

Article

An Affordable Identity—Customisation Prior to Housing Construction in Australia

Lauren Carney¹ and Rongrong Yu^{2,*}¹ Habitat Studio Architects, Burleigh Heads, Gold Coast, QLD 4220, Australia; lauren.carney01@gmail.com² Australian Research Centre for Interactive and Virtual Environments (IVE), University of South Australia, Adelaide, SA 5000, Australia

* Correspondence: rongrong.yu@unisa.edu.au

Abstract: This paper presents a study that explores an affordable housing scheme which allows customisation prior to construction for owner-occupiers. Due to ongoing concerns about the economic fallout caused by the COVID-19 pandemic affecting large populations, the demand for affordable housing is increasing. In particular, low-income households continue to struggle with unaffordable rents throughout major Australian cities. Assailed by this growing affordability crisis and deemed environmentally unsustainable, Australian suburbs are in need of revitalisation. The implementation of mass customisation solutions can heighten the sense of identity within a community and also significantly increase occupant satisfaction. However, presently, there is a lack of studies discussing the financial model and design of affordable mass customisation solutions for housing. To address that gap, this paper employs the method of case studies by analysing five relevant cases from the perspectives of affordability and customisation. The results of this study indicate that there is great room for future improvement in what is currently claimed to be defined as affordable housing, in terms of both affordability and customisation. These results will potentially assist and provide guidance to future architects, developers and planners.



Citation: Carney, L.; Yu, R. An Affordable Identity—Customisation Prior to Housing Construction in Australia. *Architecture* **2022**, *2*, 245–254. <https://doi.org/10.3390/architecture2020014>

Academic Editor: Avi Friedman

Received: 18 February 2022

Accepted: 29 March 2022

Published: 7 April 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Keywords: affordable housing; customisation; case studies

1. Introduction

The growing global population necessitates housing be delivered both at a rapid pace and in consideration of sustainability [1]. Many regions are facing a housing crisis that is exacerbated by the ongoing COVID-19 pandemic due to economic factors and the decreased pace of construction operations [2]. In recent years, Australia's housing market has experienced periods of soaring property prices and severe rental shortages. The COVID-19 pandemic, together with interest rates being at historic lows, has further exacerbated the housing affordability crisis. Data from the Australian Bureau of Statistics (2021) show that home ownership rates for people aged under 40 are in decline. Low-income households especially continue to face unaffordable rents in major Australian cities [3]. If the current housing crisis is not addressed, then it will lead to significantly hampered labour productivity, increased social inequality and economic and financial instability.

The traditional suburban dream in Australia is becoming increasingly impossible in light of the country's current housing, environmental and social circumstances. Assailed by the growing affordability crisis and deemed environmentally unsustainable, Australian suburbs are in need of revitalisation in order to stay relevant in contemporary Australia [4]. Customisation of housing is an option that can heighten the sense of identity within a community and also significantly increase occupant satisfaction. As Jacob states, "Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody." [5]. Combatting urban sprawl with higher-density housing should not necessitate the sacrifice of such customisation. The aim of this research is to develop an affordable housing scheme which allows for customisation prior to construction

for owner-occupiers. This research explores the types and financial models of mass customisation solutions for housing, which could enable a new practice that allows individual lifestyles and personal preferences to be part of design/construction processes. Design guidelines for future developers, architects and planners have been developed, integrating financial models and case studies to realise increased customisation.

2. Background

2.1. Affordable Housing in Australia

Australia is beginning to follow in the footsteps of other nations that have used sustainable urbanism to improve the owner-occupier market by creating more affordable houses and lessening the impact that homes have on the environment. Affordable housing is the initiative taken by government bodies to ensure that each group of income earners within the country can afford housing, with a focus on low- or moderate-income households [6,7]. Projects sustained as a *Baugruppen*, or building group (BG), provide great examples of this and have been used in this article to identify design principles and missed opportunities in the existing literature [8]. The concept of BG originates from Germany and means that a collective of future residents are involved in the design process of houses, to identify a shared vision for their future home [9]. Australia's housing market is dominated by developers' drive for profits, and though its purpose is still to create a product that is user-orientated, it lacks a relationship with those who will call the result their home [4]. Increasing worldwide awareness of the importance of sustainability has invoked waves of experimentation and innovation to develop better ways to live, and consequently, also better ways to build. The unfolding housing affordability crisis is forcing people to get creative to take control of their money, their individuality and their homes. McGreevy [10] argues that the diversity and availability of affordable dwellings cannot meet people's expectations because the demand for affordability in established suburbs is high. Based on established research, there is already a clear demand for appropriately located, affordable and sustainable housing across a range of dwelling types [11]. Infill development allows for the revitalisation of existing areas, which can satisfy demands for desired locations.

Newton and Glackin [11] have developed a method to interpret how this development can occur, and their innovative arenas for residential precinct regeneration in the greyfield areas of Melbourne demonstrate how to meet such demands. Their conclusion determined that eight items aide this process, including new finance models and new design model innovations. As has been noted, Australia's housing market has revolved around developers' need to make profits; thus, removing the developer altogether paves the way for a solution towards affordability and individualisation [12]. An upheaval in the current housing market requires changes to existing methods of housing procurement. Sharam and Bryant [13] identified that, for medium-density housing especially, most if not all aspects of the process need to be altered, which includes but is not limited to developers, owner-occupiers, investors, financiers, building codes, taxation, consumer laws, strategic and statutory planning, land form, spatial relationships and construction types. Hamiduddin and Gallent [12] identified that, while in most countries speculative home building is the norm, there are some countries such as Germany and Switzerland within which group or community building is the rule, not the exception, and involves the concept of like-minded people pooling their finances to buy and build individualised homes within a single structure without the need for developers. Their design process is intensive, and their goal is to establish and enable personalisation within private spaces and gain collective agreement in relation to other realms of the property, i.e., communal spaces. They have observed that while the first motivation is generally affordability, the second is customisation. The benefits of reduced costs, combined with the potential for individualisation to match personal needs and preferences, are core values defined by Brown et. al. that see BG as rooted in garnering both a sense of collective identity and appropriate costs.

2.2. Mass Customisation prior to Construction

There is a gap in the existing literature which fails to fully explore the connection between mass customisation technologies and their application in housing construction. Research focused on that area, combined with the financial and social model that the Baugruppen mode of development has, can tackle some of the current issues of the Australian housing market. As observed by Benos and Durate, the housing market is dominated by the production of a limited variety of houses which are either repeated or re-interpreted in response to market analyses [14]. Such production is what results in the uniformity of suburbs and the disintegration of the individuality of homes [15]. The idea of customisation is one that requires greater time and effort, and therefore more money. Finding a way to mass produce customisation can streamline processes to make customisation economically viable. The concept of mass production was introduced by Henry Ford in his development of the Ford Model T as a car for everyone. The concept's application to architecture has been experimented with by many towards the goal of achieving affordable housing, including by Walter Gropius and Le Corbusier; however, such products thus far have had limited success.

There are risks in developing housing using the BG model, as there are many unknowns that may increase time and cost. Crabtree and Hes [16] state that the current housing sector is entrenched in its reluctance to deviate from existing methods. However, examples of housing constructed by Nightingale Housing, which fit into a very niche, unprotected section of Australia's housing economy, prove change is being sought and people are willing to be involved. Doyon and Moor identified that the BG model used in Nightingale Housing enables customisation through a reductionist approach [17]. Jeremy Macleod, the Managing Director of Nightingale Housing, celebrates the model as a system for delivering sustainable, affordable, liveable and socially engaged means of living and creating. Seemann and Jahed [8] recognise that the BG model is a venture in collaborative housing that responds to a growing need for affordable urban homes with a pronounced social network within an existing community. This method looks to not only alleviate fiscal pressures and produce a sustainable urbanism, but also seeks to humanise the development industry [17]. There are several other areas in which resident participation in the design process is potentially beneficial. For example, residents may be involved in making changes to local systems—including codes, laws, standards, etc.—to enhance their sense of identity as well as contribute to the growth of the suburb [18]; such collaboration between designers, builders and craftspeople in the design and construction process can potentially enhance the quality of the design and construction of housing while also reducing building costs [18].

A one-size-fits-all approach for manufacturing is not only becoming irrelevant but also unaffordable. While volume home building continues to produce a variety of options for different clients, the need to reduce urban sprawl has produced a better typology for customisable housing. The lack of consideration towards rental markets leaves many gaps to be filled; therefore, the inclusion of Baugruppen into the rental sector could benefit both the occupiers who are limited to renting as well as potential investors. People who invest would be silent partners in the sense that they put up the money and entrust its design and function to the architecture staff. The reason this is viable is because such rental properties could be built in the same manner as traditional BG methods, and hence money would be saved. This could establish an availability for affordable, social and sustainably conscious building typologies that seek to humanise the development process through discussions and choices. For customisation to be extensively enabled in rental properties, a new system must be specifically devised that allows more alterations to be made, while avoiding risks for owners and renters alike. The allowance of customisation in rental properties is of value because it enables an expression of individuality for those who occupy them. A house is actualised into a home through an expression of the occupants' individual preferences reflecting their identity [19]; thus, individualised design is a significant variable for occupant satisfaction [20].

The use of software tools and parametric, axiomatic and modular designs all have their place in the development of mass customisation. Griz and Amorim [21] describe that shape grammars can be utilised to prescribe alterations prior to occupation; they are a set of rules that constitute a customisation grammar based around a central pitching point to create an apartment building. A method to introduce value via customisation is identified by Hentschke and Formoso [22] and is in agreement with Rocha's proposed conceptual framework of strategies for defining scope in house building; the core categories of decision are customisation units, solution spaces and classes of items. The theory of supports created by John Habraken was one of the most influential examples of an articulated quest for user participation and diversity [14]; the theory suggested two elements, with supports being the rigid parts of design and infills being the flexible part [23]. Habraken later identified a system of synthesis to streamline the process which consisted of a spatial system and function system, a structural and construction system, and a stylistic system. There are various opinions for how to proceed with mass customisation in housing; however, much of the existing literature fails to identify a viable financial model that would make such options achievable [13], and its relationship with clients doesn't extend much beyond clients simply picking and choosing from a finite range of options on a computer.

The existing literature pertaining to mass customisation has been reviewed; there is a lacking of material pertaining to individual designs for medium-density housing. The application of a viable financial model in combination with the principles discovered in the mass customisation literature highlights missed opportunities within our housing market. O'Callaghan and Pickett [4] remark that there is a lack of recognition of both density and diversity being non-cohesive in our suburbs, and call for it to be addressed.

3. Methodology

To address the gap, a case study method was employed in this research. Case studies are a commonly used method to identify common characteristics, approaches or strategies across multiple cases. In this study, we adopted a case study method to explore the common characteristics of existing cases' affordability and customisation levels, and to further discuss the recommendations for future strategies in affordable housing design. For this study, five cases were selected for analysis, and elements of their successful output have contributed to the creation of the design framework. The selection criteria are: (1) The cases should involve the occupant's customisation prior to construction; (2) The cases should be advertised as affordable; (3) Australian cases should be prioritised for selection; (4) The cases should be of housing built within the last ten years, so that they reflect the most recent practices.

Three of the five selected cases are located in Australia. All the selected case studies are infill developments, with one being a retrofitted existing building, and are all within major cities of their respective countries. All but one have provided their residents with the ability to customise their home prior to construction; that case doesn't offer the transient population the benefit of flexible living while they rent for either a short or long period of time. The analysis addresses problems of how untraditional financial models and customisation can be combined to create affordable infill developments, from the perspectives of the financial model, design and construction, cost assessments and the level of customisation.

4. Case Studies

4.1. Selected Cases

4.1.1. Case Study 1: Ritterstrasse 50

Ritterstrasse 50 was built in 2013. It is located at Ritterstraße 50, 10969 Berlin, Germany, and was designed by Architects Verena von Beckerath, Jesko Fezer, Tim Heide, Christoph Heinemann, Susanne Heiss and Christoph Schmidt.

This case study exemplifies the true nature of the BG experience. From conception to completion, the project was a collaborative process between the architects, builders and residents. It was a labour of love that grew from desires and negotiations that continued

through all aspects of the entire design and construction process, including the apartments and community spaces. The design concept is based on “a compact and efficient structure with carefully detailed connections on different scales” [24]. The architects facilitated the design process, but everything from the communal spaces to the window fittings were collectively decided upon by the occupants [24]. The sizes of individual units were decided by individual investment amounts, with additional costs equally added by communal or public spaces. The costs were €2150 per square metre, which is approximately €800 less per square metre than the median apartment price in the same area [25]. The project offers adaption and flexibility for the residents, which is presented via interior fittings, materials and some surfaces left unfinished, allowing for customised layouts of the apartment [24]. This modest cost is a product of completing the units but not presenting them as entirely “finished”. This allows the owners to continue a journey of personalisation, as “a project is not finished with the architects leave—typically they start and finish in a certain period in the life of a building” [25].

4.1.2. Case Study 2: ENVI Micro Village

The *ENVI Micro Village* was built in 2018 by DegenhartSHEDD. The village is located at Lennenburg Street, Southport, Australia.

The *ENVI Micro Village* is the first of its type in Queensland, Australia, a micro village dividing one lot into ten mini lots as a one-of-a-kind infill development [26]. The project achieves a high level of density in a medium-density format. This requires specific design considerations that maximise residents’ experiences. Sufficient natural light and high ceilings, combined with clerestory windows, skylights and a clever design of vertical spaces, makes the spaces feel much larger than their actual size [27]. With no body corporation in place, and although each home is connected to its neighbour, they act as individual units. The design was initiated by Gold Coast architect Amy Degenhart, with the idea to create affordable homes in the Gold Coast CBD. Each lot was sold prior to development beginning, seven of which were purchased by first-home buyers. Degenhart worked collaboratively with each client to ensure their essential needs were part of their individual homes, which could include a car or moped parking, one, two or three bedrooms and a differing materiality. For this development, DegenhartSHEDD created the BUBBL Formula, which aims to achieve housing affordability using three processes; density, design and lifestyle. In addition, the location of the Southport CBD being close to public transportation can reduce the occupant’s dependency on car use. The process was design-driven, using infill development to provide a lifestyle for those wanting to challenge conventional “homes” and create valuable, thoughtful designs [28].

4.1.3. Case Study 3: Nightingale 3.0

Nightingale 3.0, located at 209 Sydney Road, Brunswick, Australia, was designed by Austin Manyard Architects and is under construction.

The goal in creating the Nightingale project was to present a triple bottom line for developing financially, socially and environmentally sustainable developments [29]. The use of pooled resources and shared spaces allows occupants to have larger homes, while creating ample communal space for chores and neighbourly interactions. Their goal is to simplify and humanise the development process along with the building itself. To realise this, choosing a lot close to public transport and urban facilities allows for zero provisions for car parking, which contributes majorly to the environmental sustainability of the development [29]. The design of Nightingale involves the end-buyers. The Nightingale Group is one of the first associations to bring a new financial and development model to Australia. It aims to realise the financial, social and environmental returns simultaneously [30]. Nightingale projects are funded by multiple financial institutions, architects and future residents. Both the building and operating costs are reduced due to appropriate designs such as passive design strategies, reduction in parking and private laundries, etc., and the

houses were pre-sold to reduce marketing costs, real estate agents, etc. Profit margins were kept low as well, contributing to the affordability of the *Nightingale* housing [31].

All of the *Nightingale* projects aim to connect to existing communities to create a “fine-grain and tactile pedestrian experience for passersby, and engagement with tenants who can provide a third space.” In this context, the term “third place” is traditionally a public space that has birthed a social construct for community identity, for example, a corner café, park, pub or anywhere that has meaning to the people of the community where they congregate and socialise causally on a regular basis. *Nightingale* facilitates this by providing retail frontages, exhibited in their renders as places for the wider community to enjoy [32].

4.1.4. Case Study 4: WeLive

WeLive is an apartment complex designed by the *WeWork* company and designer Quinton Kerns (an urban-compact-living design expert) which was completed in 2013. It is located at 110 Wall Street, New York, NY, USA.

This case is a “utopian” apartment complex that intends to disrupt city living with a hybrid building that combines home, working and social spaces [33]. The evolution of its three modules fills a need for first, second and third places, which are defined as the three areas we need as humans to have a fulfilled and connected life [34]. *WeLive* was built on the understanding that this increasingly digital age creates opportunities and methods for communities to be socially connected. Communities in *WeLive* are connected digitally, with community event notifications conveniently delivered to residents by an app. This development seeks to disrupt the white noise of seclusion with interaction and community, and by actively seeking and creating connections within the three types of spaces [35]. *WeLive* follows the *WeWork* model, incorporating the concept of co-working into co-living. Residents do not need to lock-in to any long-term leases. Rooms are all furnished, and all utilities and maintenance are dealt with via an app. All the interiors of the units are cleverly designed to maximise the utility of spaces via furniture design and spatial planning [36]. The *WeLive* case study enables its occupants to customise their homes in a simple way that really allows each person to be the custodian of their space, no matter how long or short their stay is. The implementation of peg boards in kitchens and living areas seems like a small addition; however, many inhabitants appreciate such an ability to change their spaces to their own liking. Examining this very niche, very simple practice of customisation, it is possible to combine it with other means of individualisation.

4.1.5. Case Study 5: 26BS

26BS was built in 2018 by John Kingsely Architects and is located at Bath Street, Portebello, Edinburgh, Scotland.

This Baugruppen-built development shook the neighbourhood with its different design and “hippie” ideals [37]. Four separate families purchased the site and funded the building of this four-storey unit block to suit their individualised lifestyles and achieve ongoing environmental sustainability. This scheme is passively designed and uses CLT to reduce levels of embodied energy, while renewable energy produces all of the required electricity. Residents were highly involved in its design, and since 75% of residents were from the area, it was decided early on that the building must contribute to a sense of place for the existing community [38]. The building was designed with a central shared staircase and a shared garden on the roof. The selection of materials included red sandstone on the main façade and Reglit cast glass. All residents reached the consensus that using low energy consumption and natural materials for low maintenance were important [38]. The houses were built at cost since the builders’ profit margin was removed.

4.2. Case Study Analysis

The case studies were assessed from two aspects: affordability and customisation. Table 1 shows the affordability assessment of the selected cases. To assess affordability,

we have adopted a definition that a house is considered affordable if the housing costs do not exceed 30% of the household's income, which is a common indicator of housing affordability in Australia [39]. In this study, the definition of affordability is primarily aligned with the above calculation, and other factors are also taken into consideration if they are relevant/contribute to affordability. Those factors include cost reduction related to land (density, infill development), construction (construction material, façade material, modular, prefabrication) and building operation (sustainability factor, parking). For affordability, 11 parameters were analysed, representing the mostly commonly discussed elements regarding housing affordability. For the three cases in Australia, we calculated affordability based on the average household income in the local area where the cases were situated. The affordability of the two cases in other countries was not assessed. The benchmarks for the other parameters are all based on information from various sources (listed in the table captions). From Table 1, we can see that both the *ENVI Micro Village* and *Nightingale 3.0* are claimed to be affordable; however, *Nightingale 3.0* is actually outside the range of what is considered affordable housing. Four out of five selected cases have a focus on sustainable design to reduce ongoing living costs and save energy via various measures including the use of sustainable construction material, the encouragement of public transport use and other passive design strategies. Prefabricated construction, also referred to as offsite construction, is considered a sustainable construction method due to its benefits such as fast delivery, lower construction costs and minimised on-site waste [40,41]. It is rather surprising that almost none of the selected cases utilise a prefabrication method, as presently prefabrication is among the most promising directions for future affordable housing approaches. The selected cases are similar in terms of all being infill developments and medium-to-high density, and most of them save costs through the area for parking and by implementing sustainable design factors. Infill development is a creative way to retrofit urban sprawl through new economic incentives [18]. The *ENVI Micro Village* provides a carpark; however, their residents are also given the option of not having a parking space to enhance affordability. Among the selected cases, *WeLive* presents unique features in terms of not including sustainability factors and not actually claiming to be affordable; the reason for this may be due to the fact that it is mainly built for renting rather than for sale.

Table 1. Affordability analysis (information in the table were from various sources including [24–29,32–35,37,38]).

Selected Cases		Affordability Calculation		Cost Reduction Related to Land			Cost Reduction Related to Construction				Cost Reduction Related to Building Operation	
Name	Created by/Group	Cost	Advertised as Affordable	Affordable?	Density	Infill Development	Construction Material	Façade Material	Modular	Prefabrication	Parking	Sustainability Factor
26BS	Collective custom build	-	Yes	Yes	Medium	Yes	CLT	Zinc, Red sandstone, glass Bricks, Wire	Yes	No	No	Yes
ENVI Micro Village	BUBBL	\$300,000–500,000	Yes	Yes	Medium	Yes	Brick, Steel Frame	Screening, Cladding render	No	No	Yes	Yes
Nightingale 3.0	Nightingale, Bauruppen	\$552,000–1.03 million	Yes	No	High	Yes	Concrete	Concrete, Mesh	No	No	No	Yes
Ritterstrasse 50	Bauruppen	-	Yes	-	High	Yes	Timber, Steel, Concrete	Timber, steel	No	No	No	Yes
WeLive	Retrofit to Rent	\$3250 + /Month (rent)	No	No	High	Yes	Concrete, retrofit	Concrete	No	No	No	No

Table 2 shows the customisation analysis of the selected cases. There are six parameters for evaluating the customisation level, including the extent of customisation, conception, interior and exterior size/space, communal spaces, visual relationship with the community and provision of community connections. All the parameters are assessed based on information from various sources (listed in the table captions). From the table, we can see that

all of the five selected cases involved the residents in the interior design process, and four out of five involved residents in the concept design process. This is because concept and interior design are highly relevant to residents' living styles, habits and individual needs. Residents' involvement in such areas are key for their post-occupancy satisfaction. For the exterior design process, all cases except for *Nightingale 3.0* allowed resident involvement. In four out of five cases, residents were involved in the design of community connections. Generally, the areas of least customisation were the size/space, communal spaces and the visual relationship with the community, which are areas where architectural design expertise is more of a necessity. For the design of communal spaces, akin to the design of other public spaces in cities, the involvement of all stakeholders including residents, designers and policy makers in the design process can be beneficial [18]. Among the five selected cases, *26BS* had the highest customisation level, with all parameters involving the input of future residents. It was followed by *Nightingale*, where only the size/space did not have future residents' involvement; that may be due to the fact that the *Nightingale* project usually consists of one- or two-bedroom, small apartments, so there is not much space for residents to customise the size of the unit. The lowest level of customisation was for *Ritterstrasse 50*, where all community-related parameters do not have the future residents' input; architects controlled the communal space design in that building project.

Table 2. Customisation analysis (information in the table were from various sources including [24–29,32–35,37,38]).

Name	Extent of Customisation	Conception	Interior	Exterior	Size/Space	Communal Spaces	Relates to Community Visually	Provides Community Connection
<i>26BS</i>	Occupants were able to decide on the floor plan/number of rooms, all aspects individualised.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>ENVI Micro Village</i>	All aspects individualised, designed with the architect but not with each other	Yes	Yes	Yes	Yes	No	No	Yes
<i>Nightingale 3.0</i>	Survey-provided response about exterior, elements and internal spaces, room numbers.	Yes	Yes	Yes	No	Yes	Yes	Yes
<i>Ritterstrasse 50</i>	Occupants were able to decide on the floor plan/number of rooms, all aspects individualised.	Yes	Yes	Yes	Yes	No	No	No
<i>WeLive</i>	Elements of each room can be individualised.	No	Yes	No	No	Yes	Yes	Yes

Based on the affordability and customisation analysis, the extent of customisation in the selected cases is very good, especially for concept design and interior design. Residents can be involved in the decision-making process regarding the room number, floor plan, exterior design, elements of the interior, etc. From the perspective of affordability, it is advisable for more budget control measures to be implemented where possible, such as cheaper construction methods including prefabrication. In most of the selected cases,

sustainable design factors were taken into consideration, especially sustainable materials and the utilisation of public transport.

5. Conclusions

This study utilises a case study methodology to develop an affordable housing scheme that allows customisation prior to construction for the owner-occupiers. Based on the analysis of affordability and customisation, recommendations for future affordable housing developments are developed. The method for minimising costs includes adopting sustainable design strategies such as passive design strategies, the use of sustainable construction materials, encouraging the use of public transportation and adopting sustainable construction methods such as prefabrication.

The areas of housing design which future residents can become most beneficially involved in are the concept design and interior design processes, since those are most related to the residents' lifestyles. External façades can be individualised by assigning a façade treatment to each room based on discussions with future residents. Currently, most community-related designs such as community connection are typically not being fully discussed with residents; it may be a challenge to generate consensus among residents on such topics. *WeLive* is a particularly interesting model which allows maximum customisation for each apartment, while also creating a strong sense of community for its residents.

From a financial perspective, a provision for rental or investment properties could also be added to cater to those who want to rent and those who want to have investment properties. The opportunity exists for architects to instigate the process and then work with the potential tenants of the residence to customise their homes according to their individual designs, needs and lifestyles.

Author Contributions: Conceptualization; formal analysis; methodology writing—original draft preparation, L.C.; supervision, writing—review and editing, R.Y. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Riffat, S.; Powell, R.; Aydin, D. Future cities and environmental sustainability. *Future Cities Environ.* **2016**, *2*, 1. [CrossRef]
2. Li, X.; Zhang, C. Did the COVID-19 Pandemic Crisis Affect Housing Prices Evenly in the U.S.? *Sustainability* **2021**, *13*, 12277. [CrossRef]
3. Baker, E.; Daniels, L.; Pawson, H.; Baddeley, M.; Vij, A.; Stephens, M.; Phibbs, P.; Clair, A.; Beer, A.; Power, E.; et al. Rental Insights: A COVID-19 Collection, Australian Housing and Urban Research Institute Limited, Melbourne. Available online: <https://www.ahuri.edu.au/research/research-papers/rental-insights-a-covid-19-collection> (accessed on 10 February 2022).
4. O'Callaghan, J.; Pickett, C. *Designer Suburbs: Architects and Affordable Homes in Australia*; NewSouth Publishing; University of New South Wales Press Ltd.: Sidney, Australia, 2012; pp. 1322–1507.
5. Jacobs, J. *The Death and Life of Great American Cities*; Random House: New York, NY, USA, 1961.
6. Ezennia, I.S.; Hoskara, S.O. Exploring the Severity of Factors Influencing Sustainable Affordable Housing Choice: Evidence from Abuja, Nigeria. *Sustainability* **2019**, *11*, 5792. [CrossRef]
7. Leishman, C.; Rowley, S. Affordable Housing. In *The SAGE Handbook of Housing Studies*; Clapham, D.F., Clark, W.A., Gibb, K., Eds.; SAGE Publications Ltd.: Newbury Park, CA, USA, 2012; pp. 379–396.
8. Seemann, A.-K.; Jahed, C.; Lindenmeier, J. Joint building ventures as a new instrument for urban development: A qualitative analysis of Baugruppen in Freiburg, Germany. *Hous. Stud.* **2019**, *34*, 1445–1464. [CrossRef]
9. Collaborative Housing. Available online: <https://www.collaborativehousing.org.au/stories-building-groups#:~:text=A%20building%20group%20is%20often,Berlin%20are%20now%20baugruppe%20projects> (accessed on 14 March 2022).
10. McGreevy, M.P. Housing Diversity and Affordability: The Effects of 35 Years of Exclusionary Land Use Regulations on Housing Affordability in Adelaide, South Australia. *Urban Policy Res.* **2018**, *36*, 336–353. [CrossRef]
11. Newton, P.; Glackin, S. Understanding Infill: Towards New Policy and Practice for Urban Regeneration in the Established Suburbs of Australia's Cities. *Urban Policy Res.* **2014**, *32*, 121–143. [CrossRef]
12. Hamiduddin, I.; Gallent, N. Self-build communities: The rationale and experiences of group-build (Baugruppen) housing development in Germany. *Hous. Stud.* **2015**, *31*, 1–19. [CrossRef]

13. Sharam, A.; Bryant, L.; Alves, T. De-risking development of medium density housing to improve housing affordability and boost supply. *Aust. Plan.* **2015**, *52*, 210–218. [CrossRef]
14. Benros, D.; Duarte, J.P. An integrated system for providing mass customized housing. *Autom. Constr.* **2009**, *18*, 310–320. [CrossRef]
15. Rahman, A.; Harding, A. Spatial analysis of housing stress estimation in Australia with statistical validation. *Australas. J. Reg. Stud.* **2014**, *20*, 452–486.
16. Crabtree, L.; Hes, D. Sustainability Uptake in Housing in Metropolitan Australia: An Institutional Problem, not a Technological One. *Hous. Studies* **2009**, *24*, 203–224. [CrossRef]
17. Doyon, A.; Moore, T. The acceleration of an unprotected niche: The case of Nightingale Housing, Australia. *Cities* **2019**, *92*, 18–26. [CrossRef]
18. Mehaffy, M.W.; Michael, W.; Kryazheva, Y.; Rudd, A.; Salingaros, N.A. *A New Pattern Language for Growing Regions: Places, Networks, Processes*; Sustasis Foundation: Portland, OR, USA, 2020.
19. Stets, J.E.; Burke, P.J. Identity Theory and Social Identity Theory. *Soc. Psychol. Q.* **2000**, *63*, 224–237. [CrossRef]
20. Erasmus, A.C.; Christie, L.; Kleyn, J. Townhouse residents' use of interior products in the social zones of their homes as a demonstration of their need for uniqueness. *Int. J. Consum. Stud.* **2016**, *40*, 14–23. [CrossRef]
21. Griz, C.; Amorim, L.; Mendes, L.; Holanda, M.A.; Carvalho, T. A Customization Grammar: Describing the customization process of apartment design. *Int. J. Arch. Comput.* **2017**, *15*, 203–214. [CrossRef]
22. Hentschke, C.S.; Formoso, C.T.; Rocha, C.G.; Echeveste, M.E.S. A Method for Proposing Valued-Adding Attributes in Customized Housing. *Sustainability* **2014**, *6*, 9244–9267. [CrossRef]
23. Habraken, N.J. Type as A Social Agreement. In Proceedings of the Asian Congress of Architects, Seoul, Korea, 7–11 November 1988.
24. R50—Cohousing/ifau und Jesko Fezer + Heide & von Beckerath. Available online: <https://www.archdaily.com/593154/r50-nil-cohousing-ifau-und-jesko-fezer-heide-and-von-beckerath>. (accessed on 10 February 2022).
25. Bridger, J. Don't Call It a Commune: Inside Berlin's Radical Cohousing Project. Available online: <https://metropolismag.com/projects/dont-call-it-a-commune-inside-berlin-radical-cohousing-project/> (accessed on 10 February 2022).
26. The Bubbl Formula. Available online: <https://www.bubbl.com.au/> (accessed on 10 February 2022).
27. ENVI Micro Urban Village. Available online: <https://www.worldbuildingsdirectory.com/entries/envi-micro-urban-village/> (accessed on 14 March 2022).
28. ENVI Urban Mirco Village. Available online: <https://www.degenhartshedd.com.au/envi> (accessed on 10 February 2022).
29. Nightingale Terrace House. Available online: <https://maynardarchitects.com/944612688034> (accessed on 10 February 2022).
30. Perinotto, T. Nightingale Growth Set to Explode with \$300 Million Finance Fund. Available online: <https://thefifthestate.com.au/innovation/residential-2/nightingale-growth-set-to-explode-with-300-million-finance-fund/> (accessed on 11 March 2022).
31. Bleby, M. Nightingale Housing Model Comes a Cropper. 2021. Available online: <https://www.afr.com/property/commercial/nightingale-housing-model-comes-a-cropper-20210602-p57xe5> (accessed on 10 February 2022).
32. ArchitectureAU. Available online: <https://architectureau.com/articles/nightingale-3-designs-unveiled/> (accessed on 10 February 2022).
33. Benjy, H.-B. A Week Inside WeLive, the Utopian Apartment Complex That Wants to Disrupt City Living. Available online: <https://www.gq.com/story/inside-welive> (accessed on 10 February 2022).
34. Jeffres, L.W.; Bracken, C.C.; Jian, G.; Casey, M.F. The Impact of Third Places on Community Quality of Life. *Appl. Res. Qual. Life* **2009**, *4*, 333. [CrossRef]
35. Mathews, T.; Dolley, J. Many People Feel Lonely in the City, but Perhaps 'Third Places' can help with that. The Conversation. Available online: <https://theconversation.com/many-people-feel-lonely-in-the-city-but-perhaps-third-places-can-help-with-that-92847> (accessed on 10 February 2022).
36. Inside WeLive, WeWork's Dorm-Style Take on Urban Housing. Available online: <https://www.wired.com/2016/04/inside-welive-weworks-dorm-style-take-urban-housing/> (accessed on 14 March 2022).
37. Alter, L. This Scottish "Baugruppe" Could Be the Future of Housing. Available online: <https://criticalmasstimber.home.blog/2019/11/09/this-scottish-baugruppe-could-be-the-future-of-housing/> (accessed on 10 February 2022).
38. 26BS. Available online: http://johnkinsleyarchitects.co.uk/portfolio_page/26bs/ (accessed on 10 February 2022).
39. Rowley, S.; Ong, R.; Haffner, M. Bridging the Gap between Housing Stress and Financial Stress: The Case of Australia. *Hous. Studies* **2015**, *30*, 473–490. [CrossRef]
40. Tam, V.W.Y.; Hao, J.J.L. Prefabrication as a mean of minimizing construction waste on site. *Int. J. Constr. Manage.* **2014**, *14*, 113–121. [CrossRef]
41. Navaratnam, S.; Ngo, T.; Gunawardena, T.; Henderson, D. Performance Review of Prefabricated Building Systems and Future Research in Australia. *Buildings* **2019**, *9*, 38. [CrossRef]