the protected pocket of privacy that is the house's bedroom. Despite its size it demands more of itself spatially, allowing a variety of functions and experiences without drawing distinct boundaries. Sukima Atelier reimagines a way of life, mirroring the experience of home life with that of life in the city.



First Floor



Mezzanine Floor



Ground Floor

Sukima Atelier Plans
Scale: 1 : 150

iv Encouraging Socialisation

Japan continues to see a rise in the number of single-person households. As of 2010, these exceeded 30% across all Japanese dwellings, surpassing “couples with children” to become the dominant household group. [1] This trend towards isolated living is related to a number of shifts in Japan’s social culture. The number of multi-generational households has declined, despite a rapidly ageing population. In 1975, more than half of those over the age of 65 lived in a multi-generation household. Now, this household group equates to only 16% of over 65 year olds, with almost 25% living alone. [2] However, the growth of independent living is not just confined to the elderly. Shifts in the lifestyle priorities of young adults have also influenced the housing culture. Young professionals are choosing to delay family formation in order to seek higher education and focus on their careers. As a result, Japan now faces an escalating issue of social isolation amongst its citizens.

In Japan’s major cities such as Tokyo - where single-person households are approaching 50% of the market [3] - options are being explored to encourage socialisation in both new and existing housing stock. Given space is a costly premium, and noting the wasteful repetition of utilities and services across each individual dwelling (fixtures, fittings, furniture, and appliances), one of the emerging solutions is shared living. There are a number of projects in Tokyo that have taken this concept and applied it to an existing family house or apartment, renting out the individual bedrooms. However, this next project has been labelled the first purpose-built share house in the city.

Located in a quiet, residential back street within Tokyo’s central district of Shinjuku, about five minutes walk from Kagurazaka Station, is Share Yaraicho. The project was co-designed by Satoko Shinohara (Spatial Design Studio) and one of the building’s current tenants, Ayano Uchimura (A Studio). Satoko is the wife of fellow architect Kengo Kuma, and together they own and operate the building. I have arranged to meet with their son Taichi, who too is an architect and lives in the building. The experimental project was seen as an opportunity to tackle two key concerns: it was conceived as a response to the growing need for socialisation in Japan’s housing culture, while also reflecting sensitivity towards the natural environment, and one’s responsibility to live more sustainably.

Energy performance and efficiency are renewed concerns for Japan. The 2011 earthquake and tsunami, which resulted in the nuclear plant disaster in Fukushima, have heightened the country’s anxieties over energy security. The forced closure of several nuclear reactors has left major cities such as Tokyo with little choice but to increase dependence on fossil fuels. The shift back to coal has triggered a rise in energy costs, and affected the country’s commitments to reduce greenhouse gas emissions. [4] Therefore, efforts are being made to improve the thermal performance and embodied energy of new buildings.

A translucent plastic skin is stretched across the front facade of Share Yaraicho, with visitors entering the house via a zip secured doorway

The front facade of Share Yaraicho is distinct amongst its neighbours. Inset from a thin edge of galvanised steel plate is stretched the building's translucent plastic skin, held in place with a nylon rope-stitched edge. Two of the corners have been cut away to allow for glazed openings, yet entry to the building is via a vertical zip door sewn into the plastic and secured with a padlock. As we walk through the tent flap entrance, Taichi "checks in" by moving a small magnetic yellow triangle inscribed with the letter "T", shifting its position on the wall from "OUT" to "IN". He explains that when living in a multi-level share house such as this with nine other people, it's nice to be able to work out who's out and who's at home as you enter and leave. Inside the fabric wall, the building's entrance hall stands three-storeys tall. Partitioned off along the left-hand side wall are two of the house's private bedrooms. Directly ahead, beyond the central stair, is the building's shared bathroom and laundry. The upper floors are set back from the front facade and clad in translucent, corrugated, polycarbonate sheeting. The entrance hall itself doubles as a communal workshop for the building's residents; it is littered with woodworking tools, plywood off-cuts, and half-built pieces of plywood furniture.

As we walk towards the minimalist, painted metal staircase, Taichi explains the concept for the building's structure. Designed to accommodate seven private bedrooms, each roughly 10-12m^2, along with a number of larger communal spaces, the building was conceived as four floating boxes within an exterior shell. The first floor hovers above the roof of the two ground floor bedrooms, allowing the void space to be used for storage. Likewise, the second floor bedrooms are four steps up from the kitchen area, allowing the floor to carry through and serve as a shallow storage space. Aside from a small toilet room on the first floor, all residents share the ground floor bathroom. Separated from the entrance/workshop area by the stair, the bathroom offers separate toilet and shower cubicles, a washing machine and dryer stack, and a long narrow vanity with multiple basins. The original design had a door at the back of the bathroom, leading to small outdoor courtyard. However, recent modifications now see this door access a second shower cubicle - a small, lightweight addition, built directly against the back wall of the house.

Travelling upstairs, we arrive at the first floor landing. Everything here is raw plywood: the floor, the walls, the ceiling, and even a bookcase that spans the end wall. Surrounding the stair void, which rises to the second level, five plywood doors give access to four bedrooms and a toilet. Taichi shows me his room, a mix of plasterboard and plywood, with its far wall clad in the polycarbonate sheeting seen from downstairs, bathing the room with daylight. We then proceed upstairs to the communal kitchen and living area. Again plywood dominates the space, lining the floor, ceiling, and walls of the adjacent bedroom pod. Even the furniture is plywood. A large, low table on wheels, fits neatly in the storage void beneath the bedroom floor, and can be rolled out when sharing meals or entertaining guests. Across the front of the living area, a long bench and open backed shelving unit accommodates books and a television, while also acting as a safety barrier when the pivoting polycarbonate wall panels are open, allowing a visual link to the entrance hall below. In the kitchen, there are few cupboards offering storage; heavily stocked open shelving and limited bench space appear to impede functionality, given the number of people who share the space.

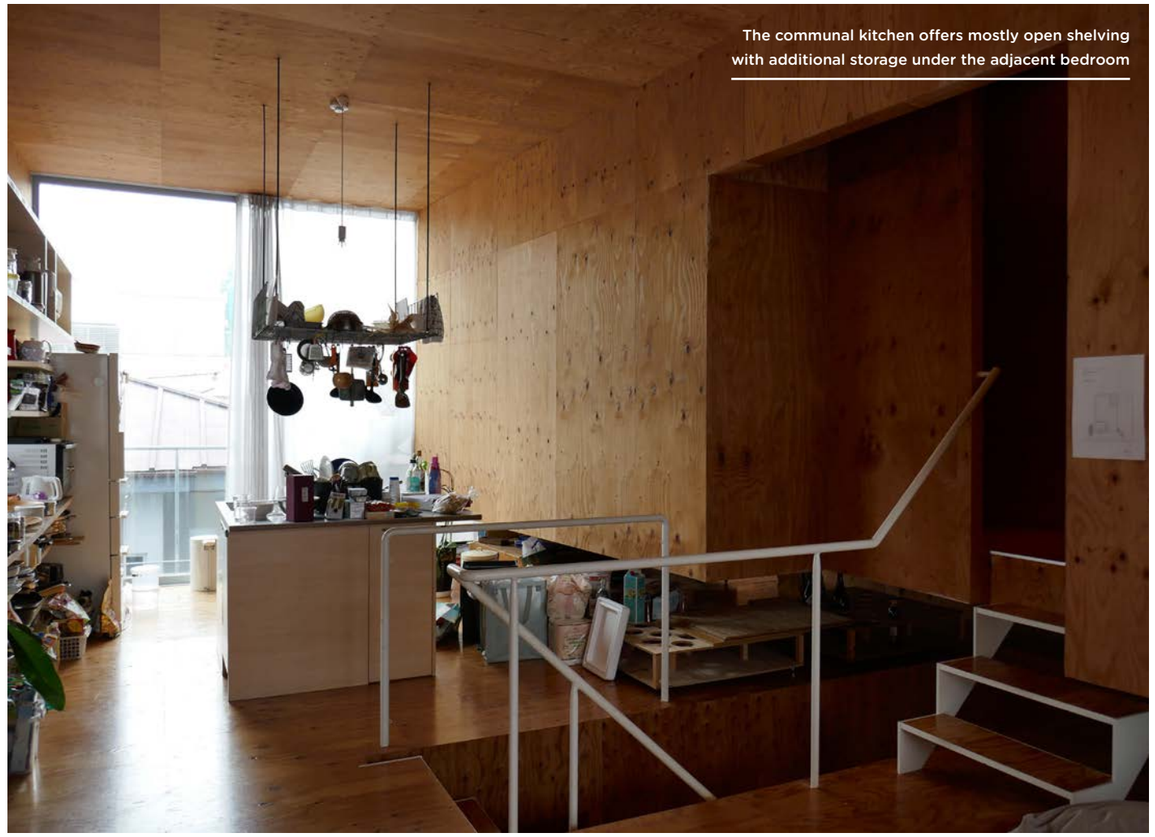
One of the house's hidden highlights is the communal rooftop. Accessed off a glazed sliding door in the kitchen via another minimalist (in reference to the provision of safety rails) external staircase, the rooftop is half terrace and half planted garden. It offers wrap-around views of the surrounding neighbourhood, and provides an alternate area for residents to entertain guests, or simply retreat by themselves. While on the roof, Taichi tells me that a second share house project is currently in design development for a site down the road. However, this new project will be bigger, and is looking at catering to different household types, not just single-person dwellers. He admits that striking the right balance of private and shared utilities for each of the different user groups will be one of the key design challenges in the new project.

A 'minimalist' steel stair connects each floor of the house. The first floor landing gives access to four bedrooms (including 1 guest room) and a toilet

The entrance hall doubles as a workshop area for the residents and is stocked with plywood off-cuts

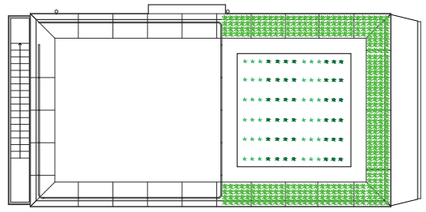
Each bedroom is small, finished in a mix of plywood and plasterboard, and flooded with natural daylight

The communal living area is entirely plywood, including custom furniture built by the residents

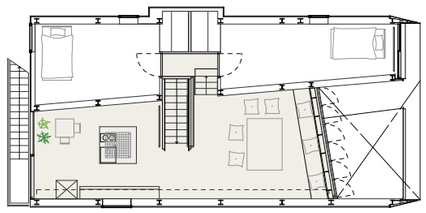


The communal kitchen offers mostly open shelving with additional storage under the adjacent bedroom

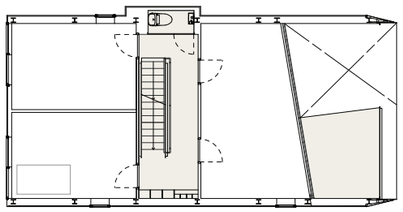
The building's rooftop is half planted garden and half communal terrace which offers an incredible 360° view of the surrounding neighbourhood



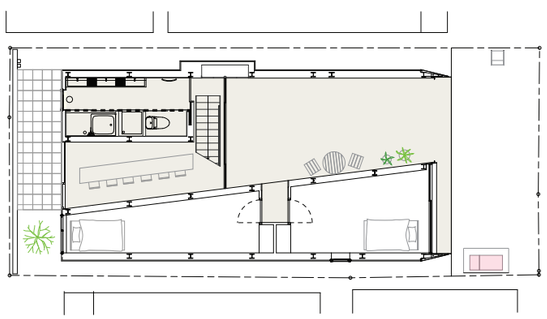
Third Floor



Second Floor

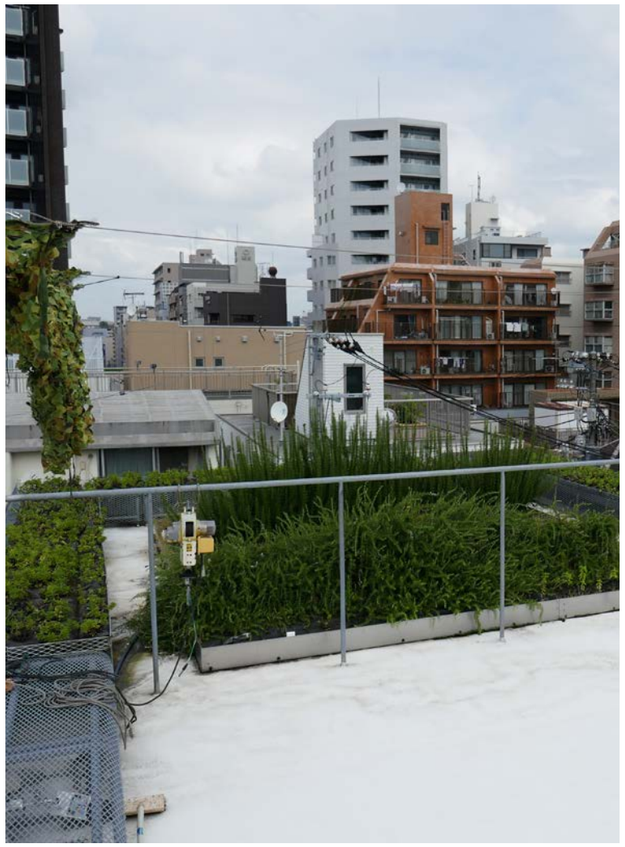


First Floor



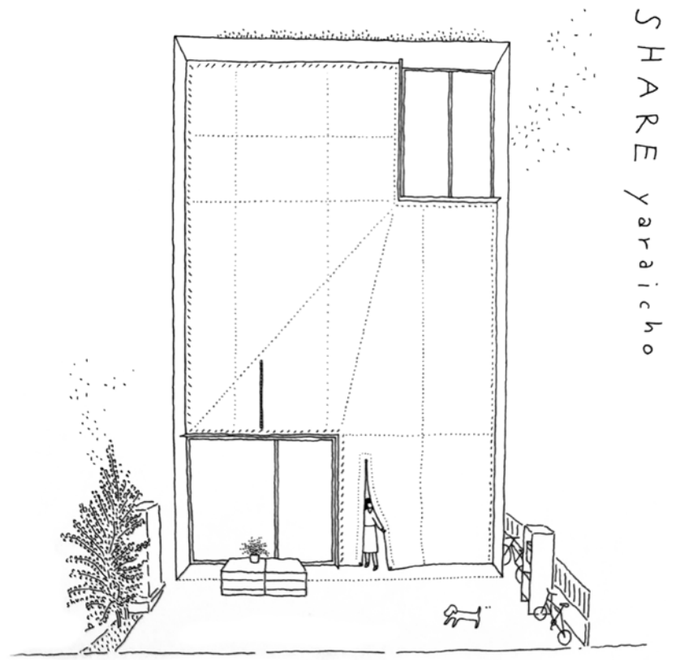
Ground Floor

Share Yaraicho Plans
Scale: 1 : 200



At present, Share Yaraicho hosts ten residents. Seven occupy the original bedrooms, two inhabit guest rooms, and one resides in a small marquee tent installed on the roof of the front, ground floor bedroom. While each of the original bedrooms offered equivalent floor areas, their spatial proportions varied considerably, making some more economical than others. Taichi's room, which ran across the front half of the first floor, has since been split in two, and a door added to service one of the two guest rooms. These spaces were introduced for short-term tenants, typically used by guests or as accommodation for international visitors during an internship at one of Taichi's parents' architectural practices. The second guest room is located on the ground floor, nestled between the shared bathroom and back bedroom, which originally served as a communal study space, and is now made private by a heavy green curtain. The marquee, I am told, is only temporary - a place for Taichi's cousin to stay until he can find alternative accommodation nearby. I will admit the house appears somewhat overrun, and this I feel is a consequence of its exceeded occupancy, despite the installation of a second shower. However, there are a number of interesting design ideas here, both in terms of the allocation of space and the building's sparing use of materials. There is still much to learn from this project.

[1] Richard Ronald and Oana Druta, "How Changes in Housing, Homes and Households are Reshaping Urban Japan," ARI Working Paper, No. 249 (March 2016): p. 9, accessed July 10, 2016, https://ari.nus.edu.sg/Publication/FilterByType/WP
[2] Ronald and Druta, "Changes in Housing." p. 12
[3] Ronald and Druta, "Changes in Housing." p. 14
[4] Vlado Vivoda, "Japan's Energy Security Predicament Post-Fukushima," *Energy Policy* 46 (2012): p. 135, accessed January 9, 2017, doi: 10.1016/j.enpol.2012.03.044



A sketch of the building's street elevation which was found pinned to the wall inside Share Yaraicho, presumably drawn by one of the project's architects

v Reduce / Reuse / Recycle

Most products and consumables today have a relatively short life expectancy. Some items are branded with “best before” or “use by” dates, while most technology is rendered obsolete faster than the average consumer can fully comprehend its utility. The hardware that supports our way of life is constantly undergoing refinement, being reprogrammed with upgrades, or refitted to increase functionality. In Japan, the same is true of houses. As previously mentioned, the average life expectancy of a dwelling is around 25 years, at which point they are deemed by the market to be virtually worthless. A Japanese house will begin to depreciate in value from the moment it is built - in the same way a car loses value the older it gets and the more it is driven. If a family outgrow their house’s utility and decide to sell it, the property is valued based on the size, proportion, and location of the land. When purchased, the existing house is swiftly demolished and replaced with a new structure, designed to sustain the needs of its new owners. The idea of owning a second-hand house in Japan has long been dismissed, until now.

Since peaking in 2010 at 128 million, Japan’s population has continued to decline gradually. This has already begun to have an impact on the country’s housing market, with the percentage of existing housing stock sitting empty at around 13%.* While the majority of investors note these uninhabited structures as without value, low income households have identified this area of the market as a new opportunity to achieve home ownership. If a property is valued with the understanding that the house itself will be demolished and replaced, then any buyer willing to retain the existing dwelling has a financial advantage. Put simply they get the house for free, and any necessary alterations are deemed cheaper than rebuilding anew. As a result, in the past five years there has been an increase in the number of residential renovations and refurbishments overseen by local architects for this new breed of client.

To view an example of such a project, I have arranged to meet with architect Kazuyasu Kochi, at his combined home and office in Zoshigaya. Upon entering his studio, Kazuyasu directs me down into a sunken meeting room. This is the lowest of four levels within the building, which he purchased and then renovated himself to accommodate both his architecture practice and family home. Kazuyasu explains that the original timber framed house was 40 years old when he bought the property, and he only had to pay for the land (about 63m^2); the house itself was free. However, to save money he came up with a design that largely retained the existing building and its structure, while improving its functionality and amenity.

From the street, it reads as a recently built contemporary house. The existing building has been disguised behind a secondary skin of white corrugated polycarbonate, which wraps up over the roof, filtering daylight and giving privacy to the existing windows behind. A narrow steel stair runs up in between the original and new facades,

Looking to save money architect Kazuyasu Kochi reinvented this forty year old house to serve as both his family home and architecture studio in Tokyo

providing direct access to the residence above, and neatly separating the functions of office and home. Despite its small footprint of 36m^2, the building offers almost 90m^2 of floor area. At ground level, the house's existing partitions have been removed to allow for the open plan office. Adjacent to the entrance, the original internal stair has been removed and the floor lowered 1.6m to carve out the small meeting room where we currently sit. At this level the ceiling height is 4m, and looking up you can still see the cut-out in the floor above where the stair once was. It is now covered in glass, and provides the only visual link between the office and dwelling above.

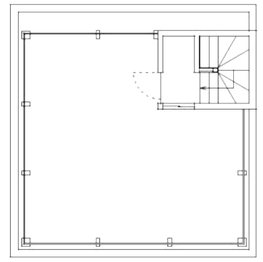
In discussing some of his recent projects Kazuyasu shares his thoughts on the emerging trends within Japan's housing culture. The struggle for home ownership is still very real in Tokyo and for many it requires a willingness to compromise. For Kazuyasu and his family - his wife and young daughter - integrating his architectural studio within the design of their home, and utilising as much of the existing building as possible, allowed him to strike a balance between amenity and affordability. This is not the first house renovation Kazuyasu has worked on during his career, and he believes they will become more common as time goes on. Reflecting on his work over the past 30 years, since establishing his architectural practice, he identifies a central theme of connectivity - both spatial and functional. For decades, as Japan's population continued to grow, residential architecture was focused on dividing spaces and trying to ensure everyone had their own little pocket of privacy. However, with the population now in decline, and the shift continuing away from multi-generational housing, Kazuyasu believes that architecture should strive to unite rather than divide individuals and families. Japan's rise in single-person households and the growing financial inequalities between generations call for alternative approaches to housing that better support interconnectivity.

Kazuyasu offers to take me on a tour of the house itself. Following him back up to the office area, via the steep plywood steps that double as open shelf storage, we exit outside to the street and then head upstairs to the house proper. Entering through a sliding glass door, the house's lower level is a combined living room, dining room, and kitchen, with utilities located at the rear along with a stair that leads to the bedroom level above. The house's original windows provide ample daylight, improved by the fact that the staircase, which previously divided the space in two and connected this floor with the level below, has been removed. While most of the existing internal wall partitions have also been removed and a new timber floor installed, some evidence of the house's previous life can still be found. The timber joists of the floor above are left exposed, along with two timber posts that punch through the new floor where the stair once was. All the old notches remain visible, and the timber is painted white to match the perimeter walls. Adjacent to the kitchen, we stand at the edge of the glazed square cut-out in the floor and peer down into the office below. Kazuyasu admits it took him time to feel comfortable walking across the clear sheet of glass, but from a design perspective it acts as both a reminder of the old stair void and as a passive form of communication between the building's two distinct functions.

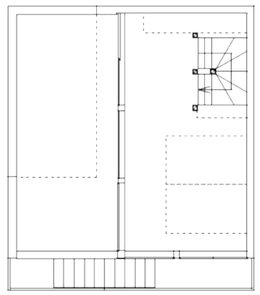
One corner of the office has been lowered to serve as a small meeting room, while a glass panel in the ceiling connects the office to the house above

Byera Hadley Travelling Scholarships Journal Series

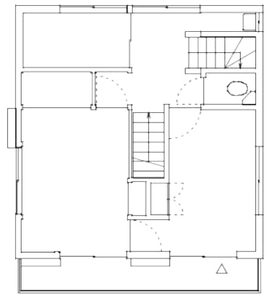
- **Half of the existing roof terrace has been enclosed to accommodate the house's only bedroom**
- **In the living area the existing timber structure has been retained, while a glass panel in the floor marks the location of the original stair void**



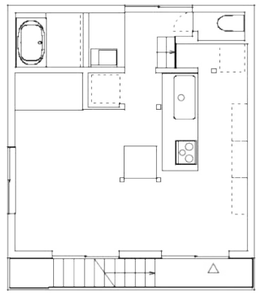
Second Floor



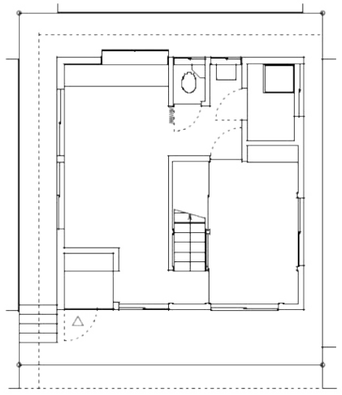
Second Floor



First Floor

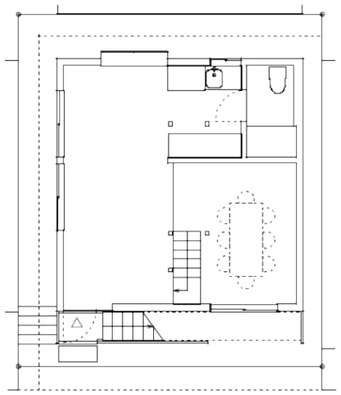


First Floor



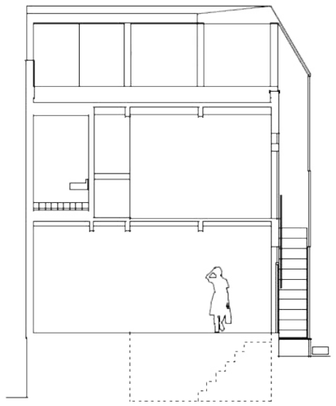
Ground Floor

Original House Plans
Scale: 1 : 150



Ground Floor

Renovated House Plans
Scale: 1 : 150



Renovated House Cross Section
Scale: 1 : 150

Taking the rear stairs to the top level we enter the house's only bedroom, which all three family members currently share. Originally this stair led to a rooftop terrace. However, in his renovation Kazuyasu has managed to squeeze in an additional level here, admittedly with a very low ceiling height of 1.9m. Now half of the terrace is internal space, having been split down the middle from front to back. Outside on the terrace there are partial views out over the surrounding rooftops, and from the front edge you can look down over the stair between the building's old and new skins. What's impressive here is the level of privacy and the disconnection one feels from the street. The building's new skin wraps up over the roof of the bedroom pod and acts as a partial canopy for the outdoor terrace, shielding it from the elements and restricting the sightlines of any overlooking neighbours. The bedroom itself is small, with two mattresses laid directly on the timber floor, side by side. Kazuyasu appreciates this sleeping arrangement will only work for another few years, and more generally that small changes will need to be made to the house progressively as his daughter gets older. However, this is representative of his original approach to the building, and he is confident that with the occasional adjustment the house will continue to serve his family well.

* In my discussion with architect Yasuhiro Yamashita (Atelier Tekuto) he indicated around 13% of Japan's existing housing stock was currently empty as a result of the country's declining population. However, it is my assumption that the majority of these properties exist outside the major cities in Japan's rural communities. The Tokyo prefecture, which equates to approximately 11% of Japan's overall population, still retains the highest annual growth rate of the country's 47 prefectures. However, as of 2014, only eight of these experienced net population growth.

Source: Matthew Linley, "A new look at Japan's most daunting challenge: Population decline," *The Interpreter*, April 17, 2014, accessed February 14, 2017, https://www.lowyinstitute.org/the-interpreter/new-look-japans-most-daunting-challenge-population-decline

A translucent secondary skin wraps up over the existing building, concealing the external stair and providing privacy for the windows and roof terrace

vi Starter Homes for City Makers

While there is an overall global trend of urban migration, large metropolises such as London and New York are starting to observe their millennial residents leave in search of a more supportive and affordable living experience. With young professionals unable to obtain the security of home ownership in these major cities, their options are: a) continue to rent indefinitely, b) buy outside the city and endure a long commute, or c) relocate to a city that offers affordable housing options closer to employment and transport. In London, the lack of affordable housing saw more than 128,000 young adults - those aged 21-40 years old - leave the city within a year (2014-15). [1] This loss of young talent has started to raise productivity concerns. Many local businesses feel their ability to recruit and retain workers is being increasingly impeded by rising housing costs and the need for employees to commute long distances. Rental costs in London currently equate to more than half of the average gross earnings, and rising commuting costs continue to place additional pressures on the city's young workforce. Thankfully this trend has not emerged unnoticed and there are those looking to tackle the problem.

Pocket is a London based development company that seeks to provide affordable inner city housing options for first-time home owners. Its aim is to support London's "city makers" - young professionals such as nurses, teachers, designers, engineers, and those working in the science and technology sectors, whom each provide services essential to the city's growth. Today, many young adults in these occupations find themselves trapped in the gap between social housing and home ownership. Their earnings are too high for them to qualify for social housing, yet too low to compete with buyers on the open market. CEO Marc Vlessing established Pocket in 2010 to cater to this expanding middle market, and began locking down sites within inner city boroughs desperate to reduce their loss of young talent. Pocket offer compact one-bedroom units for sale, typically 20% or more below the open market value. To date they have built and sold some 250 homes, and have many more in the pipeline. Yet with an estimated 1.5 million first-time buyers in London, and some 32,000 aspiring owners already registered with Pocket, the competition is fierce.

To better understand Pocket's approach, I have arranged to meet with Lucian Smithers at one of their early development sites in Camden. Lucian is Director of Sales and Marketing at Pocket, and we meet inside one of the project's ground floor units, currently used as a display home. To give context to Pocket's approach, Lucian begins by providing some background information regarding London's housing crisis, recounted here along with my own interjections. In the centuries leading up to the mid 1800s, London's gradual population growth had little impact on the city's overall size. While the density increased, it was not until 1862, with the introduction of railways and the electrification of the underground tube, that the city began to expand outwards. London's growth quickly became unstable,

Large living room windows act as Juliet balconies overlooking the shared central courtyard at Pocket's Marcon Place development in Hackney

and legislators began pushing for limits to be imposed to halt the sprawl. Notions of establishing a metropolitan “green belt” were repeatedly tabled for several decades, the first of which was formally proposed by the Greater London Regional Planning Committee in 1935.

The country’s house production peaked in 1967 with some 350,000 new homes, of which 150,000 were built by local authorities and the remainder financed by private enterprise.[2] Today, despite renewed efforts by city planners to encourage an increase in supply, an approximate 110,000 new homes (annually) meet less than half of the country’s current (and rising) demand.[3] In London alone, based on projected growth rates, as many as 40,000 new homes each year for the next 20 years are required, excluding an additional 9,000 new homes annually across the same period to absorb latent demand.[4] According to the Greater London Authority at least 50% of this new stock needs to be developed as affordable housing.[5] The primary suppliers of new housing in the UK are large private developers and housing associations, which respectively hold an approximate 80:20 split of the market. In an interview for the UK’s Financial Times, Marc Vlessing recalled an early observation which led to the establishment of Pocket’s agenda. He noticed an influx of infill site developments across the city, all with exactly 14 (often oversized) apartments. This he attributed to legislation requiring all developments with 15 units or more to include a percentage of affordable or social housing. Determined to draw attention to the perils associated with insufficient housing equality within inner-city communities, Pocket set out to redefine the existing model and provide a product that catered to first-time buyers rather than pander to investors.

As Lucian explains, the sale of a Pocket home is restricted to owner-occupiers who already live and/or work in the same borough as the development, and who have a combined household income less than the affordable housing benchmark set by the city (currently £90,000). There are slight variations with each development, as buyer eligibility preferences are weighted based on agreements made with the local authority at the time of the development’s approval. Typically preference is given to those employed by the military, the NHS (National Health Service), and civil service departments. The dwelling must be purchased outright, as shared ownership schemes are not accepted, although some units are eligible for Help to Buy government assistance. However, a larger deposit will improve your chances of selection, with some owners opting to seek financial assistance from their family. If you are a current registered owner of another property at the time of your application then you aren’t eligible to purchase a Pocket home.

The first step in successfully obtaining a Pocket home is registering your interest online. The application asks you to provide information regarding your place of current employment, occupation, and annual salary, along with the sum of your deposit. Once registered on the MyPocket database you will be sent notifications of new projects for which you are eligible. You can apply for these by submitting an independent affordability assessment to arrange a meeting with one of Pocket’s representatives at their display home, before lodging an expression of interest. The allocation of units is by lottery, with the number of tickets assigned to each applicant based on their circumstances and subject to the agreed preferences of the local authority. Pocket also assign extra tickets based on salary, to ensure those in greater need of the discounted market price have a better chance of being selected.

The same eligibility requirements that apply to each Pocket home applicant remain attached to the property in perpetuity. The development approval has been granted on the proviso that the units will remain affordable owner-occupied dwellings. Therefore, there are restrictions and limitations when it comes to selling your home, or renting it out if your circumstances change. Subletting of Pocket homes must be negotiated with the building’s managing agent in advance, so approval can be sought from the local authority. Subletting is typically limited to a temporary period, and owners are obligated to offer rent at a discounted rate and prioritise tenants based on Pocket’s eligibility criteria. Selling your Pocket home requires a valuation from a qualified chartered surveyor, which you

Digital representation of Pocket’s upcoming development at Gainsford Road in Waltham Forest

Digital representation of Pocket’s upcoming development at Juxon & Sail Street in Lambeth

present to the managing agent informing them of your decision to sell. Pocket will then consult with the local authority to establish an acceptable price, and assist in marketing the sale on your behalf. Again the home is required to be offered to buyers who meet the agreed eligibility criteria for the original development.

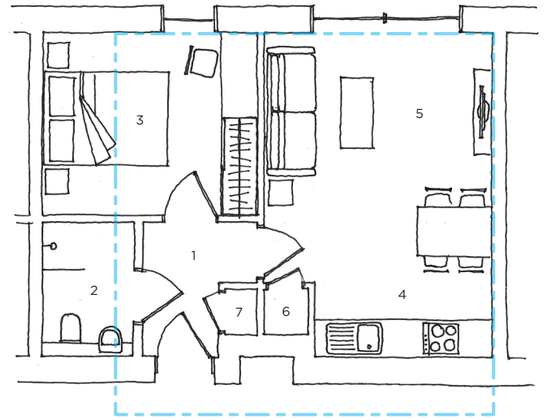
The challenge, given London's current real estate climate, is maintaining the development's affordability. While a Pocket home is originally sold at a minimum of 20% below the current average market rate for its area, there is little to stop its appreciation both during construction and throughout the initial years of ownership. The upfront cost reductions that the "compact" model allows (higher density and reduced developer profit margin), tend to swiftly evaporate in a resale market which also offers studios and one-bedroom units built prior to the introduction of legislated floor space minimums. Many of Pocket's developments are located on infill or underutilised sites, sold at a reduced rate ahead of larger public renewal projects, infrastructure investments, and regeneration efforts. Speaking with one resident, who owns a unit in Pocket's Marcon Place development in Hackney, she concluded that despite her large deposit (which she credits for the success of her application), if 18 months ago her home was worth what it is now she would have been unable to afford it. In this case, recent upgrades to the area's transport infrastructure have spurred a wave of new private investments in housing, increasing the density and pushing up land values. I include these concerns, not to discredit the work Pocket is doing, but to reinforce the wider issues. Until we can collectively end the imbalance between housing supply and demand, and understand the planning relationship between the provision of housing and employment opportunities, the affordability crisis will continue to derail our good intentions.

Pocket's developments vary in size, but average around 40-50 units. In a traditional apartment building there is typically a mix of unit types, and the one-bedroom units are often designed to fit into the leftover floor space between larger dwellings. However, Pocket's projects are predominantly one-bedroom units, all uniform in proportion, which simplifies the floor plate. With the size and shape of each unit standardised, the design challenge is to arrive at the most economical arrangement of units for each specific site. Pocket believes they have uncovered the most spatially efficient layout of a one-bedroom unit, at 38m^2, without compromising on amenity or comfort. In addition to the private dwelling, all developments have a shared communal garden and/or external courtyard. On site car parking is not provided, which helps to reduce the overall development cost. However, sites are selected because of their proximity to public transport infrastructure, and secure bicycle storage is provided for residents.

Upon entering a Pocket home, you stand within a short central corridor. Immediately to one side is the bathroom, and on the other side a storage/utility cupboard, which will accommodate a washing machine. At the far end of the corridor is the doorway into the bedroom. Between developments bedroom dimensions vary slightly, yet at a minimum it will accommodate a double bed with side tables. Every bedroom has a large full height window, typically on a tilt and turn mechanism for ventilation and easy cleaning. A recessed alcove adjacent to the bedroom door provides wardrobe space, although Pocket is considering phasing out the provision of built-in wardrobes, allowing owners to tailor the space to suit their own needs once they move in. Back in the corridor, and opposite the bathroom, is a door into the living area. The space runs the full depth of the apartment, with another full height window along one side, and the kitchen tucked away at the other end. The current design layout has the kitchen arranged as two short benches running along the side walls, with the sink on one side and a cook-top opposite. However, the unit I visited was based on an older version of the plan, with a single galley kitchen along the back wall facing out into the living space. While the floor area of the two plans is identical, the updated version offers a deeper and narrower overall configuration, which has spatial advantages when arranged in series on site, given its reduced width. I was impressed by how spacious and generous the area felt, and in comparing the two plans don't believe the changes have compromised this.

Legend

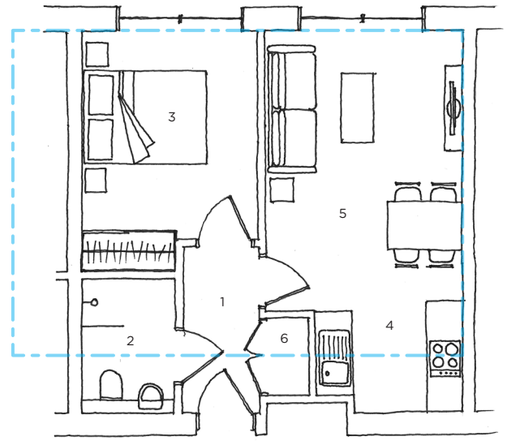
1 Entrance Hall
2 Bathroom
3 Bedroom
4 Kitchen/Dining Area
5 Living Area
6 Laundry (Washer/Dryer)
7 Storage Cupboard



Original Layout Plan
(approx. 38m^2)

Legend

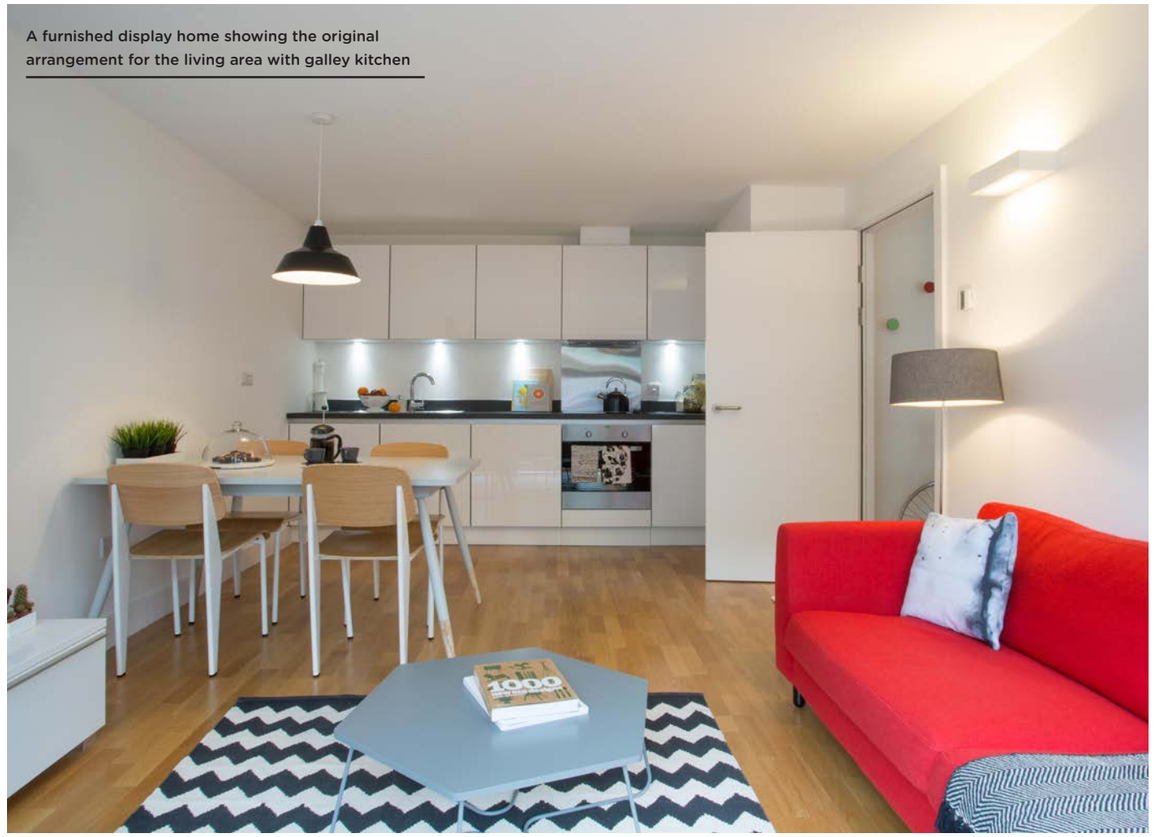
1 Entrance Hall
2 Bathroom
3 Bedroom
4 Kitchen Area
5 Living/Dining Area
6 Laundry (Washer/Dryer) & Storage



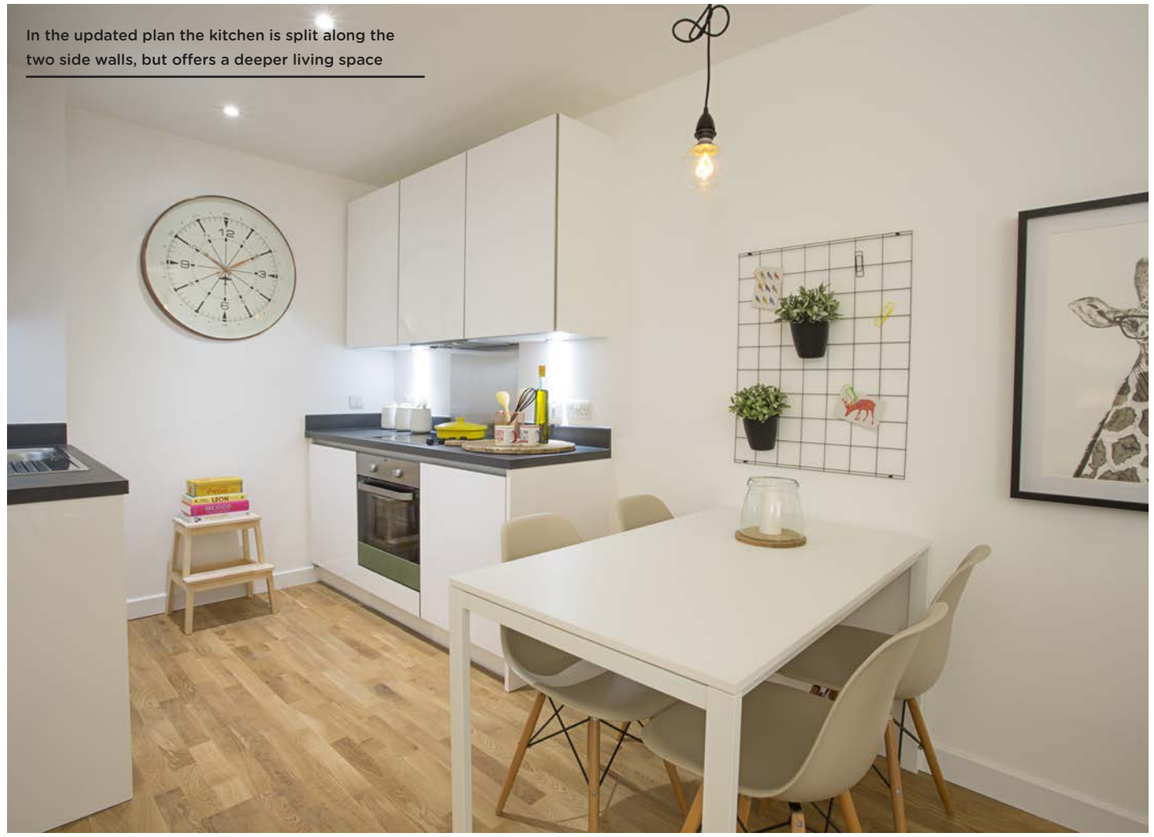
Updated Layout Plan
(approx. 38m^2)

Typical Pocket Home Layout Plans
Scale: 1 : 100

(dimensions may vary with each unit)



A furnished display home showing the original arrangement for the living area with galley kitchen



In the updated plan the kitchen is split along the two side walls, but offers a deeper living space

Keen to continue experimenting and perfecting the Pocket model into the future, Lucian informs me that work was completed yesterday on the first of four projects being realised with prefabricated modular construction. He indicates that banks are more hesitant to lend on 'prefab' developments, but this is improving as the technologies and products become more mainstream. Obviously the level of quality control available within the factory exceeds the typical conditions of a building site, resulting in a higher quality finished product. However, at present the use of prefabricated modules results in a slightly more expensive project per unit. Pocket is still in the process of uncovering the right economic balance, but the aim is to reduce the number of man hours on site, and consequently speed up production of their compact starter homes.

[1] Robert Leeming, "Millennials flee London in their droves," *HR Review*, February 24, 2016, accessed January 16, 2017, http://www.hrreview.co.uk/hr-news/recruitment/millennials-flee-london-in-their-droves/61451
[2] Pete Jeffereys et al., *Building the Homes We Need - A Programme for the 2015 Government* (London: KPMG, 2014), pp. 6-7
[3] Jeffereys et al., *Building the Homes We Need*, p. 4
[4] Claire Bennie, *New Ideas for Housing London* (London: New London Architecture, 2015), p. 5
[5] Bennie, *New Ideas for Housing London*, p. 5

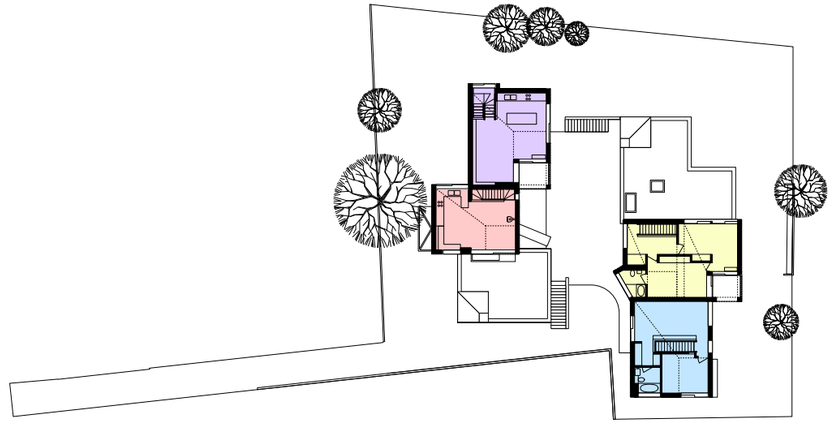
vii An Intentional Community

Located in the creative commune known as Perseverance Works, off Kingsland Road in Shoreditch, are the offices of Henley Halebrown Architects. Keen to discuss one of their recent housing schemes, I am set to meet with project architect Neil Rodgers. The project is named Copper Lane, and has been branded the first purpose-built co-housing development in London. Completed in 2014, the building contains six individual dwellings, which each share access to a range of communal spaces and facilities. Entering the meeting room with a printed set of plans and a series of photographs for reference, Neil begins by providing some insight into the site's history. Accessed by a long narrow driveway off Springdale Road, the site was originally used as a nursery and shares a boundary with some 20 different residential lots. The land was briefly owned by the Pentecostal Church, who were unsuccessful in obtaining development consent and later sold it to its current owners. Initially the project had two clients: the first was a young couple, and the second a designer who lived alone. They in turn advertised, seeking other interested parties, and eventually formed the company Springdale Gardens Limited - an ode to the original nursery.

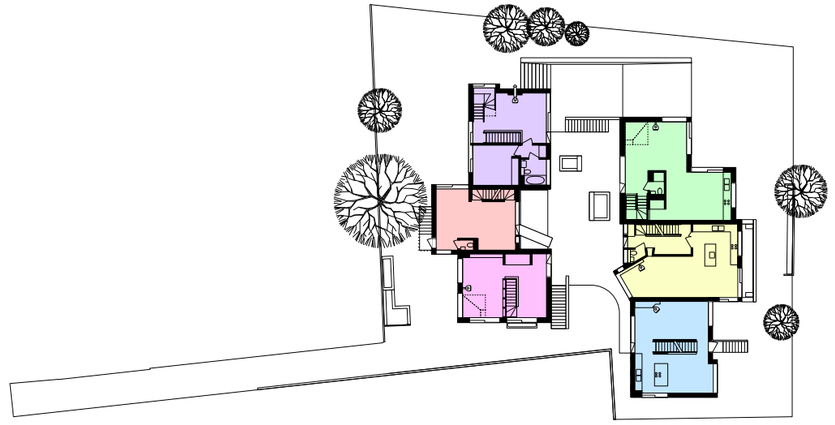
Together the group pooled their funds for the development, with a member of each prospective household listed as a director of the company. Working together with Neil, they originally developed a scheme with seven units. However, this proposal sat at the extreme limit of gross floor area for the site, and was deemed to overstretch resources and compromise some of the design's collective aspects. It was agreed that six dwellings would be a better fit. The plans were reworked, and the final design accommodated 4 three-bedroom flats and 2 one-bedroom flats. The company retains a freehold over the entire site, including all the communal spaces, and each unit operates on a 100 year lease from the company.

Each unit varies in size and configuration, ranging from as little as 70m^2 up to 155m^2. Currently all four of the three-bedroom homes accommodate families with two children. Therefore, in their design it was important for each of these units to offer some flexibility. Referring to the plans, Neil indicates one owner's intention to convert the lower level of his home into a granny flat after his children move out. Of the 2 one-bedroom units, in one an additional room serves as a design studio, while in the other there is a small therapy/consultation room used by the owner (and occasionally another resident) to see patients. The units are clustered around a large central hall, enclosed at ground level, with an outdoor terrace above. All six dwellings have direct access to both of these spaces, which act as summer and winter entrances. The key concept driving the project was the aim of establishing an "intentional community", a design that encouraged collaboration and built ties with the local neighbourhood. In addition to providing access to each of the dwellings, the central hall supports a variety of communal functions, acting as an informal meeting room, yoga studio, theatre rehearsal space, or neighbourhood classroom. Neil recalls how during the design process this space was often discussed – it was never assigned a specific function, but all agreed it was key to ensuring the project's long-term success.

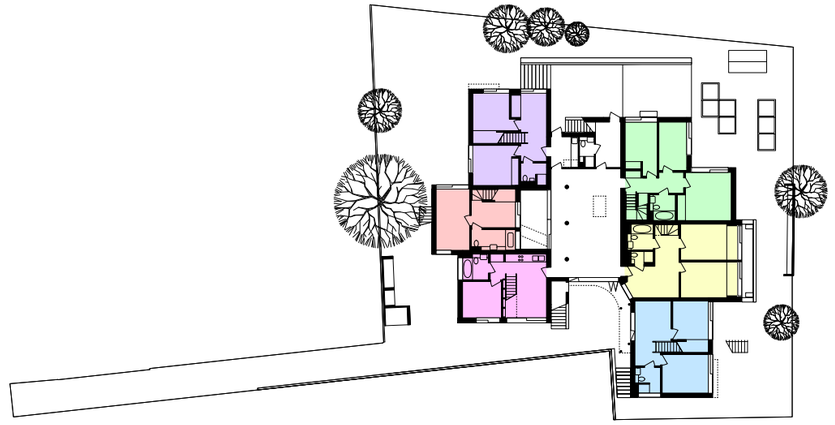
All six dwellings have direct access to the central outdoor terrace, which sits directly above the large communal hall at London's first co-housing project



First Floor



Upper Ground Floor



Lower Ground Floor

Copper Lane Co-Housing Plans
Scale: 1 : 500

A reserved material palette of pale brickwork and vertical timber cladding complements the building's unique setting and respects its many neighbours

Most of the challenges in designing a co-housing project of this scale are a consequence of having multiple clients. With Copper Lane, Neil and his colleagues were essentially designing six bespoke houses, each tailored to suit the needs and desires of their respective occupants. The main difficulty was keeping everything within the budget, and to do so standardised components and materials were used where possible. In most cases the clients were presented with a base option - for example a kitchen unit with selected finishes, or bathroom tiles and fixtures - which they could either proceed with, or opt out of and retain the cost to install their own specification at a later date. However, given each unit was configured differently, some elements such as the internal timber staircases had to be detailed individually to ensure their accuracy and finish.

One of the group's early and unanimous decisions, made to maximise their collective budget, was for the project not to include any on-site parking. The provision of resident parking was deemed inappropriate and unnecessary, given the site's narrow drive, limited size, and proximity to transport. Neil also explains how a design decision to sink the internal floor level 1.2m below the existing ground plain, with access via sunken courtyards, consequently reduced the cost of structural ground works. Piling was able to be avoided through the use of a raft slab, with the building's overall weight calculated as less than that of the earth taken away. The building's connection to its setting was seen as being very important. Despite each residence being arranged around the central communal hall, from within they re-orientate your focus outwards into the gardens. Stretched around the building's entire perimeter, none of the landscaped garden is considered private space. It offers a range of environments and play spaces, including a grassy mound and a communal vegetable garden.

Not having visited the project, I will limit my comments with regard to the success of its internal planning or aesthetic qualities. However, as an example of affordable housing it still displays a considered and tailored design, with its passive material palette of natural timber and brick. There is a level of refinement and quality rarely achieved on larger multi-residential projects, which lack a direct link between architect and future resident. Commendable also is the project's effort to minimise environmental impact, to ensure strong and long-term performance despite a restrictive budget. Each unit is equipped with floor heating and a 'whole-house' ventilation heat recovery system, which allows the building to achieve Level 4 under the city's sustainable housing legislation. The roof of the building is also fitted with solar collectors, while two areas (above each of the one-bedroom units) have been designed for planting. However, my primary interest in this project is directed towards the unique conditions offered by collective housing, and the impact a shared living environment can have on the size and affordability of one's private dwelling.

Neil indicates that the discussions around the project's collective spaces went back and forth throughout the design process. He and colleague Simon Henley were keen to maximise the number of shared facilities, voicing ideas of a communal dining room, laundry, office/library, or a guest bedroom, and asking their clients to consider the benefits of being able to collectively support each other with cleaning, shopping, gardening, and childcare. The aim was to conceive a building that facilitated a mutual support network for its residents. In the end, the shared facilities were whittled down to a communal laundry, a small workshop, the central hall with bookshelves for a neighbourhood library and kitchenette catering to community events, as well as the central roof terrace and surrounding gardens. Of interest to Neil, with each return visit, is witnessing the building's evolution through use. He recalls observing an initial hesitation from residents to inhabit or utilise the shared central hall. Yet as each household started to warm to their new environment and become more comfortable living in close proximity to one another, the building began to feel lived-in. On his last visit, two years after its completion, Neil was encouraged to see the concept fully realised and the building working for the benefit of its residents.

In sinking the building's lower floor 1.2m below ▸ ground level the upper floor also benefits from a stronger connection to the surrounding landscape

viii The Baugruppe Approach

Baugruppe - translated as “building group” - is a German term used to describe the recent renewal of self-built co-housing developments across cities such as Berlin and Hamburg. These projects are typically initiated by or with the help of a local architect, who co-ordinates a group of aspiring home owners, advising them on the purchase of a suitable site, overseeing the design, and facilitating any necessary building approvals. While the concept of co-operative housing in Europe isn’t new, this revival is driven by a lack of quality, affordable, inner city housing. In Berlin, the *baugruppe* approach is seen as a flow on effect of the government repealing a number of tax incentives for housing investors. As a result, many large private developers lost interest, with some looking for ways to cut corners or lower standards to retain their profit margins. With fewer projects and less investment in the housing market, architects began to look for new ways to acquire work. They collectively identified a growing market centred around young professionals and families looking to buy into a supportive, inner-city community for the long-term, and then proceeded to scout out potential sites for development.

Located south of the River Spree, at 50 Ritterstraße in Berlin’s suburb of Kreuzberg, is a project that beautifully embodies the merits of building as a *baugruppe*. Branded “R50” by its architects, this unique co-housing development has been skilfully designed to offer each of its owners a level of tailored comfort and long-term flexibility rarely achieved in multi-residential architecture. Completed in 2013, the building is the result of a design collaboration between the offices of Heide & von Beckerath and Ifau und Jesko Fezer. To discuss the development further, and examine the freedoms and challenges pertaining to the *baugruppe* approach, which helped craft its form and functionality, I have arranged to visit the project with one of its architects, Verena von Beckerath.

Upon meeting Verena, she comments that I am one of several architects from Australia to contact her office recently regarding their work on co-housing projects. Standing in front of the R50 building, she starts to explain the project’s history. It began as a six month design competition. The site was one of five underutilised plots owned by the city, each sold at the same time based on the merits of concept-based development proposals. Together with a project manager and their colleagues at Ifau und Jesko Fezer - several of whom reside in the building - Heide & von Beckerath established a building group, and began to develop a design strategy for the site. Verena points out that the streetscape is an eclectic mix of post war housing typologies, from the modernist apartment blocks of the 1950s, in their green parkland setting, to the densely constructed experimental housing developments of the 1980s. With the intention of adding to rather than isolating itself from its neighbourhood, the building group opted not to install a perimeter fence. The surrounding landscape meshes seamlessly with the neighbouring 1950s lots, site boundaries are ignored, and the public is free to walk around the site or use it as a

Residents access the building via a concrete ramp, which leads down into a covered area for bicycle parking and links a series of communal spaces

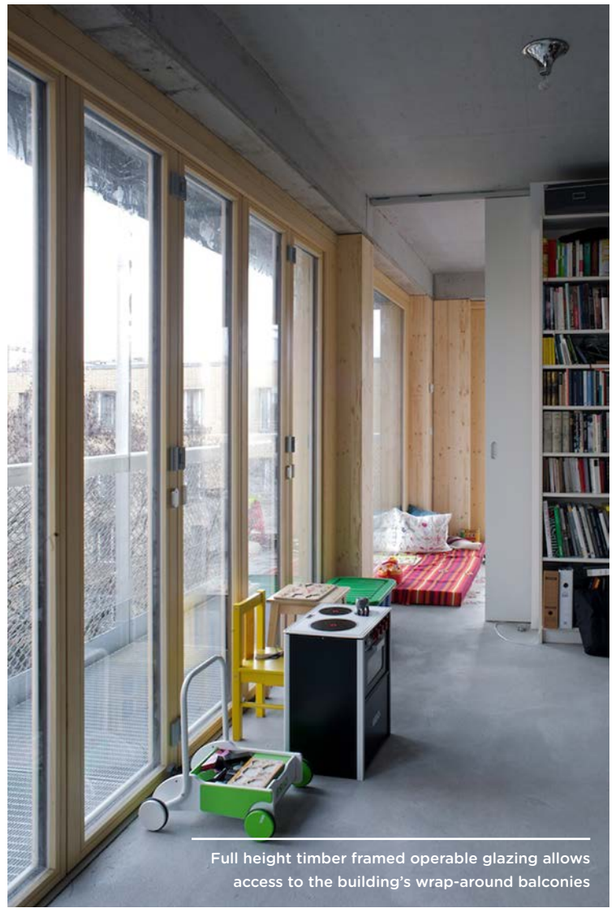
thoroughfare. The development generously gives space back to the public and encourages an open relationship between its residents and the local community.

A similar attitude is evident within the building itself. At first glance there are no obvious hints of separation. Divisions between private and communal spaces have been pared back with the aim of strengthening the relationships between residents. A total of 19 units are spread across the building's seven floors, with each unit sharing access to the sunken ground level and communal roof terrace. However, from the outside it is difficult to discern where one unit ends and the next begins as a result of the building's wrap-around balconies. Although only accessible to the occupants of units on that floor, there are no barriers separating each balcony into privately owned segments. Instead they are shared, providing an additional means of travel between rooms and apartments. The balconies cater to both chance meetings and planned gatherings, while offering a transitional layer between one's private home and its inherently public setting. What's critical to note here is the freedom and expanded opportunities available to the architects as a result of the owners being involved in the design process. As architects we can push for new approaches or alternative planning arrangements in the interest of more affordable and flexible housing solutions. However, within the traditional architect and private developer relationship they present as a risk - too far a departure from the tried and tested norms of the market. Being able to design an apartment building directly with the people who will live there opens the door to new possibilities and experimentation.

For R50, the zoning and setback requirements influenced the building's height, scale, and overall form. As Verena explains, the aim was to generate the most economical built volume. The building's structure is deliberately independent of the individual units. Concrete floor plates are stacked on columns concealed within the perimeter walls, with a central core providing lift and stair access to all floors. This allows for improved flexibility and the easy adaptation of each apartment, if and when their owner's living situation evolves, without impacting other floors. Because there are no discernible separation markers on the building's exterior facade, the internal tenancy walls can be shifted to suit the spatial requirements of residents without compromising the building's integrity. Currently, each unit is around 100m^2 and positioned so as to occupy at least one corner of the floor plate. The core has been pushed to the back half of the building, allowing two of the units to sit side by side at the front (street) end, and the third to wrap around the core at the rear. Internally, the layout of each unit differs, arranged around the needs of its owner.

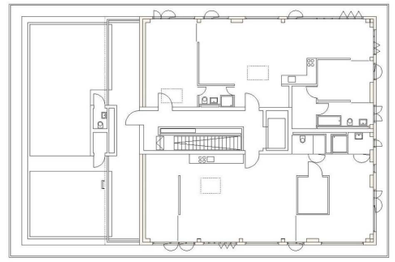
Verena indicates that units on higher floors, although more expensive, are typically preferred, given they offer greater privacy from the street and in some cases better views. However, with R50 additional effort was made to enhance the amenity of the lower floor apartments, including a direct access stair from each of the first floor units into the surrounding garden. In most *baugruppe* projects, the allocation of units occurs fairly early in the design process, with selection based on the order in which residents joined the building group. However, Verena notes their decision to wait as long as possible to assign specific units, which helped ensure everyone stayed invested in the overall design process. In the case of R50, following the building's completion, its residents drafted a manifesto outlining their collective expectations and the regulations by which they all agreed to live for the duration of their time living in the building.

Verena has arranged for us to visit one of the upper floor units, owned by two of her design collaborators for the project, Christoph Heinemann and Susanne Heiß from Ifau. We approach the building's entrance, walking down the concrete ramp which leads to the sunken ground level. The resident's entrance sits beneath a covered outdoor area for bicycle parking and adjacent to a set of glazed double doors which provide direct access into the building's double-height communal hall. Entering the building, I follow Verena up the exposed concrete stair to level five. Despite the rawness of the materials within the common areas, there is a level of refinement and sophistication embedded in the quality of each finish. The honesty of such craftsmanship and attention to detail bring an added layer of warmth and luxury, despite the project's restrictive budget.

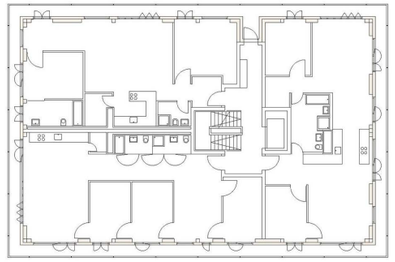


Full height timber framed operable glazing allows access to the building's wrap-around balconies

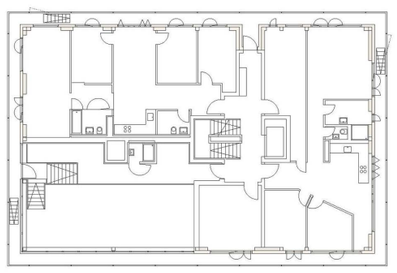
R50 Site Location Plan
NOT TO SCALE



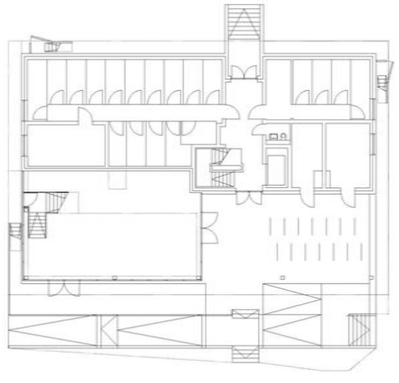
Seventh Floor



Fifth Floor



First Floor



Ground Floor

Selected Floor Plans
Scale: 1 : 500

Greeted by Susanne, we enter the unit and are led past a series of smaller rooms to the main living space. The room sits in the building's south east corner, with full height glazed openings along both perimeter walls offering an abundance of natural light. Again the material palette has been pared back, with the building's concrete floor slabs left exposed to serve as the finished floor and ceiling. The designed finish makes no attempt to hide the building's construction logic. The insulated timber panel system that makes up the building's facade translates through to the interior spaces, providing both the external and internal skin. Moving back along the corridor, Verena explains that during the design process a number of strategies were defined to control the development's overall cost. One example was in the bathrooms, where pre-finished panels were utilised instead of wall partitions and all the finishes standardised. In some cases a limited selection of options were available, but for the most part fixtures were kept consistent across all units. To further streamline the build, none of the kitchen joinery units were supplied as part of the development, but rather coordinated by the individual owners to suit personal needs and installed post occupancy.

What is tailored within the building's design is the layout and functionality of each unit. For Christoph and Susanne, the apartment was arranged around their needs and the needs of their two children. Of interest here is the deliberate inclusion of secondary connections between each room. There are no dead end spaces within the unit, as every room has more than one point of entry or exit. This was considered an important design feature for the family home, as it allows indirect supervision from one end of the house to the other, while providing acoustic separation and privacy when required.

Leaving the unit we continue upstairs to the top floor, which includes a communal winter garden and outdoor terrace. There is also a toilet and a small summer kitchen which cater for social gatherings hosted by the residents. From the terrace, which runs across the street end of the block, we admire the view out over the neighbourhood. Verena points to a commercial office building off in the distance inscribed with the word Postbank, which she says is scheduled to be converted into micro apartments.

Heading back down the stairs to the entrance level, we then enter the double-height communal hall. The space has a narrow mezzanine along one side, inclusive of a toilet and connected to a studio/guest room for short-stay visitors. The main hall has a variety of uses, and can be rented out by the wider community to host neighbourhood events. The space can also be accessed directly from the street, via a set of external steps which lead to a glazed door on the mezzanine level, linked to the main floor by an open concrete stair. Adjacent to the stair and under the mezzanine sits a galley kitchen unit. Behind this wall are a series of private storage lockers, each allocated to one of the apartments and accessed via the central circulation spine in the building's core. A communal laundry and small workshop are also located on this level.

Leaving the hall, Verena suggests I also visit one of their other co-housing projects. Heide & von Beckerath, in partnership with Ifau, are overseeing another *baugruppe* development not far from R50. This new project, which is currently under construction, is much more ambitious in scale with a total of 90 units. The building is located on the site of the historic *Blumengroßmarkt* (flower market) and stands opposite Berlin's Jewish Museum, designed by architect Daniel Libeskind. It appears the *baugruppe* movement will continue to gain momentum here in Berlin. However, understanding this approach also benefits conversations about the provision of more spatially flexible and socially responsive housing back home in Sydney.

The perimeter balconies provide an alternative means of access between different rooms and units

The communal hall caters towards a variety of events and can be rented by the local community

ix Self-Built Communities

At Moritzplatz in the Berlin suburb of Kreuzberg, the Prinsessinengarten (Princesses' Gardens) have made use of a large wasteland site left empty for over half a century. Co-founders of the project Robert Shaw and Marco Clausen first began working on the site in 2009, enlisting the help of friends and fellow activists to clear away the debris and establish the groundwork for a new transportable and organic urban farm. Seven years on, the garden is a thriving oasis for the neighbourhood, offering a place of community learning, engagement, and recreation. To its credit the project is self-sustainable. Rather than relying on public funding or private donations, it survives on a modest revenue stream from an on-site cafe and the sale of its produce. Residents are encouraged to participate in a variety of ways, either by volunteering to help maintain the gardens, participating in educational events, harvesting and buying their own produce, or simply spending time there and enjoying the quiet urban escape on offer. The gardens have brought together young and old, families of different nationalities and backgrounds, and helped to dissolve social tensions around wealth or status. Despite being established on land owned by the city, the project has embraced the uncertainty of its life expectancy. While moves to privatise the site were overcome in the summer of 2013, Robert and Marco are accepting of the fact that the day will inevitably come when they must pack up and relocate elsewhere. However, for the moment the Prinsessinengarten are proof of the positive influence small self-initiated urban renewal projects can have on their wider neighbourhood.

For Berlin in particular, it would appear the city is seeing an influx of this type of community led regeneration project. Even today, scattered across the city are sites left indefinitely empty or building's standing damaged and abandoned. They are reminders of the city's chaotic and unstable history, a consequence of the post-war era and signs of a city still recovering from its past division into East and West Berlin. Private investment has been conservative and slow to respond to the changing demands and attitudes of local communities. Yet a movement to reclaim many of the city's impoverished neighbourhoods has begun to filter through to the surface. With each new self-initiated, self-financed, and self-built project contributing to the rebranding of local communities, city makers are beginning to take note and implement legislation to support such efforts.

Someone who has been closely tracking these projects is architect, author, and founder of AA Projects, Kristien Ring. AA Projects is an interdisciplinary studio with a focus on architecture and urban planning, supportive of exhibitions, publications, and architectural discourse. I was first introduced to Kristien before leaving Sydney, where she presented a summary of her research into the *baugruppe* model, published in her book *Self Made City*. She was kind enough to meet me again while I was in Berlin, where we continued our discussion into the city's growing number of self-built housing projects.

The Prinsessinengarten exemplifies the ways in which self-initiated and community funded building projects are slowly reactivating pockets of Berlin

Of the projects Kristien has analysed, there is a wide range in scale and development type. Some collective building groups take up the challenge of adapting an existing structure, while others look for empty sites to develop from scratch. It would appear that early building groups consisted of fewer members, whereas some of the more recent projects have been built with 60 or more individual units. The primary demographic for this style of project remains young middle-income families, looking for an alternative and more affordable means of securing home ownership. Yet some of the larger schemes are starting to expand the mix of unit types, catering to other household groups. There is rising interest amongst single parents and older couples (whose children have left home), with both groups looking to maintain their independence within a supportive, like-minded community.

In Berlin the diversification of household structures has been met by mounting economic uncertainty, resulting in a squeezed middle class left unsupported by a housing market too slow in adapting to changing needs. While most looking to buy into the market still assign importance to a dwelling's location, size, aesthetics, or price, there is renewed interest in the value of "neighbourhood". People appear disheartened by the options available to them and seek more for their money - a product that caters to them specifically rather than a standardised solution. Hence, they are drawn to the idea of self-built collective housing as an opportunity to individually tailor their living environment. As Kristien says, it gives them an opportunity to define their own quality-to-price relationship, and decide what to invest in and where to make savings. Assuming budget constraints there will likely still be compromises, but at least in this style of development they can be debated and agreed upon by the building's future residents.

Also left to the discretion of the resident group is the intensity of social interaction and proportion of communal space within the development. Amongst the projects Kristien has visited, examples of shared use facilities include: workshops, meeting rooms, laundries, guest rooms, libraries, playrooms for children, roof terraces, kitchens, gardens, and parking spaces for share cars. Unlike a typical commercially financed development, the links between private and public spaces are more complex. The opportunity to devise alternative spatial arrangements and flexible user agreements is left in the hands of the residents and their architect. Another key advantage of the *baugruppe* model is the ability to build relationships amongst your future neighbours during the design process. This allows people to develop an understanding of one another before moving in, share their aims and ideas for the project, strengthen friendships, identify concerns, and establish an approach to living collectively by which they all agree.

By eliminating profit-driven decision making, despite their custom detailing, *baugruppe* projects commonly achieve a higher quality product at a reduced cost. As more examples of this approach flood the market, the pressure has fallen back on commercial developers to raise the standard of their product. In addition to a quality finish, sustainability is a common driver across the majority of self-built projects. This is not just with regard to environmental performance and a considered approach to the use of material resources, but also in relation to the project's flexibility, contextual relevance, and longevity. Many of these projects have been designed to ensure a level of inclusiveness, offering something back to their surroundings and encouraging public interaction. Often, as was the case with the R50 project, a *baugruppe* will decide to incorporate a shared garden space and open it to the wider public. The result is twofold, with both the community benefitting from their ability to share and enjoy use of the space, and the residents developing a vested interest in maintaining it as a reflection of where they live.

The Spreefeld development consists of three buildings, which combined house 65 individual dwellings: single, family, and "cluster" units

While in Berlin, I visited a number of different *baugruppe* projects in order to compare their approach and resolution. Although unable to arrange access to their interiors, it was interesting to explore their individual responses to site conditions, user requirements, and neighbourhood. The largest of these was the Spreefeld development, with a combination of single, family, and micro (described as cluster) units, providing a total of 65 dwellings spread across three buildings. While the initial masterplan was developed by local architect Silvia Carpaneto, the detailed design work was shared with two other architecture practices (BARarchitekten and Fatkoehl Architekten), with each firm assigned one of the three buildings. The project is located on the southern bank of the River Spree, and includes more than 1,000m^2 of communal space: workshops, multi-purpose studios, a fitness centre, guest rooms, and roof terraces. Having visited the site, I noted a lack of clear distinction between public and private outdoor spaces, yet through its scale and arrangement around a central courtyard, the project is in itself a small village.

Much smaller in scale is the Mischen Possible project, designed by BARarchitekten (one of the collaborators for the Spreefeld project). This project is a single seven-storey building, which mirrors the proportions of its adjoining neighbour. The building provides a total of ten dwellings, five of which are small studio units (30-40m^2), and five larger units ranging from 75-120m^2. The larger apartments are designed for future flexibility, allowing them to be easily sub-divided, while each dwelling again shares access to a workshop, guest room and roof terrace. The ground floor is given back to the public, and currently accommodates a small restaurant, smaller shop, and miniature gallery space.

The final project I will mention here is BigYard, designed in partnership by Zanderroth Architekten and Herrhurg Landschaftsarchitekten. Surrounded on three sides by the high walls of its neighbours, the only publicly exposed element of the project is its north-facing street façade. The 100m long frontage has been uniformly detailed in a pattern of timber, concrete, and glass to disguise a total of 23 terrace style town-houses (120-140m^2). Across the back side of the block, ten garden houses (140-160m^2) sit below a further twelve penthouse units (60-170m^2), bringing the total number of dwellings to 43. However, the project's hidden jewel is a communal courtyard garden, which runs the full length of the site between the two rows of houses, offering a safe, secure, and private oasis for the residents to share.

These three projects have each taken very unique approaches to maximising the opportunities of their respective sites. However, what remains common is the renewed sense of design freedom associated with developing a multi-residential project specifically for its future occupants. The *baugruppe* model facilitates the evolution of the urban dweller from a consumer into a pioneer of housing development. These groups seek ways of reactivating forgotten neighbourhoods, utilising existing building stock, disadvantaged sites, and minimal resources to develop affordable and contemporary housing. However, they are also raising the bar for architects, looking to us to facilitate and manage such projects, while rewarding the profession with a new found sense of relevance and value. As per the title of Kristien's book *Self Made City*, with the help of its architects, Berlin is starting to be remodelled, not by profit chasing commercial enterprise but by the people who actually live there.

The BigYard development accommodates 43 separate dwellings within two buildings, which open up into a large communal courtyard garden

x A New Way of Living

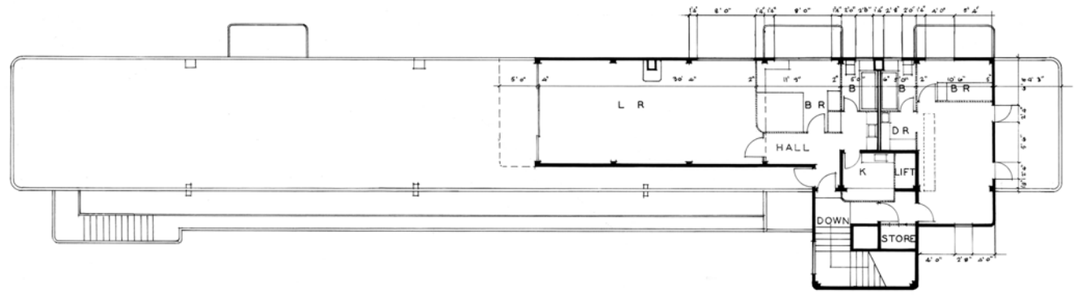
"This building... is perhaps the most modern building in England. It is not only modern as an architectural piece - it expresses a revolutionary idea for living." [1] These were the words expressed by client Molly Pritchard on Monday, July 9, 1934, at a ceremony to mark the opening of the Isokon Lawn Road Flats in London's northern suburb of Hampstead. Despite its age, this influential project remains relevant to today's discussions about alternative approaches to housing supply. Upon completion, it was deemed by most ahead of its time, and seen as representative of a pioneering new model for urban living. The project embraced the experimental German concept of *existenzminimum* - an attempt to define a "subsistence dwelling" in terms of minimally acceptable liveability factors - while seeking to develop an all inclusive, ready to live in housing product. Having visited the Isokon building while in London, I include the history of the project's development here as it offers a point of comparison for the next series of projects.

Having purchased the site in 1929 with the intention of building themselves a traditional family home, and feeling unmoved when presented with a preliminary design, Jack and Molly Pritchard changed tack and recruited Wells Coates to develop a new scheme for the site. Coates himself had no formal training as an architect. He had grown up in Tokyo, exposed to traditional Japanese craftsmanship, and then travelled to Canada to study mechanical engineering. In 1922, Coates moved to London to complete a doctorate, where he started to question the traditional approaches to living, working, and building. By the end of the decade he had confirmed architecture was his true vocation, and began to refine his own approach to design - a combination of simplified forms, modern materials, and spatial efficiency. [2] It appears this approach resonated well with the views held by Jack and Molly Pritchard.

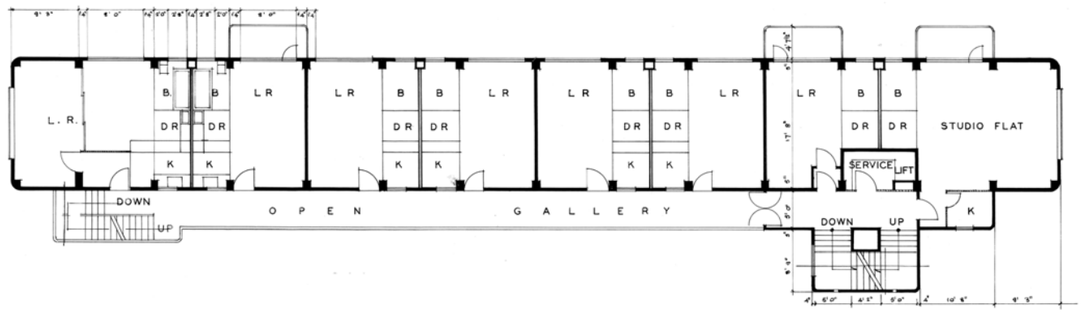
Coates initially produced two schemes for the site. The first scheme had a single residence, while the second showed two adjoining dwellings - one for the Pritchards and the other for Coates and his wife. Neither of these projects left the drawing board, but after a further year of research, redrafts, and intense discussion, the three of them agreed to proceed in a new direction. Given the site's urban location, they concluded that a traditional house would not represent the most economical use of the land, and therefore arrived at the idea of a modern block of flats. In drawing up the new brief, the Pritchards called for a new vision of urban living, suitable for London's young professionals. The building was to be innovative in design and socially experimental. Influenced by the concept of the minimum dwelling, which had been the focus of the Congrès International d'Architecture Moderne (CIAM) in 1929, the brief called for units of minimum dimensions. The aim was to develop an ideal form to support life - streamlined and unimpeded by excess possessions - a framework to inhabit, that would make life as carefree as possible. Each flat would have a main living area, along with a compact service zone to accommodate a

Built in 1934 as an experimental approach to modern living, the Isokon Lawn Road Flats have been recently restored for a new group of residents

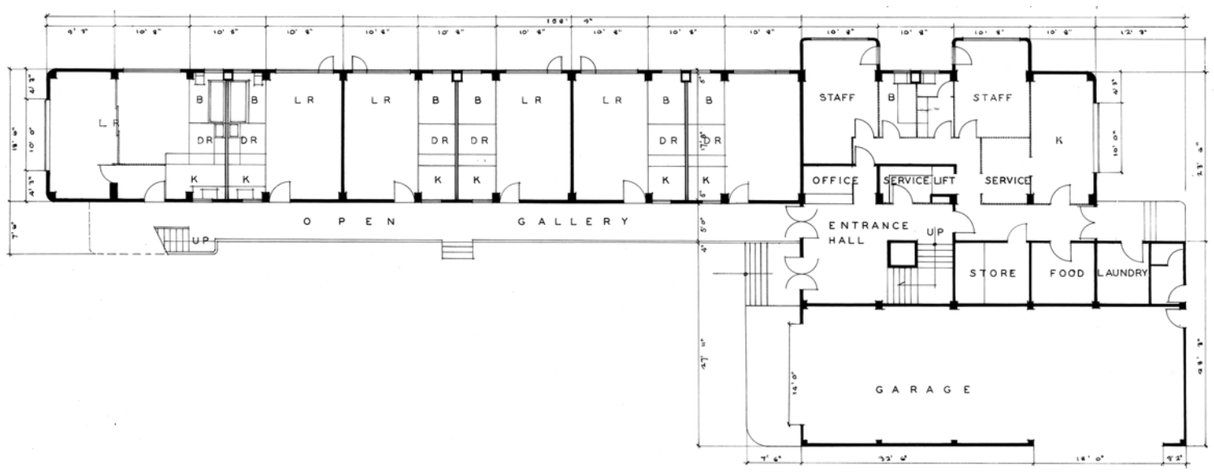
An early advertisement seeking interested tenants for two of the building's flats, inclusive of "very full domestic services" with "everything done for you"



Fourth Floor



First/Second/Third Floor



Ground Floor

Isokon Lawn Road Flats Original Plans
Scale: 1 : 250

small bathroom, dressing room, and kitchen. The units would be marketed towards male and female professionals who had little time for “domestic troubles”. [3]

In June of 1933, at the Exhibition of Industrial Art in the Home, a prototype of the minimum flat was presented to help acquire funding for the scheme. Construction was underway by September of the same year, and the project was completed by the following June. The building consisted of four floors, each accessed by a continuous cantilevered balcony and serviced by two stairs. The Pritchards occupied the penthouse unit, where they resided for almost 40 years until the building was sold. Each floor contained a series of small, modular units bookended by a larger, two-roomed version at one end, and a double studio apartment at the other. At ground level three units were allocated to the building’s live-in staff, and connected to a kitchen, laundry, and store room to help them service the needs of residents. The building’s modular, one-person units all followed the same minimum dimensions, measuring 5.4m deep by 4.67m wide, with a floor area of just over 25m^2. The main living area was 5.4m deep by 3.15m wide, with built-in furniture to differentiate between living and sleeping zones. Some units offered a small balcony, accessed via a glass door at the far end of the living area. Along one side of the unit, neatly concealed behind sliding doors, sat the bathroom, dressing room, and modest kitchen, which measured 1.4m by 1.52m (designed around the assumed arm length of its future user). [4]

In the interest of quickly attracting tenants, early promotional posters emphasised the “very full domestic service” included for all units, listing shoe cleaning, window cleaning, and “everything done for you”. The following sales pitch accompanied a list of monthly rental costs distributed for the different unit types:

AT LAWN ROAD HAMPSTEAD.
ISOKON READY TO-LIVE-IN FLATS.

A new block of ISOKON service flats is being built in Hampstead.

ISOKON flats are designed to solve the problem of living comfortably and compactly. Everything that is unnecessary, inconvenient or “labour-making” has been left out, but everything essential has been left in, and (more than important) is in exactly the right position.

Although ISOKON flats are not furnished in the usual over-crowded sense of that term, they are absolutely ready to live in.

From the lobby of the ISOKON flat, you enter the living room, this contains a sliding table which can seat four or five people, and a divan bed. The furnishing can be supplemented with unit furniture containing bookshelves, cupboards for glasses and bottles, easy chairs, the ISOKON electric fire unit and a combined wireless and cocktail cabinet.

The supplementary furniture can be bought or acquired on the Hire-Purchase system, the instalments being included in the rent of the flat.

Off the entrance lobby is the kitchenette. This contains every convenience for cooking a dinner, washing up and storing crockery, so neatly arranged that the whole fitting only occupies a space of 4ft. 8 in. by 5ft.

An Electrolux Refrigerator and an electric cooker are included in the rent.

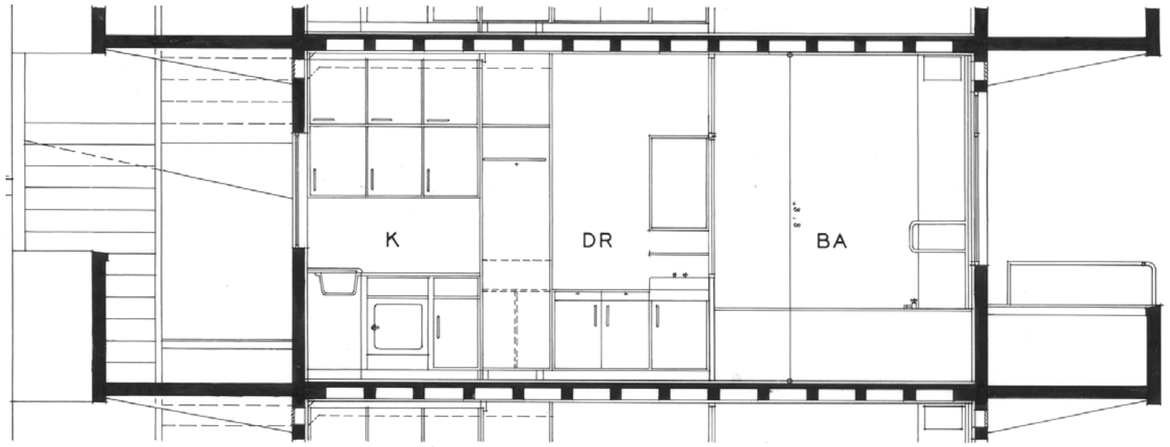
The dressing-room is entered through a sliding door from the living room, and is equipped with a lavatory basin, dressing table and a fully-fitted and furnished cupboard with mirrors, and the bathroom opens up out of the dressing room. This contains the bath and W.C.

The block will contain 22 of these one-person flats, some of which have balconies, some being panelled.

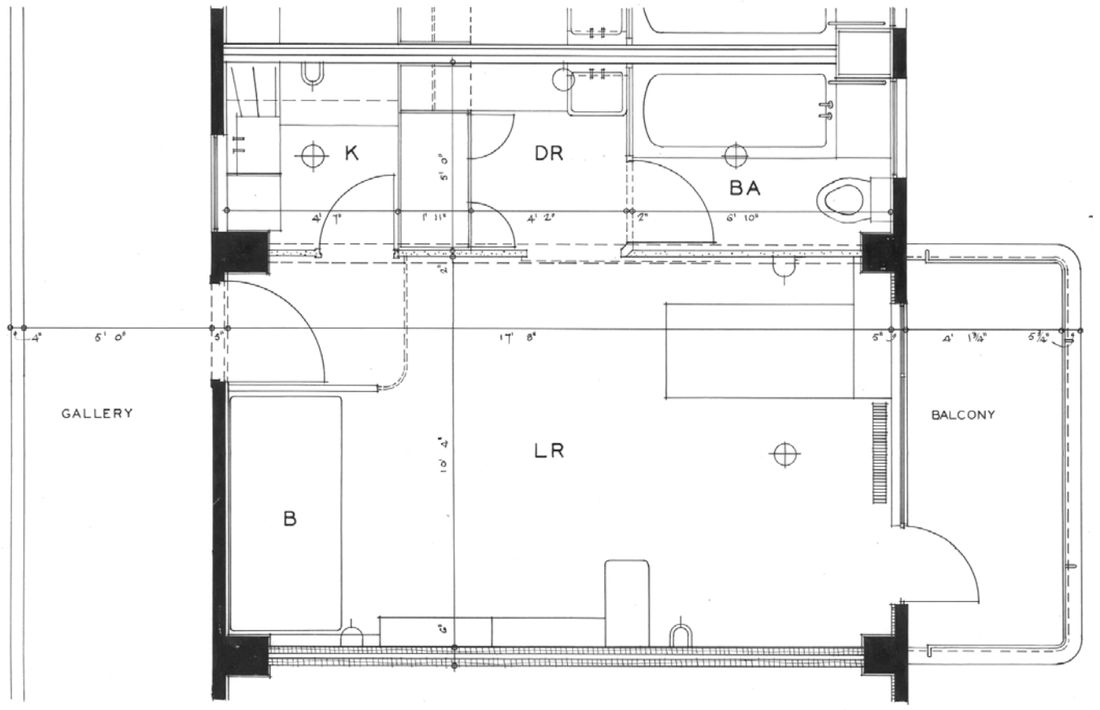
This block will also contain four extra-large TWO-roomed sun flats, and three studio flats which have balconies. A garage is included in the block.

WHAT THE RENT COVERS.

The following services are included in the rent: rates and taxes, constant hot water, central heating, cleaning and tidying of rooms by competent maids. Arrangements can be made for the provision of meals in tenant’s own rooms. Service can also be arranged to include all such tiresome extras as laundry, mending, darning and the cleaning of suits and dresses etc.

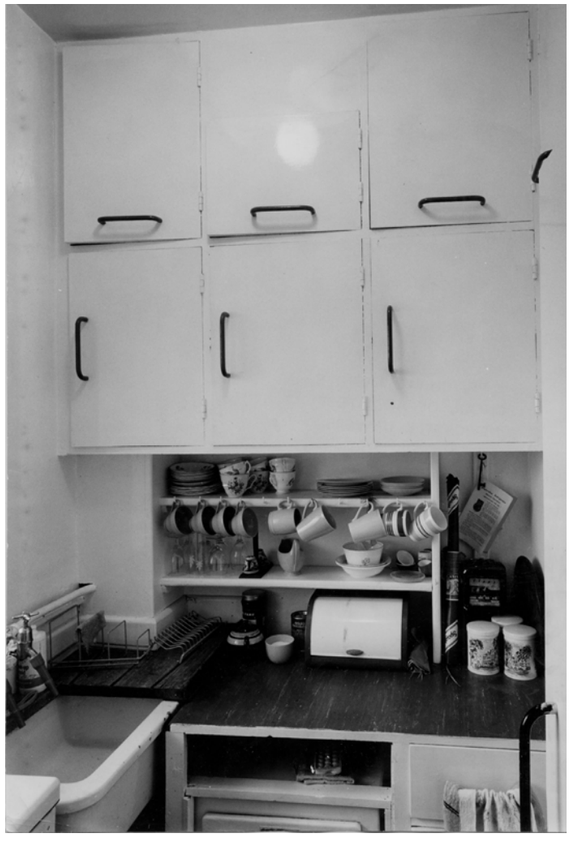


Detail Cross Section



Detail Floor Plan

Isokon ‘Minimum’ Flat Drawings
Scale: 1 : 50



Shortly after its opening, Gerald Barry reported on the project in the News Chronicle, saying: *"The experiment is the signpost to a new order. It represents in concrete and steel the new attitude towards the business of living which is beginning to emerge from our present day chaos"*. [5] As a strong example of the modernist movement, the building quickly became home to London's fashionable and creative elite. In addition to the Pritchards, residents included artists, authors, and architects - most notably Bauhaus émigrés Walter Gropius and Marcel Breuer. In 1937, Breuer oversaw the conversion of the ground floor kitchen and staff quarters into a communal bar and restaurant, which became known as the Isobar. The conversion went ahead after it became apparent that demand for the existing facilities was not being met by residents, who seemed content preparing meals in their own kitchens, despite the limited space. [6] The Isobar proved an immediate success, becoming a social hub for tenants and attracting residents of the surrounding neighbourhood. However, when the building was sold in 1969, the bar and restaurant were removed and the space again converted for residential use.

Sadly, following this change in ownership, and subsequent decades of poor maintenance, the building began to deteriorate. It eventually became uninhabitable and many questioned its value, calling for its demolition. Fortunately, it remains today. Having been lovingly restored by Avanti Architects, in partnership with the Notting Hill Housing Group and the Isokon Trust, the building was reopened in 2004. The team won a competition run by Camden Council, who supported their efforts to acquire the building, conserve its historical significance, and refurbish it to allow continued use as residential apartments. Upgrades were made to the building's services to meet current building standards, and the units re-insulated to improve thermal performance. Internally the original planning of each flat remained the same, and where subsequent alterations had been made, the original layout was reinstated. Minor modifications were made to the kitchen and dressing room to accommodate modern requirements, such as a fridge and washing machine. However, where possible, the original finishes were restored or replaced with like.

Today, the building provides 25 units under a shared ownership scheme, and an additional eleven units which were sold on the open market. The Isobar was not reinstated, with that part of the building left as residential units. However, the development consent did allow for the conversion of the original garage into a new public exhibition space. The Isokon Gallery now operates out of this area and is typically staffed by one of the building's new residents. The exhibition presents the history of the building, along with stories of its past residents. It highlights the innovative concepts that inspired its creation - ideas that are re-emerging in today's housing culture.

[1] John Allan et al., *Isokon Gallery: The Story of a New Vision of Urban Living* (London: Isokon Gallery Trust, 2016), p. 36.
[2] Allan, *Isokon Gallery: New Vision of Urban Living*, p. 18.
[3] Allan, *Isokon Gallery: New Vision of Urban Living*, p. 28.
[4] Allan, *Isokon Gallery: New Vision of Urban Living*, p. 34.
[5] Allan, *Isokon Gallery: New Vision of Urban Living*, p. 36.
[6] Allan, *Isokon Gallery: New Vision of Urban Living*, p. 63.

The dressing room (top-left) and kitchen (top-right) of one of the original 'minimum' flats, and inside the Isobar (bottom) designed by Marcel Breuer

xi Corporatised Communities

The lack of choice afforded to the majority of young adults seeking housing in urban areas has opened the door for a new type of corporate enterprise. Co-operative housing models have proven themselves to be a good way of reducing the financial impacts of home ownership, and often help to stimulate growth and renewed investment in struggling neighbourhoods. By making certain facilities communal - such as laundries, gardens, and spare bedrooms - residents are able to reduce the size of their private dwelling, and in doing so lower the overall cost. However, the time related costs associated with finding a group of like-minded individuals, locking down a suitable site, saving for a deposit, developing the design with an architect, obtaining the necessary approvals, co-ordinating loans, engaging a builder, and seeing it through to completion, all make for a serious commitment. Meanwhile, renting remains their only other legitimate option. However, a number of privately funded, market savvy corporations have begun to emerge, each offering the social and financial benefits of co-operative living to those trapped in the rental market.

While each of these corporatised communities operates on a model tailored around their respective local legislation, at their core they are the same. They provide tenants with a small private bedroom and access to numerous shared spaces and facilities, designed to ease the stresses on the contemporary urban dweller. For this study I visited three of these projects and met with a community manager or company representative from each one, to better understand their product and the processes associated with their individual operation. The first of these projects is located in London, while the other two projects operate out of New York City. Both cities are battling to address the critical lack of affordable housing available to young professionals in proximity to areas of stable employment. As a result, a growing number of millennials are opting to relocate to less populous cities that offer more sustainable housing and employment opportunities. These same pressures are also being felt here in Sydney. Therefore, it is worthwhile exploring this style of project in more detail, so we may consider its inclusion in our own approach to delivering more affordable urban housing.

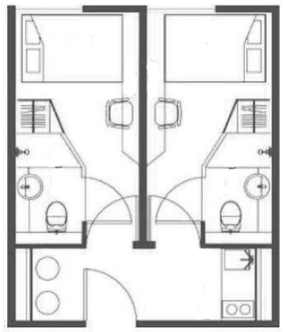
The Collective

The Collective's Old Oak development, designed in partnership with PLP Architecture, is located west of London's city centre, about five minutes walk from Willesden Junction Station (within Zone 2 of the city's rail network). With 550 bedrooms across eleven stories, the complex officially opened in September 2016. The opening followed a one month trial over the summer with 100 residents, of which 89 residents opted to stay on. When I visited the project in early October the building was already 60% full, with an additional 20% of rooms allocated to future residents. Eligibility to live at Old Oak is fairly

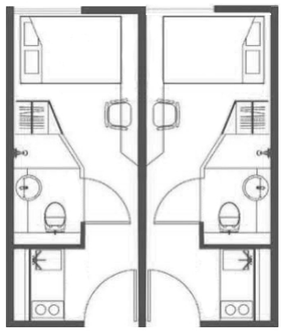
The Collective's Old Oak development offers small, private, and fully furnished bedrooms for rent, along with access to a variety of shared facilities

unrestricted. However, there are a few requirements, primarily proof of employment, UK residency or a current working visa, and a minimum annual salary of £28,000 (with no maximum). The nominated minimum stay is currently nine months, and potential tenants are interviewed to confirm their compatibility and commitment to active engagement with The Collective's fostered community.

The majority of units on offer are either dual-key en-suite rooms or private studios. Rents start at around £950/month (A$1,600/month) and go as high as £2,100/month (A$3,500/month) depending on the size and location of your room within the building. Rooms on higher floors are more expensive and en-suite rooms are cheaper than studios. The rooms themselves are very small and have been designed to allow easy conversion back and forth between en-suites and studios (see plans below). En-suite units, which start at £220/week (A$370/week), are arranged in pairs, with both tenants accessing their private room via a small common entrance space, fitted out with a kitchenette on one side and breakfast bar opposite. The narrow kitchenette includes a two-hob cooker, combi-oven, and small fridge, and comes stocked with basic crockery, glassware, and utensils. Each en-suite room has its own private bathroom pod, along with a small wardrobe, bookshelf, wall-mounted television, and double bed with storage below. The studio units, which start at £270/week (A$450/week), are equivalent to the en-suite rooms in all aspects except for the shared entrance space. These rooms are each fitted with their own kitchenette within a private entrance hall. High ceilings and a large window in the back wall of every bedroom - offering daylight and, in some cases, city views - help to dispel any potential fears of claustrophobia. All units come fully furnished, with bed sheets and towels provided. Room cleaning and linen change are scheduled fortnightly, high-speed internet is available throughout the building, and residents are able to contact either the concierge or a community manager 24 hours a day.



Ensuite Rooms



Private Studios

Despite this "ready to live in" functionality, residents are discouraged from spending time in their "deliberately compact" private quarters. The Collective brands itself as a thriving community, and has developed numerous initiatives to build friendships and instigate partnerships or collaborations between its residents. To help facilitate such encounters, scattered across the building's eleven floors are a series of shared community spaces and facilities equating to more than 900m^2. Several themed dining rooms adjacent to fully serviced kitchens offer residents the chance to cook and share meals together or entertain guests. For those who'd rather have a meal cooked for them, a restaurant and bar named The Commons operates on the ground floor. While the restaurant does offer take-away, in the interest of fostering a cohesive community there are financial incentives built into the menu for those who dine as a large group. Adjacent to the restaurant, the building's entrance lobby doubles as an informal lounge room, an area where residents can either work privately or sit together and chat. As the building's primary point of entry, it is a good environment for both planned meetings and chance encounters with other residents. A games room, cinema room, roof terrace, and spa all offer tenants opportunities to relax and unwind. There is also a large communal library where residents are encouraged to collectively store and share their books.

En-suite rooms accommodate a double bed, narrow desk, small wardrobe, and a private bathroom pod

A communal library offers a relaxing environment and encourages book sharing amongst residents

Still to be completed at the time of my visit was the gym and grocery store, both located at street level, and a large shared work space on Level 1, which will offer hot desks for tenants and (for a fee) locally based freelancers in need of workspace. While access to the gym (along with all of the building's other facilities) is included in the rental costs, gym memberships will also be offered to the wider community. The grocery store tenancy will be leased and run independently, again catering to both residents and the neighbourhood. On-site parking is not available to residents in light of the building's proximity to bus and rail transport services. However, Zipcar vehicles (a car share membership service equivalent to Australia's GoGet) are available for short-term rent when required.

The Collective's Old Oak site is run by four community managers who deal with day to day operations and tenant queries on rotation, along with two associates who handle administration. Community managers host monthly town hall meetings, encouraging all residents to attend and raise questions or give constructive feedback on the living experience. In the interest of stimulating community growth a variety of events are held regularly, including yoga classes, film nights, and social gatherings or live music in The Commons. In addition, residents are welcome to host their own events, invite outside guests, and make use of the communal areas. Event notifications are issued regularly to all residents. There are also a couple of short-stay rooms available to visitors and guests, which can be rented at £50/night (A$83/night).

The project's design may appear to be modelled on student accommodation, yet students are not the target demographic. Rooms are marketed towards young professionals, aged in their mid twenties to late thirties, who exhibit creativity and ambition in their chosen field. While there is a wide range of occupations amongst residents, The Collective's living experience is favoured by those in the tech and creative industries, and the model currently trends slightly better with men. However, staff have noted a rise in "laziness" amongst some tenants, primarily those looking to take advantage of the domestic services offered without properly engaging with the community. In the interest of maintaining a balanced, active, and cohesive neighbourhood, management have set a date at the end of May this year to review all existing tenant applications, and will continue to do so on an annual basis. Although the assumed length of stay for most residents is deemed to be two to three years, annual reviews could have some impact on the security of tenure, leaving residents with a level of uncertainty regarding their housing future.

As the Old Oak development reaches its capacity, and more of London's millennials become wise to the offerings of a "collective" lifestyle, competition for residency is expected to exceed current availability. However, The Collective has two additional developments underway, both of which are expected to commence operation within two years. A similarly sized project with around 450 units is being built in Stratford, and a larger project at Canary Wharf. With these two new projects, The Collective are continuing to target areas which currently offer few affordable residential opportunities, but remain well connected to the city's employment centres. The Stratford development, also designed by PLP Architecture, will accommodate 223 co-living units with shared kitchen and living spaces, and an additional 214 private serviced apartments. The 30-storey tower will include the same communal facilities as Old Oak - a games room, library, garden, gym, spa, and cinema room, along with a public restaurant on the 22nd floor, roof top terraces, and a shared office space at street level for local start-up businesses. Less is publicly known about the Canary Wharf development, although it is said to comprise some 700 units over 20 floors and provide additional communal facilities including a rooftop pool.

◂ The large communal laundry is another space for chance meetings and socialising between residents

◂ A series of communal kitchens give residents the extra space to prepare meals and host guests

Byera Hadley Travelling Scholarships Journal Series

WeLive

WeWork is a US based company offering shared office space to businesses in more than 130 different locations globally. They pride themselves on developing thriving communities, while providing flexible workspaces and business services at a reduced market rate. However, they have recently applied this same concept to two new projects, one in Washington DC and the other in New York City, under the brand WeLive. Both projects are located within buildings also operating shared office spaces under the WeWork model, and I was able to tour the New York site in October last year with one of its community managers.

Located at 110 Wall Street in Manhattan's Financial District, residents are well positioned with less than a two minute walk to either the Wall Street metro station or the East River Ferry at Pier 15. In total the building offers nearly 200 apartments, varying in size from small private studios to four-bedroom units. Each floor has between nine and fifteen units, and floors are grouped into three-storey "neighbourhoods" that share access to a series of communal spaces and facilities. The median age of residents is currently 28, with women outnumbering men, and the minimum age is set at 21 to eliminate any issues with underage drinking. To become a member of the WeLive community there is an initial membership fee of US$1,250 (A$1,635), plus payment of the first month's rent upfront. The minimum rental period is one month, beyond which tenants are given month-to-month flexibility on their lease, and can decide to opt out of renewal whenever their situation requires it. However, due to this added flexibility and to comply with New York City's legislation on short-stay accommodation, all tenants are taxed an additional 15% for the first six months of their lease. If they stay beyond the six month period they are then able to claim the tax back.

Share units, which come in the form of two-, three-, and four-bedroom configurations, currently start at around US$1,900/month (just under A$2,500/month) per person. However, WeLive do not provide a roommate matching service for tenants, or allow bedrooms to be rented independently. Each share unit operates under a single lease agreement, with the onus on tenants to find and replace each other if they wish to continue renting. This approach appears at odds with WeLive's aim to provide reliable and community based housing, particularly given they offer the flexibility of a single month lease renewal period. Within a share unit each private bedroom is approximately 10m^2, and comes furnished with a queen-sized bed, built-in wardrobe, and a narrow timber bench beneath its large window. The bedrooms are arranged around the unit's shared central living space - an open plan kitchen, dining, and lounge area - which comes fully furnished and stocked ready to move in. Each unit is typically built with only one shared bathroom, although some offer an additional toilet.

While the share units offer the most affordable housing option for tenants seeking a private room, the most common unit arrangement WeLive offer is branded Studio Plus. These units, which measure around 450sqft (40m^2), provide a fold down queen-sized Murphy-bed within the main living area, and a secondary double bed mattress within a raised timber alcove behind the unit's kitchenette. These units start at around US$3,050/month (just under A$4,000/month). However, they can cater for more than one person, with a maximum occupancy of 2.5 people, potentially accommodating two friends, a couple, or a young family with a child. All unit types have been conceived in accordance with the ADA (Americans with Disabilities Act) design standards and can be easily adapted to suit specific tenant requirements.

◂ WeLive's StudioPlus unit comes fully furnished and offers a queen size Murphy-bed in the living area

◂ An alcove behind the kitchen offers an additional double bed with built-in storage and privacy curtain

Byera Hadley Travelling Scholarships Journal Series

There is an additional fee of US$125/month (A$165/month) charged to all tenants to cover the cost of utilities and cleaning services. All bed linen, towels, and basic kitchenware is provided new upon arrival, and included in the rental price. However, management are considering options to reduce turn-over of some items. All tenants have a registered account linked to a smartphone application, allowing easy access to management service updates, event notifications, resident communications, and in-house purchases. Each three-storey "neighbourhood" has a large communal chef's kitchen and dining hall, which caters for community events and allows residents to cook for and entertain friends outside the confines of their unit. The central laundry doubles as a games room. Ping pong tables and complimentary beer on tap make doing a load of washing a more social experience. Residents have access to as much tea, coffee, soft drink, and beer as they can consume, with communal kitchens stocked regularly. Outside the laundry, an unmanned stall offers a selection of replacement toiletries for purchase, although prices reflect the convenience of not having to leave the building.

The interior styling is successful in disguising the building's original commercial utility. You can't help but be distracted by the colourful, polished, and contemporary aesthetic that floods the communal spaces and sets the tone for the units themselves. WeLive accept that their product is not suited to everyone, and have therefore focused on the priorities and themes most relevant to their target demographic. Their product is housing, but their strategy is to sell it as a service for which you pay a membership fee. The pricing structures appear high, but they are difficult to compare with the traditional rental market, as you expect to be charged a premium for access to the added convenience, reliability, flexibility, and opportunities offered to members of the WeLive community.

If you are in New York for a short period and want to take advantage of the WeLive experience, there are currently 24 units dedicated to guests for stays as brief as one night. These short-stay units include the full range of room types available for long-term lease, starting at around US$255/night (A$335/night) for a studio, up to US$535/night ($A700/night) for a four-bedroom unit. These rates are again subject to the city's hotel tax. WeLive say they are still examining the pros and cons of mixing transient tenants in with longer-term residents, versus allocating whole floors to short-stay guests.

To date, all WeWork office spaces have been set-up within existing commercial buildings, retrofitted to suit the brand. This is deemed more cost efficient than investing in new developments tailored specifically to their model. However, adapting a commercial floor plate to accommodate the WeLive concept has proved more challenging. Each bedroom requires a window, which restricts layout options in existing buildings, leaving too much of the core underutilised. The company believes pairing WeWork and WeLive spaces within the same building is important, as it adds value to the membership. Therefore as the WeLive portion of the business model expands, it may move away from refitting existing building stock and begin investing in new building projects.

◂ A communal kitchen/dining hall allows for resident events, including cooking classes and tastings

◂ Private bedrooms are arranged around a shared living area which comes furnished and ready to use

Urby

Another emerging player in the co-living rental market is Urby, which this year opened its first development in Staten Island, New York. The project is one in a series of independent developments aimed at reactivating the island's North Shore by reinstating public access to the waterfront, now that the Homeport US Naval Base has been decommissioned. Upon completion, the Urby development will house 900 rental apartments, a mix of studios, one-bedroom, and two-bedroom units, along with various communal facilities and some 3,000m^2 of commercial space. I was fortunate enough to attend a tour of the premises as part of last year's Open House New York event.

With no direct bridge or metro line, access to and from Manhattan is limited for Staten Island's 470,000 residents. However, the Urby development is only a short walk from Stapleton Station, with easy access to the Staten Island Ferry. By taking advantage of the existing public transport infrastructure that services the North Shore and encouraging private investment into its renewal as a waterfront precinct, the city government is hoping to expand employment opportunities on the island and see a return of young talent to the borough.

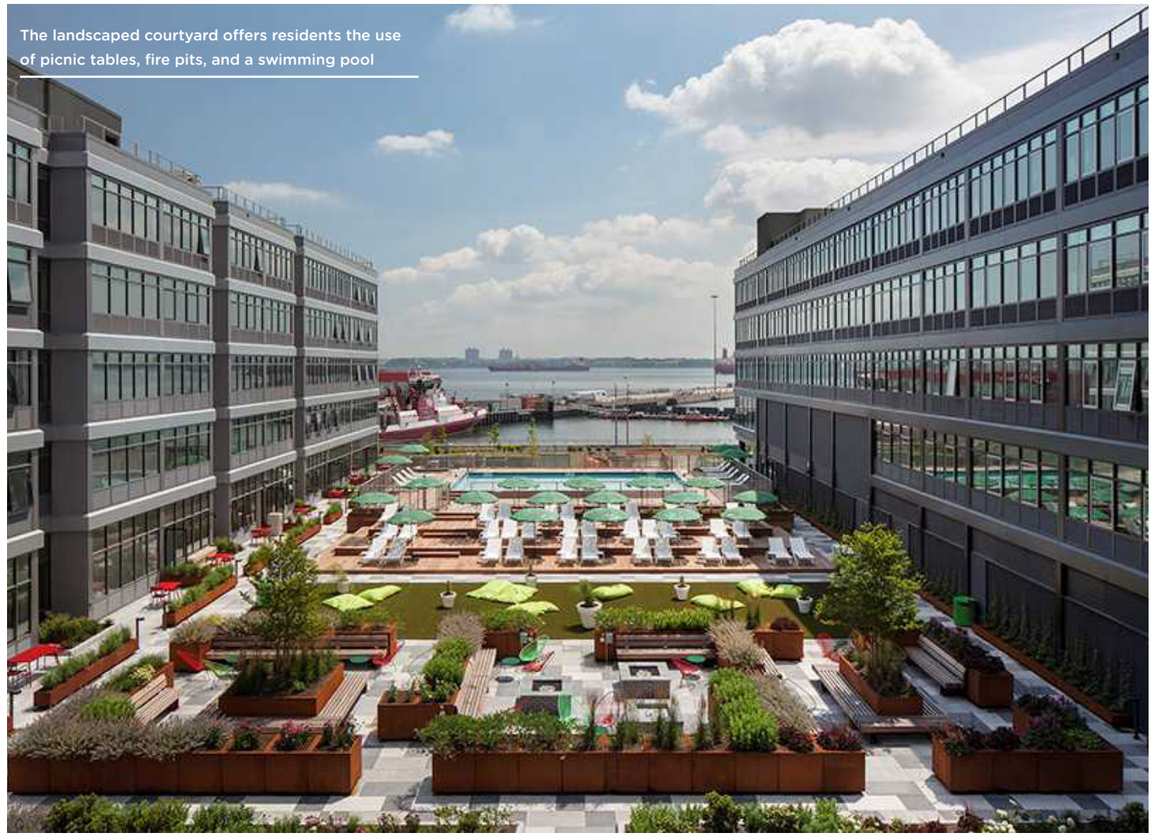
Urby, like its rival co-living brands, sells a living "experience" that emphasises community. The concept was developed by real estate firm Ironstate in partnership with Dutch architects Concrete. The apartments are designed to offer a quality rental product for the contemporary urban dweller, with access to various social spaces that promote resident interaction. At the time of my visit in October last year, Phase One with 571 units was complete and construction of Phase Two was well underway, which will bring the development's final total to 900 units. To comply with the city's affordable housing legislation, 20% of the units available are rent stabilised, meaning the allowable rent increase on lease renewals is set by the city each year.

One of the unique inclusions in this development is an urban farm - claimed to be among the largest in the city - which is headed up by two of the building's residents. The garden plot is centrally located to encourage community participation, and supports a variety of produce made available to residents at weekend markets or via a food box ordering service. Community farming sessions are run on a Friday, giving residents the opportunity to actively participate, learn more about the current crop, and assist with the weekly harvest. There is an apiary on the building's rooftop with 20 beehives. The honey produced is also made available to residents. A communal chef's kitchen and dining hall currently offer cooking classes and tasting events, hosted by one resident who is a working chef. There is a large cafe at street level open to both residents and the public. It offers a deliberately random assortment of seating options, and includes a more secluded mezzanine lounge area. Tables with built-in power points, along with free Wi-Fi, make this a suitable space to sit and work. There is an on-site fitness centre open 24/7 for residents, although at this stage management claim it is underused. In addition to the farm plot, the large central courtyard area offer tenants access to a large swimming pool, and shared use of an outdoor entertaining area with picnic tables and fire pits.

Also located along the street facade are a series of commercial tenancies, which when open will include a convenience store and several restaurants and bars. Urby are in the process of partnering with a number of boutique local retailers, including Coffeed - a New York City-based coffee chain that prides itself on locally sourced produce, and donates a percentage of gross revenue to local charities - who currently operate the site's cafe. This is all aimed at attracting broader interest amongst Staten Island's existing community, and to help market the precinct as a destination for other New Yorkers. With the completion of Phase Two, the project will offer parking for some 600 cars, catering to residents and the visiting public. Parking spaces are currently rented separately if required, in addition to the communal storage area which accommodates up to 500 bicycles. It is assumed additional bicycle storage will be included for Phase Two residences.

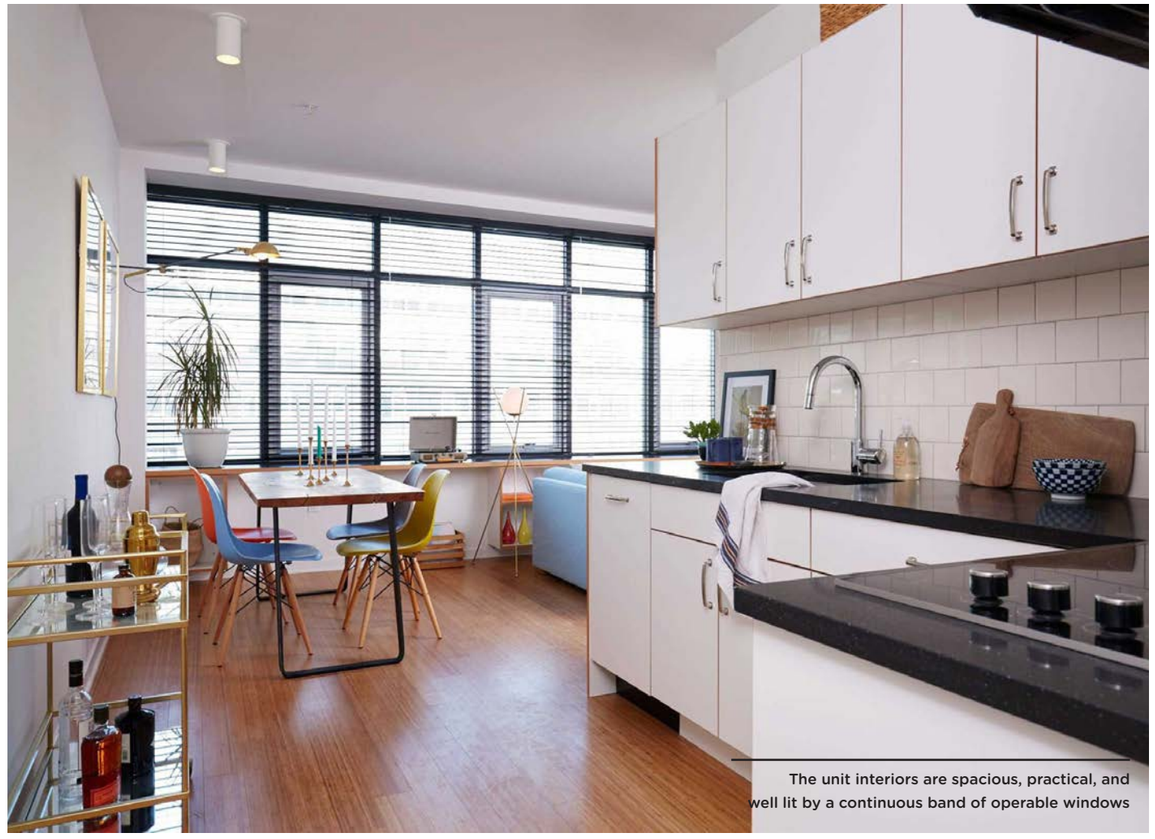
At Urby both residents and the wider community can take advantage of the free Wi-Fi and locally sourced produce on offer in the cafe and bodega

A series of buildings surround a large courtyard which caters for community events and recreation



The landscaped courtyard offers residents the use of picnic tables, fire pits, and a swimming pool

The internal corridors are long, narrow, and impersonal, despite the introduction of street art

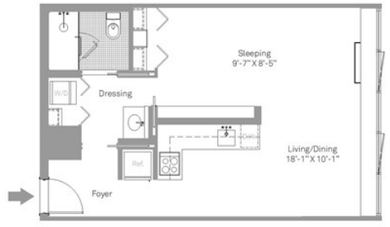


The unit interiors are spacious, practical, and well lit by a continuous band of operable windows

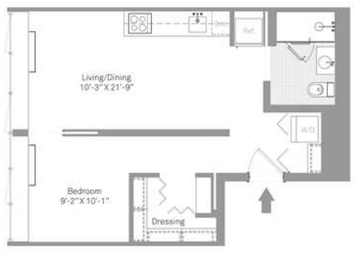
 Across the different unit typologies on offer, there are slight variations in their size and configuration based on their location within the building. On our tour we were shown into one of the larger versions of a studio apartment. At the time I will admit it appeared well conceived and spacious, although at 540sqft (50m^2) and having reviewed the floor plan, I would argue whether it is the most economical use of space. This unit currently rents at US$2,255/month (A$2,940/month). There is a more compact studio offered, at 370sqft (34m^2), which is priced at US$1,875/month (A$2,445/month), while at around 715sqft (66.5m^2) the two-bedroom units start at US$3,550/month (A$4,625/month). A selection of the different unit types are outlined below with floor areas and current pricing for reference. Leases are offered for either 12 or 24 months. All units include a kitchen with modern appliances, a laundry stack, and built-in wardrobe/storage units. However, all other furnishings are supplied by the tenant.

Residents carry a key fob, which grants swipe access beyond the building's public areas to all communal facilities and the door of their apartment. However, building access can also be controlled and monitored via a smartphone app. While the unit interiors are warm, well lit, and inviting, the shared internal corridors suffer as a result of the building's scale. Despite the inclusion of colourful graffiti wall graphics in the lift lobbies, the corridors appear long, dark, and monotonous. Some effort to combat this is evident in the illuminated number signage unique to each unit, but overall the space is too narrow to allow any real personalisation or visual relief. However, the project's true strengths are on display in its grand communal spaces, where a stylish, contemporary aesthetic compliments the "convenience" built in to the Urby experience.

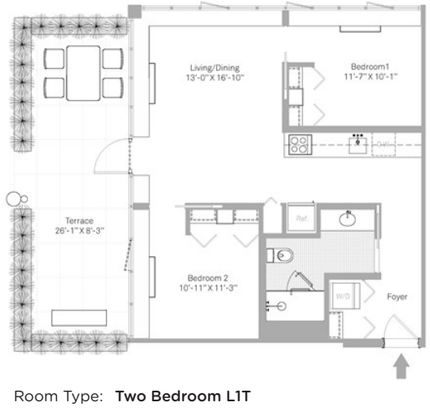
Room Type: **Studio XS**
Floor Area: **371sqft (34.5m2)**
Rental Cost: **US$1,875 (A$2,445)/month**



Room Type: **Studio M1**
Floor Area: **538sqft (50.0m2)**
Rental Cost: **US$2,255 (A$2,940)/month**



Room Type: **One Bedroom M6**
Floor Area: **527sqft (49.0m2)**
Rental Cost: **US$2,305 (A$3,005)/month**



Room Type: **Two Bedroom L1T**
Floor Area: **716sqft (66.5m2)**
Rental Cost: **US$3,550 (A$4,625)/month**

 Having carried out some functionality and demographic testing of the Urby model at a small 48 unit apartment building prior to commencing work on the Staten Island development, Urby already have two additional projects in the works. Construction is nearing completion on a huge triple tower development in Jersey City, also designed in partnership with Concrete. While the housing concept is the same, the scale and form of this development is very different to Staten Island. Each tower is designed to be 69 storeys, with a combined total of 2,358 apartments, supported by communal facilities, commercial tenancies, and street level cafes/restaurants. The development, which has been branded Urby Harbourside, sits less than 200m back from the Hudson River and is a very visible addition to the Jersey City skyline from Manhattan. The third and smallest Urby project to date is located just over the state border in the city centre of Stamford, Connecticut. When complete, it will include 670 units across a series of interconnected medium-rise buildings surrounding a large outdoor courtyard.

• • • •

Such rapid investment in these corporatised co-living projects would appear to suggest a working model. Tenant uptake has been swift, and the majority appear to speak favourably about their ongoing experiences. Yet some outsiders have questioned the merits of such a model, and remain uncertain of the long-term consequences on local communities and our social development. Some argue against forms of housing that facilitate a "suspended adulthood", an extension of the student lifestyle which they fear will continue to result in delayed family formation amongst millennials. Others have gone as far as suggesting we are moving towards a culture where the concept of a single, permanent home will be irrelevant. While speaking at last year's Tech Open Air Festival in Berlin, The Collective's chief operating officer James Scott made a prediction that in the future we will all be "homeless". [1] He suggested that the rise of the digital nomad is leading us towards a model of subscription based housing - living provided as a service. To most people this will sound far-fetched. However, when you consider the ways in which more and more people now acquire music and movies, or opt in to car and bike share services, perhaps the idea of owning a permanent home will also become less instinctive. As Scott suggests "access" is fast becoming the new form of ownership, and if we continue to favour mobility and freedom over a desire to set down roots, then perhaps access to comfortable, quality, short-term housing is the inevitable compromise...

[1] James Scott, "In the Future, We'll All Be Homeless - Thoughts from Tech Open Air," *Collectivist*, July 20, 2016, accessed January 31, 2017, https://www.thecollective.co.uk/collectivist/living/well-all-be-homeless-in-the-future-thoughts-from-tech-open-air

Conclusion

In Australia, our cultural preconceptions with regard to housing distort the approach we take to determine a dwelling's liveability. Second only to its location, the physical size of a dwelling is what most influences its real world value and attracts potential buyers. This is curious given architects rarely come across a residential client with the ability to properly visualise the physical size of a space when presented with dimensioned plans. Many more, including some architects, would struggle to accurately estimate the floor area of the room in which they were standing, without first pacing it out. If you were to ask the average home owner how many square meters their house is they would struggle to tell you, and either not answer or guess wildly. This was likely a question they themselves asked before buying the property, but having lived there for a few years the information is no longer relevant. Therefore why do we insist upon defining and certifying homes as liveable based on their floor area? Perhaps it is a consequence of the increasing number of people opting to buy "off-the-plan" – unable to physically experience the space, they attain comfort in the knowledge it will be 126m^2 and have three bedrooms. If this is the basis by which we determine the value and liveability of our housing stock, then given the growing housing crisis, maybe it is time to reassess our cultural fixation with dwelling size and instead demand greater flexibility, functionality, and affordability.

In the same way that Australians have developed certain preconceptions with regard to housing, the Japanese have their own cultural expectations. In Japan, living in a small dwelling is common; a long accepted tradition of taking only the minimum requirements for life. Furthermore, the Japanese house has a relatively short life expectancy. This impacts its design, materiality, method of construction, and most importantly the way housing is valued long-term. In Tokyo specifically, the city's residential districts are in a constant state of reinvention. Few homes are re-inhabited after being sold, instead they are torn down and rebuilt to better suit the specific needs and tastes of their new owners. This condition of impermanence across much of the city's housing stock has in recent years given rise to more unconventional and experimental approaches to housing design. Home ownership remains the dream for most young adults working in Tokyo, as (like Australia) it offers stability for those looking to start a family. However, with income levels failing to keep pace with rising house prices, aspiring home owners have had to become more creative in their approach, and look for new ways to maximise the value of their investments.

One such approach is to take advantage of the small, awkwardly shaped, left-over sites that exist amongst some of Tokyo's residential neighbourhoods. These are sites that have been deemed by others too complicated to develop and inhabit, and therefore undervalued. In their attempts to maximise the functionality of such sites, architects are being granted a new level of design freedom. The result is typically representative of the site's unique nature and its owner's willingness to compromise or adapt their living habits

The front elevation of Yasuhiro Yamashita's Lucky Drops House, which is built on arguably one of the most challenging site's in Tokyo

 in the interest of securing home ownership. Despite their reserved scale, internally these houses exhibit a heightened level of functionality. As with many of the examples analysed above, the concept of home has been reimagined to include a layering of functions and the flexibility of alternative living experiences. Some homes are built to accommodate a permanent work space or cater for multiple generations. Others have been designed to include an element of 'publicness' within them – an extended threshold to provide space for the transition from public street to private dwelling – to allow the building full use of its site area. However, despite their contemporary detailing and unconventional aesthetic, many of these projects remain attuned to the design principles of a traditional Japanese house: a flexible, multi-purpose living space with strong connections to nature. Further, each of these projects demonstrate a model for achieving housing density without destroying the integrity of an existing neighbourhood, and an approach to living small without undermining function or amenity.

Another approach to recently gain momentum in Tokyo is share housing. Concerned by the rapid rise of single-person dwellings (which equate to almost half of the city's households), there appears to be renewed interest in the development of collective or shared housing projects. The aim is to encourage socialisation, while also relieving some of the financial pressures associated with living alone. Projects such as Share Yaraicho also consider the need to live more sustainably, by improving the energy performance of buildings and their use of materials. This project seeks to address the wasteful use of resources that result from a culture of isolated living, while also providing a balanced variety of shared and private spaces, which allow residents to live harmoniously in close proximity. While the household demographics in Australia are less extreme, the rise of single-person households across the country is expected to continue. Almost a quarter of households in Greater Sydney contain only one resident, which is on par with the national statistics. However, across the inner city, single-person households make up 40% of the market, suggesting this is an important consideration in the development of new housing models.

The concept of recycling housing appears to be the newest trend identified in Tokyo. Despite its strong throw-away consumer culture and a broadly accepted life expectancy for housing of about 25 years, the city is starting to see more examples of house renovations. With Japan's population now in decline, a larger percentage of the country's existing housing stock is sitting empty. While the market excludes the houses themselves from its valuations of such properties, lower-income households are beginning to see this as an opportunity to secure home ownership. In purchasing such a site they effectively get a house for free. To save money, rather than tear it down and rebuild anew, they look for ways to retain the building and refurbish it to suit their needs. It would appear that because Japanese houses are typically designed and built with a shorter life expectancy they are easier to reconfigure. In Australia, we appear to be in an era where the reverse is true. We build housing with such a permanent aesthetic, that it is often quicker and cheaper to demolish and start again rather than attempt a major refurbishment.

In London, a lack of affordable housing options has started to drive millennials away from the city. Like Sydney, too many of London's young professionals are finding themselves stuck in the gap between social housing and traditional home ownership. There are growing concerns from local businesses about future productivity, with employers struggling to retain workers due to rising rental costs and long distance commutes. Like Sydney, London is suffering the effects of inadequate housing supply to meet demand, which continues to grow across the city. In an attempt to support London's "city makers", housing developer Pocket has begun to build compact one-bedroom "starter homes" and restrict their sale to those most in need. Eligibility for ownership of a Pocket home requires that you already live and/or work in the local area and earn under a certain amount. In some cases, particular occupations are prioritised based on an agreement with the local authorities. In developing their more compact version of a one-bedroom unit, Pocket observed shifting attitudes towards the idea of a home and its functionality. Given its targeted demographic of first-home buyers, the rationale was that the unit needed to serve more as a private retreat than a place for socialisation, as the city provided for the latter. Their approach echoes the frequently discussed idea that we have graduated from a possession-based to an experience-based lifestyle, and therefore the spatial values of our dwellings are changing.

This leads to discussions about which elements within a typical dwelling actually need to be private and which can be shared, in an effort to save money and reduce unnecessary duplication in higher density living environments. In a multi-residential development, does every dwelling need a laundry, study or guest bedroom? Would you prefer a large communal garden space or your own small private courtyard? Too often these design decisions are beyond the control of residents, who are forced to adapt their lifestyle to suit whichever ready-made dwelling they can afford. However, there is an alternative approach to home ownership which is gaining popularity, both in London and other European cities. Although co-housing isn't a new concept, its rebirth in the form of co-operative building groups is providing a much needed path towards flexible, affordable dwellings. While restrictive budgets often limit the degree of customisation across each individual unit, in such projects all design decisions are controlled by the building's future occupants and not a third party. In London, the Copper Lane development provided an opportunity for six like-minded families to establish a mutually supportive framework for living - an intentional community housed in a building designed specifically for them.

In Berlin, disheartened by the options available to them and keen to maximise the value of their investments, aspiring home owners are similarly establishing resident building groups (or *baugruppen*) to develop their own co-housing projects. Each group typically seeks the support of an architect to help navigate them through the build process. This co-operative approach also lends itself to experimentation and a new level of design freedom, as a result of all owners having direct involvement with the building's design. They are able to define their own quality-to-price relationship, deciding what to prioritise and where to make savings. In eliminating the profit margin of a private developer, the result is a higher quality product for less, which has placed new pressure on other developers to improve the standard of their own products. The projects explore opportunities for reducing the scale of each private dwelling, by granting its occupants collective access to services and facilities that are common and required less frequently. Throughout the design process, residents are able to develop relationships with each other before moving in, while at the same time establishing an approach to living collectively by which they all agree. What is most evident, having visited a number of these projects in Berlin, is their impact on the wider community. These self-initiated urban renewal projects are slowly reactivating some of the city's more impoverished neighbourhoods, and breathing new life into local communities. They mark the progression of the urban dweller from a mere consumer of housing to a initiator of neighbourhood renewal.

As we continue to debate the pros and cons of renting versus buying a dwelling in Sydney, there is no denying that a majority of young adults are currently facing the very real possibility of renting indefinitely. This being the case, perhaps rather than clamouring for our chance at the Australian Dream, we should instead redefine its meaning to better serve our contemporary needs and lifestyles. In cities like London and New York, a range of new, all inclusive, ready to move in housing products are entering the market. They represent a new attitude towards "the business of living", offering a flexible, rentable alternative for those looking to experience the social and financial benefits of a co-operative living environment. These corporatised communities operate halfway between a hotel and a serviced apartment, offering a typically small private bedroom with access to a variety of shared spaces and facilities, and marketed to tenants who prioritise convenience and reliability. They are commonly located in inner city areas with few existing housing opportunities, and look to establish themselves as a new destination point in the neighbourhood and encourage interaction with the local community.

Across the three examples I visited, each project varied with regard to lease flexibility (a minimum rental period of between one and twelve months). They operate as a subscription-based housing service, where you are paying to be part of their community and gain access to the range of services and facilities available only to members. You aren't paying rent for a dwelling, but rather signing up for a way of life, aimed at nurturing the development of your professional life and eliminating the routine distractions of domesticity. You are buying into a living experience that has been designed to mirror today's shifting attitudes towards ownership. In coming aboard you gain access to comfortable, quality, reliable housing, which doesn't impede your desire to retain mobility and freedom.

It is difficult to satisfactorily conclude this study, as it is little more than a first step in trying to develop a working model for compact living in Sydney. My initial interest in the topic of compact housing began as a challenge to the idea that a dwelling's physical size was a universal determinant for its liveability. This concept seemed to devalue the role of the architect, and question his or her ability to push the envelope of traditional housing design and improve spatial efficiency without compromising amenity. Therefore, at a minimum, may this report prove that liveability is not solely determined by dwelling size, but rather inclusive of a unique blend of physical and subjective attributes that when combined satisfy the living requirements of a specific household. Hopefully, it also provides a foundation for accepting that compact housing typologies have a role to play in our continued efforts to provide supportive and affordable housing across the city. The above series of projects provide a useful collection of design principles and operational procedures, from which we as architects can draw ideas and critique our own proposals for compact living.

The external facade of Heide & von Beckerath's R50 co-housing development in Berlin makes it difficult to identify lines of separation between dwellings

About the Author

Tom Rubenach is an architect based in Sydney and registered in New South Wales. He began working at Bokor Architecture + Interiors during his final year of the Masters of Architecture, before graduating from the University of Sydney in 2013.

During his time at Bokor, Tom oversaw a number of residential projects, ranging from stand-alone house alterations to multi-residential developments. Throughout this work, he developed a keen interest in the approaches and processes applied to the production of urban housing and, in light of emerging social trends and shifting cultural expectations, began to challenge the way we assign value to our living environments.

Tom suggests that architects need to work collectively to improve the level of understanding within the public sphere with regard to the role and responsibilities our profession entails. Therefore, in the context of this research, he has deliberately selected projects which highlight the importance of creative thinking - going beyond aesthetics to innovation in process - while also responding directly to the changing needs of the urban dweller.

He believes architects have an integral part to play in addressing today's urban challenges, and that the profession must demand greater involvement in, and recognition for, the development of solutions.

Tom is grateful for the opportunity to carry out this research and is hopeful it will lead others within the industry to actively pursue and challenge the ideas presented.

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Glossary

The following terms have been defined with respect to their use within this report:

affordable
Aside from the legislative definition of “affordable” housing (below), the term is used more generally to discuss the need to reduce the cost pressures of home ownership.

affordable housing
Unlike social housing, affordable housing is open to a broader range of households, including those with moderate incomes (80-120% of median). Affordable housing is managed in a similar way to the private rental market, often by a not-for-profit housing provider. Rents are typically set at either a discounted market rate or as a percentage of the household income. In addition to income level, your eligibility is determined based on your existing assests, and whether or not you would be able to secure adequate housing in the private rental market.

compact living
This report deliberately avoids giving any spatial parameters to the term “compact living” to avoid limiting the discussion to a single architectural approach. However, generally the term embraces any method of housing design that questions the true spatial value of our living environment and its compatibility with our contemporary way of life.

Congrès International d’Architecture Moderne (CIAM)
Also known as the International Congresses of Modern Architecture, CIAM was an organization founded in the late 1920s, comprising some of Europe’s most prominent architects. In a series of formal congress events, CIAM sought to spread the principles of the Modern Movement, focusing on the domains of architecture and design.

existenzminimum
Originating in Germany’s post-war era, the term “*existenzminimum*” stems from a promise outlined in Article 155 of the 1919 Weimar Constitution, which called for access to appropriate housing for all Germans. In an effort to quickly build as much cost-effective housing as possible, architects began to discuss the concept of the subsistence dwelling. Examining the minimally-acceptable standards for a dwelling’s size, its density, and access to fresh air, daylight, and green space.

family
The use of the term “family” refers to any household group of partnered or related individuals. Therefore, it includes households without children.

household
The use of “household” is indicative of any person or persons residing within a single dwelling. The term is inclusive of a person who lives alone, a group of unrelated individuals living together, as well as a family.

Residents of the BigYard co-housing development in Berlin share use of a large private courtyard garden, located between the site’s two buildings

rent stabilised
Rent stabilisation is a method of controlling the rental cost of certain dwellings. The city determines the maximum rate at which landlords can increase rental prices annually, while giving tenants peace of mind with regard to the long-term stability of their housing tenure.

social housing
Rental housing for households with very low income (less than 50% of median) or low income (50-80% of median), provided by either government agencies or not-for-profit organisations. **Note: This is not the same as affordable housing.**

subsistence dwelling
A term used to describe a dwelling that provides its occupants with the minimum level of amenity which allows them to support themselves. Refer to *existenzminimum* above.

The Australian Dream
Also known to as "The Great Australian Dream", the phrase comes from the long-held belief that home ownership in Australia will lead to a better life. The home is considered to be a model of your success and the foundation of long-term financial security. Typically, the term is used with reference to ownership of a detached dwelling on a quarter acre suburban block, within a supportive, family-orientated neighbourhood.

Image References

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Legend:
t = top
b = bottom
l = left
c = centre
r = right

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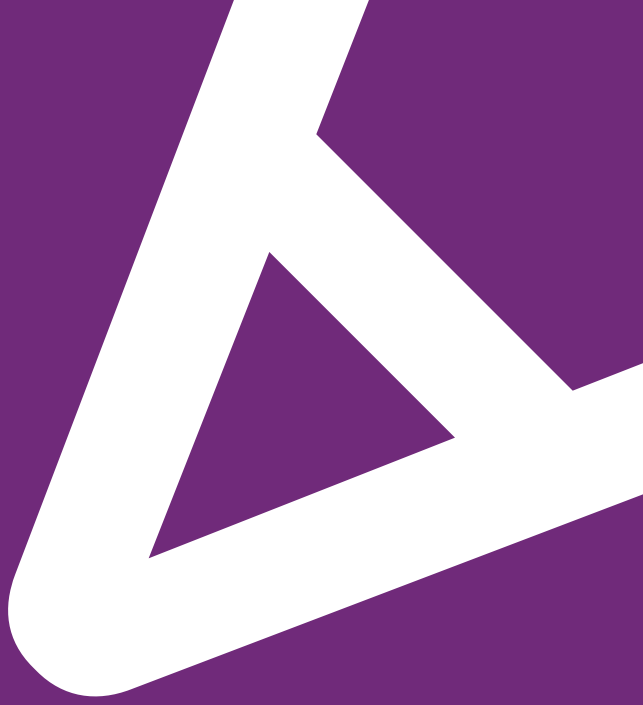

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