Adjustable housing:
lessons for industry from self-organised and co-managed living

Philip Graham
PhD Candidate

University of Reading

UK COLLABORATIVE CENTRE FOR HOUSING EVIDENCE

Adjustable housing:
lessons for industry from self-organised and co-managed living

PhD Candidate:
Philip L. Graham

Supervisor:
Prof. Flora Samuel - Professor of architecture in the built environment

Co-supervisors:
Prof. Sarah Sayce (late) - Professor of sustainable real estate
Prof. Geoff Meen (emeritus) - Professor of applied economics

Examiners:
Prof. John Connaughton - Professor of sustainable construction
(University of Reading, UK)
Prof. Sofie Pelsmakers - Professor of architecture and housing design
(Tampere University, Finland)

A thesis submitted for the degree of Doctor of Philosophy

School of Architecture,
School of the Built Environment,
University of Reading

September 2022

This research was enabled by Cullinan Studio (architects) and generously funded by the UK Collaborative Centre for Housing Evidence

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.
Philip Graham

“In so far as something is designed for everyone, that is as a collective starting point, we must concern ourselves with all conceivable individual interpretations thereof - and not only at a specific moment in time, but as they change in time.”

Herman Hertzberger (2005, p. 92)

Acknowledgments

I chose to pursue this doctorate because it gave me space to explore ideas and frustrations in architectural practice. It was also a chance to give my young family the flexibility to maximise available career and educational opportunities, at a critical stage for both. In these regards, I have been successful, not least because the flexibility of research allowed me to manage the twin challenges of homeschooling and a changing business environment, as caused by the Covid-19 lockdowns. Nevertheless, in juggling these responsibilities, I have no doubt caused consternation for others, especially once it became clear that the privilege of homeschool was going to produce a much longer research programme than I had originally envisaged. At home these are Rhannon and our two daughters, Elin and Iola. At work these are my colleagues at Cullinan Studio. Lastly, at the University of Reading, these are my supervisors, Professors Flora Samuel, Geoff Meen and Sarah Sayce - Sarah having sadly passed away in November 2021. Our many hours of cross-disciplinary discussion produced a fascinating array of new insights from which I think we all benefited and to which I hope I have done justice. To all of these - and my examiners, Professors John Connaughton and Sofie Pelsmakers who indulged me in a 4.5 hour viva - I am very grateful.

Abstract

When their needs change, UK homeowners tend to adjust their housing by making house moves or building alterations. In the UK's low liquidity housing market however, people on the edges of homeownership lack both choice and the funds to trade-up, whilst in higher density areas, alterations are hard or impossible to make. In an age of longevity, precarity and episodic changes in housing needs, these factors mean some households experience inappropriate housing for longer. To meet this urgent but largely unacknowledged need for real choice over time, this practice-based thesis develops a transdisciplinary framework for improving adjustability during use. Taking a capabilities approach, I consider two housing models, each claiming to provide solutions for people whose needs are not met by the mainstream market.

Drawing on stakeholder interviews, I ask, (1) What characteristics provide owners with longer-term adjustability? (2) What industry changes are needed to make adjustable housing attractive to developers? and, (3) How knowledge from the fields of architecture, economics and real estate might be combined to describe and implement 'adjustable housing'? My findings suggest that adjustability is not only about space (normally the primary consideration of architects), but is also a function of tenure and shared housing environment. These may be thought of as three dimensions of adjustability : *adjustable dwellings*, through which the housing density can vary over time; *adjustable tenure*, that gives residents an equity stake that can go down as well as up; and *adjustable infrastructure*, so that people have shared amenities and circulation that they can meet in, and meet about. This idea of living together separately, is less radical than cohousing but also - as I show - less costly, risky and exclusive to deliver, I identify six ways that regulation, planning and design could become more scenarios-led, and conclude that the architectural and real estate industries need to work more closely if they are to change the structure of housing demand in the UK.

Preface

By 2015 I had become disillusioned with the UK housing projects that I had been leading since shortly after the 2008 financial crisis. On the one hand, I was reading literature from economics and housing market analysis, from which I was becoming aware that changes in lending and interest rates had caused a spike in housing demand. On the other hand, I was working for housebuilders and housing associations whose core objective was to maximise the supply of new 'units', no matter how small and inflexible their design. This was because, in the public imagination, the UK's affordability problems were due to a supply shortage and therefore housing architecture had become a numbers game.

At the time, I was living in a small flat whilst working for one of the UK's leading architects (Cullinan Studio, London), where Ted Cullinan's idea that *"architecture is a social act"* has led myself and colleagues to ask, *"What is good, ordinary housing?"* Yet, despite this context, I was no more able to design what I believed to be 'good', purposeful housing, as I was to improve my own housing situation. This powerlessness in the face of market and political forces was cemented by the scale of bullying, exploitation, greed and cost-cutting that I saw in the wider housebuilder industry. Despite our best endeavours in practice, this environment could not produce the socially valuable opportunities that good housing could bring.

An opportunity to develop these questions came in 2015 from New London Architecture - a centre for the built environment. The NLA's *'New ideas for housing'* competition gave me and some colleagues at Cullinan Studio a reason to submit ideas. Despite being an architect, ours was one of the few entries that considered the relevance of land and finance to housing outcomes, albeit self-taught. Nevertheless, our entry attracted interest from others including Yolande Barnes (then at Savills and now Chair of the Bartlett Real Estate Institute, UCL) and my research partner at the time, Zohra Chiheb (an architect at Levitt Bernstein, London). A cross-disciplinary collaboration with some other, like-minded entrants

and with some mentoring from Yolande, turned into the practice-based research collective, *Appropriate Housing*. The remit of this small group was primarily to facilitate knowledge exchange between housing market economics, real estate and architects. To develop some of my emerging ideas, I was fortunate to receive a *RIBA Research Trust Award* (2017-18). Combined with the platform of practice and some flexibility on time, we were able to build a network of socially-motivated real estate actors that included landowners, developers, cohousing experts, development consultants, social impact investors, architects and academics.

Buoyed by this work, and realising the dangers of having 'a little knowledge', I was successful in securing funding from the *UK Collaborative Centre for Housing Evidence (CaCHE)* to progress to the doctoral research that follows. My proposal was to design a model for bringing together multiple stakeholders whose combined equity could unlock what I called, 'appropriate housing'. It was at this point, however, that I was exposed. My economics supervisor, Prof. Geoff Meen (applied housing economist, now emeritus professor at the University of Reading) was quite firm: *"The market decides what good housing is, so if architects have a problem with the outcomes, they need to start by critiquing the function of the housing market itself."*

Here began a three-year, three-way conversation, first between Geoff, myself and my lead supervisor, Prof. Flora Samuel (specialising in the value of architects and good housing). Thereafter, the now late Prof. Sarah Sayce (Professor of Sustainable Real Estate at Henley Business School) brought a level of knowledge, insight and enthusiasm into a world that is closed to most architects. Sarah's death is a huge loss. I hope, therefore, that this work does justice to her and others' willingness to engage with curious and frustrated architects like me. My hope is that I can take some of the accumulated knowledge and transfer it into practice, industry and policy. This is because housing in the UK needs to do more than hit supply targets if it is to expand people's freedom to do and be all that they have reason to value.

Contents

Figures and Tables

Glossary

Adjustable tenure	Ways of owning a stable but flexible hold over a home (see Section 0.1.1).
Adjustable dwelling	A private living space that can be adapted to different uses without requiring physical changes to the external envelope or to internal walls (see Section 0.1.1).
Adjustable infrastructure	The bundle of shared assets, rights and benefits that empower residents to take control of their housing environment (see Section 0.1.1).
Co-design	See 'user-led design' (below)
Co-living	A fully rented and managed, multiuser housing solution that rewards the provider (rather than the residents) for any improvements or user involvement in management (Schmid *et al.*, 2019, pp. 21–22).
Cohousing	"Intentional communities, created and run by their residents [in which] each household has a self-contained, private home as well as a shared community space" (UK Cohousing Network, 2021).
Consumers	Users of housing (Forty, 2004, pp. 312–317), whether they own or rent their home. I use the word to reflect economists' idea that people consume cities (Glaeser and Gottlieb, 2006) or housing (e.g. Meen, 2018, p. 13), much as they do any other commodity.
Design value	A combination of social, economic and environmental measures of value (White *et al.*, 2020, pp. 6–7, 14 & 18)
Designer	Architects but also policy-makers, planners, agents and system designers, who use their real estate expertise to set the agenda and incentives of a development, according to their intended housing outcome.

Enabler	The consultants who act on behalf of a landowner to manage a user-led processes of design briefing and consultation (see Section 7.1.3).
Entitlements	The tenure or legal title that governs people's power to enact changes to their home or home environment (Lehavi, 2008, p. 139).
ESG investment	Environmental, social and governance criteria used by investors. In the building environment, these terms somewhat overlap with the term, 'design value' (see above).
Founding group	The original members of a cohousing scheme at the point when their collective voice can be applied to early stage briefing and design decisions.
Housing	Dwellings in the collective sense, gathered around some shared idea of space, governance or ownership (see Section 0.1.1)
Mesoscale	Something of medium or intermediate size, between the micro and macro scale (more commonly used in meteorology)
Mismatch	A difference between housing need and the existing home that cannot be overcome by adaptation and causes either a misallocation cost or a welfare loss
Multiuser	A small estate or apartment building containing several households in individual dwellings - sometimes referred to in the literature as 'multi-family' but variously referred to in this thesis as multi-dwelling or even 'multi-player'.
Partial ownership products	(or, *home purchase products*) include shared ownership, part-rent, equity finance and other ways of dividing up the cost and risk of homeownership between an individual occupier (with legal title) and an outside investor, institution or provider (Whitehead and Williams, 2020, p. 11).
Path dependence	When the options for change (e.g. policy reforms) are bound by the history, laws, institutions and

	social norms built up over time (Meen and Whitehead, 2020b, p. 239).
Permitted development rights (PDR)	A concession in planning rules that allows householders to improve or extend their homes without having to apply for planning permission, in situations where the need for approval would be out of proportion to the extent or impact of the intended works (MHCLG, 2019, p. 4).
Producers	The developers, 'objectors', 'promoters' (or, 'marketeers', often estate agents) and designers (in this case, architects) (McGlynn, 1993; Wilkinson, Sayce and Christensen, 2015; White *et al.*, 2020).
Revealed preferences	Consumers' purchasing habits as observed from what they do or buy (this contrasts with their 'stated preferences', see below).
RIBA Plan of Work	The seven stage project framework that architects and their clients follow to bring clarity to building design and delivery (RIBA, 2020).
Semi-private spaces	The lobbies, landings, stairs, walkways and other shared circulation in a multiuser residential building (Newman, 1973).
Semi-public spaces	The outdoor areas or gardens that are accessed by a number of residents (Newman, 1973).
Social value	A way of measuring value in terms of the transfer of knowledge and skills, the stimulation of economic activity, the engagement with local community needs and the use of local or environmentally responsible materials (Samuel, 2020b, p. 6). Also, systems and spaces that make users feel they have a degree of control over their housing environment (Urbed, 2021, pp. 7–12).
Stakeholder	A participant who *responds* to the agenda and incentives set by the 'designers', according to their own environmental, social or economic objectives.
Stated preferences	What people *say* they would prefer (as contrasts with 'revealed preferences', see above).

Suppliers	*Suppliers* of capital, land, planning permission and legislation, including investors, approvers, landowners and their agents (McGlynn, 1993, p. 7). I also include 'enablers' in this group (see above).
User-led design	Housing produced by or with the direct participation of the intended end users (see also 'Cohousing', above)
Utility theory of value	The exchange value of goods and services (Mazzucato, 2019, chaps 1–2)
Wellbeing	A sense of control, health, nature, wonder, movement and belonging (Urbed, 2021).

Introduction

The aim of this thesis is to develop a framework for describing and implementing housing systems that are both adjustable over a multi-stage life course, and viable to build in a UK context. This is specifically in denser or multi-dwelling housing, to which more attention needs to be paid because of its lower energy consumption and smaller material throughputs - attributes that could help to lower greenhouse emissions (Goldstein, Gounaridis and Newell, 2020). My position in the research is as a practising housing architect, looking outward at the fields of economics and real estate. Evidence from these three fields reveals a central but widely overlooked problem. This is that households at the boundaries between private rental and owner occupation, lack effective demand in the UK property market, causing them to reduce their housing aspirations - and therefore, their level of satisfaction - until they can afford to buy a home (Meen, 2013, p. 637, 2018, pp. 21–25; Arundel and Doling, 2017, p. 650; Köppe, 2017, p. 178; Crawford and McKee, 2018, p. 194).

In this thesis, I address the consequences that flow from such compromised choices when the needs of these marginal homebuyers change - as they are prone to do in our "age of uncertainty" (Sardar, 2010; Bauman, 2013). Taking an interdisciplinary perspective, I show that a combination of tenure, taxes, planning, construction, density and affordability, can prevent them from adjusting their homes, whether by moving house or by making building alterations (Nationwide, 07/2019; Till and Schneider, 2005, p. 288; Pinder, Iii and Saker, 2013, p. 457; Hudson and Green, 2017; Lloyds Bank, 2017; Femenias and Geromel, 2020, p. 482; Preece *et al.*, 2020, 2021, pp. 2 & 100–101). This is a problem which architectural research has so far considered only at the micro-scale of the private dwelling (Schneider and Till, 2007; e.g. Saarimaa and Pelsmakers, 2020), thus overlooking the potential for circulation and shared spaces to provide adjustability at the scale of a development or small estate

(Newman, 1973; Coleman *et al.*, 1985; Lees and Warwick, 2022). In contrast, research by economists tends to see adjustability at the *macro*-scale of the housing market, within which people are expected to adjust their housing by making house moves whenever their needs change (Cheshire, 2018, p. R14; Cheshire, Hilber and Koster, 2018, p. 128). Meanwhile, the real estate view is that adjustability can be achieved through alternative tenure models, such as shared ownership, or by means of shared living arrangements such as cohousing.

Instead, in this research, I identify the intermediate or *meso*-scale of a multi-dwelling development as an undertheorised environment, within which there is the potential for people to *continuously* adjust their consumption of housing space, equity and amenity, without having to move house or make physical adjustments to their home each time their housing needs change. On this basis, my project will address three main research questions:

1. Which characteristics could provide owners with longer-term adjustability against housing needs that can or will change over the longer-term?

2. What changes might be needed to make adjustable housing more attractive to UK developers?

3. How can knowledge from the fields of architecture, economics and real estate be combined to develop a framework for describing and implementing a more ‘adjustable housing’ system at a *meso* (or intermediate) scale of development?

In answering these questions, my research develops a generalisable, *middle-range theory* to explain real world problems and processes, so that practice might become less reliant on ad hoc theories (Green and Schweber, 2008, pp. 651–2; Sampson, 2010, p. 72; Lees and Warwick, 2022, pp. 229–230). In my case, such tentative theory is shaped by the literature from multiple fields, as well as an interpretivist, post-occupancy evaluation of two case study housing models. These are, a cohousing model and a micro-housing model, both of which have relevance to adjustability because they claim to offer enhancements beyond what is typically available on the UK housing market. Relevant enhancements include shared spaces, enlarged circulation, a self-governable scale, rewards for resident participation and an ambition to expand users' freedoms and capabilities. The fieldwork is conducted through surveys and interviews with multiple stakeholders, including residents, designers, developers, enablers, planners and sales agents. An inductive, grounded process - leading to thematic analysis of the data - provides a new insight into the systemic barriers that make the housebuilding industry so unresponsive to changes in consumer aspirations.

This transdisciplinary agenda and multi-stakeholder inquiry is a deliberate response to the problem that architectural research is typically restricted by professional silos. Siloed thinking means that practitioners rarely engage with other fields - a problem which has become more pressing in the 21st Century, during which interdisciplinary thinking has become yet more essential for addressing architectural challenges such as climate change, urbanisation and an ageing population (Samuel, 2018, p. 188). My research agenda is also a response to the problem that practitioners continue to place more trust in their own, subjective experiences, than in empirical evidence gathered from the field (Lees and Warwick, 2022, p. 230).

To break out of this silo, I have undertaken the research from a practitioner's perspective but using a capabilities approach. The capabilities approach is a way

of evaluating success in terms of the freedoms and opportunities that are created for people to be and do all that they have reason to value, rather than according to conventional but abstract price-based measures (Nussbaum, 2003, pp. 41–42; Sen, 2010, p. 233; Robeyns, 2019, p. 252). Such capabilities-led thinking has only recently been applied to housing research and, to date, has been limited to theoretical work (e.g. Clapham and Foye, 2019, pp. 16–25; Foye, 2020, pp. 9–10; Kimhur, 2020, pp. 271–272). As such, my research represents a tentative attempt to apply a capabilities approach to the post-occupancy evaluation of housing.

The scope of this thesis is limited to private sale housing, whether this is owner occupied or ultimately sublet by private owners. This is so that my research might have more political impact by addressing the needs of a financially exposed but politically 'valuable' segment of the housing market, as exists on the fringes of the owner occupied sector (Meen and Whitehead, 2020b, pp. 211–212 & 239). I have therefore excluded from my terms of reference, consideration for social housing, institutional buy-to-let and housing on publicly-owned land. Instead, my intention is to rehabilitate the idea that multi-dwelling *housing* could be seen as a 'normal' - and even desirable - way of extending the range of the owner occupied housing market in the UK. This is on the basis that homeownership remains the UK's dominant tenure (English Housing Survey, 2021, p. 6) but now needs to be reframed to make mid-density typologies (Scruton *et al.*, 2020, pp. 99–101) and more collective living into a positive lifestyle choice, as could aid transition to a *post-growth* economy (Jackson, 2009, p. 196).

Such reframing is needed because more collective or multi-dwelling forms of housing have become increasingly stigmatised since the 1980s. This is because social housing has come to be widely seen as a disempowering or even residualised solution to affordability problems (Tunstall, 2020, 2021); Meanwhile, collective settings such as cohousing are seen as an idealistic, elitist

and reactionary response to narrowly defined, political or communitarian interests (Delgado, 2012, p. 441; Sargisson, 2012, p. 51; Chiodelli, 2015, p. 2577). Thus, in many ways, my research concerns the changing nature of housing *demand* and aspirations (Crawford and McKee, 2018; Preece *et al.*, 2020), rather than issues affecting the *supply* of new homes - as would typically be the preoccupation of a housing architect.

'Adjustable Housing' is a transdisciplinary concept that developed during the course of this thesis project. Whilst the concept could equally have been described by the adjectives *resilient*, *durable*, *contingent*, *manageable* and *regenerative*[1], the term *adjustable* prevailed. This is because it is the term which most simply describes a passive, achievable way for households at the edges of homeownership to future-proof themselves against episodic changes in housing needs, but without requiring them to move house or make physical changes to the fabric of their home. In the United Kingdom, this need is most acute where higher density housing and higher value land makes it harder for people to transition between life stages.

The term, 'adjustable housing' - as I will define in the course of this research - is drawn from the fields of architecture, real estate and economics. I have conceptualised it using a tentative, three dimensional model that considers the intermediate scale of a small estate or multi-dwelling development as a holistic system. These three dimensions, as illustrated below are, adjustable *tenure*, adjustable *dwellings* and adjustable *infrastructure.* Together, they form a central, theoretical contribution of this research, each being drawn from the literature, as briefly introduced below.

[1] The terms *resilient* and *durable* describe an approach to housing that anticipates shocks and change, referring to Axelrod's idea of "durable relationships" (1984, p. 182). The term *contingent* describes a collection of people as well as a cautious approach that leaves a margin for change, referring to Till's idea that "Architecture depends" (2009). *Manageable* captures the idea that housing costs and change need to be manageable for both individuals and residents acting collectively. Lastly, *regenerative* moves beyond the idea of sustainability to conceptualise a model that can grow and evolve.

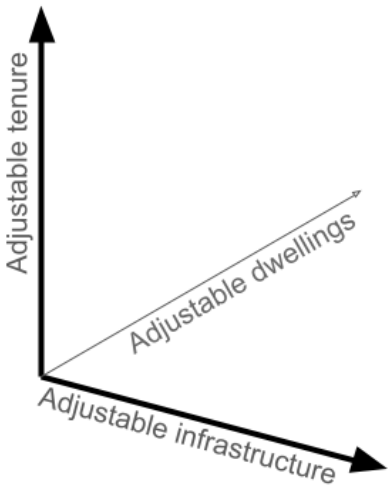


Figure 1: *The three dimensions of adjustable housing, as used in this thesis, frame a tentative middle-range theory for describing adjustability from an interdisciplinary perspective (author).*

- Adjustable *tenure* means ways of owning a stable but flexible hold over a home, on the basis that financial means can vary just as easily as housing needs (Miles, 2015, pp. 28 & 33; Smith, 2015, pp. 66 & 72; Ong ViforJ *et al.*, 2021, p. 2007). A small number of shared equity and partial equity products suggest a nascent market for such financial innovation (Whitehead and Williams, 2020, pp. 24–32), especially in the context of an increasingly precarious labour market (Standing, 2011, pp. 8–13; Gratton and Scott, 2020, pp. 242–4).

- Adjustable *dwellings* means private living spaces that are designed without stereotyping the occupier (Rabeneck, Sheppard and Town, 1974, p. 86), so that the floor plan is adaptable to different uses without requiring physical changes (Groak, 2002, p. 15). In this research, I have replaced Schneider and Till's (2005, 2007; 2005) term, "flexible" and Groak's term of "adaptable" (Groak, 2002, p. 15) with my own term *adjustable.* This is to avoid confusion with adaptability for disability reasons (e.g. Gamble, 2015, p. 3; McCall, 2022) or flexibility, as is more

often associated with sliding, folding or external alterations (Schneider and Till, 2007).

- Adjustable *infrastructure* means a multi-dwelling housing environment which includes a bundle of shared spaces, assets, rights and benefits (Lehavi, 2008, p. 139; Ostrom, 2015). In this research, such settings need shared circulation which is flexible or occupiable (Schneider and Till, 2007, pp. 148–149), as well as spaces or systems that encourage co-management and the formation of durable relationships between neighbours (Smith and Price, 1973; Axelrod, 1984; Friedman, 1998, pp. 16–17).

These three ways of describing adjustability offer a novel framework for evaluating housing outcomes in terms of the freedoms or *capabilities* that are created by the system as a whole (Nussbaum, 2003, pp. 41–42). These terms could equally have been described as, *sustainable* tenure, *variable density,* and, *manageable* infrastructure. Indeed, these alternative ways of describing adjustability are more specific to the phenomenon. They are, however, more obscure than the simple term, *adjustable*, because they rely on more nuanced explanations and therefore, lose their meaning for the intended, cross-disciplinary audience. I have therefore continued to refer to *adjustable* tenure, *adjustable* dwelling and *adjustable* infrastructure, so that the themes remain broad enough to connect with architects and their clients.

Just as I use the word *adjustable* to break down the boundaries that separate architectural from tenurial and infrastructural or organisational characteristics, so too do I use the collective term, *housing*, with a similarly specific intent. I do this to rehabilitate the idea that living together but separately, can be an aspiration, rather than a compromise. This message is timely because public policy discourse has come to infer a residualised, stigmatised status for multi-dwelling living, due to its association with social housing (Tunstall, 2020, 2021) and with people who have surrendered their right to *control* their own

living environment because they lack a suitable alternative (King, 2004, p. 34). In these regards, multi-dwelling housing has taken on a meaning that infers a level of dependency and fixity that is the opposite of a co-managed and adjustable solution.

Yet, for more privileged or reactionary homeowners, the idea of more collective forms of housing has become associated with a communal or even utopian way of living (see, Sargisson, 2012; Heath *et al.*, 2017; Schmid *et al.*, 2019). Thus, there is a need to rehabilitate the idea that *housing* in the collective sense is neither residual nor reactionary but could, instead, become an ordinary, inclusive and potentially empowering lifestyle choice. In this regard, alternative terms such as *dwellings* infer too much exclusion, limitation and boundaries, and are therefore too singular and inflexible to describe the coexistence of multiple households (King, 2008, pp. vii, ix, 6). Likewise, the word *homes* infers something so arbitrary and standardised that it obscures the fact that people have disparate and episodic needs, choices and ways of living (King, 2004, pp. 18–19). Meanwhile, the term *residential property* casts housing as a demand response whose value is captured by price, whereas the value of home and housing is derived from need and can be evaluated in terms of other types of value.

In housing research, ways of describing value in terms other than price have been framed as ‘design value’ - that is, the triple bottom line of social, economic and environmental value (White *et al.*, 2020, pp. 6–7, 14 & 18). Concepts of design value include: social value - defined as systems and spaces that make users feel “they have a degree of *control*” over their housing environment (Urbed, 2021, pp. 7–12); and wellbeing - a term that includes control, health, nature, wonder, movement and belonging (Urbed, 2021). Design value research relates to the wider, economic view that utilitarian, price-based or transaction-based value judgements can value unproductive goods and services over those whose value is self-evident but not tradable (Mazzucato, 2019). It

also relates to concepts such as *social infrastructure* and *social capital,* which have become synonymous with wellbeing at the neighbourhood scale (e.g. Samuel, 2023, pp. 76–77 & 83–86). Yet, my thesis is concerned not for the neighbourhood scale but for the meso scale of the small estate. Further, I have used the term *adjustable* in place of *social* to move away from contemporary associations with residualisation and disempowerment in the case of social housing, and with utopianism in the case of collective or communitarian living.

In summary, *adjustable housing* describes a bundle of shared rights, responsibilities, liabilities, amenities, opportunities and spaces which combine to give people living in small estates or apartment developments a way of managing change, but without needing to make physical alterations to the building fabric. The term is shaped through my fieldwork and the economic, architectural and real estate literature, to show how a different approach to housing could enhance the value of design. This process of evaluation and reframing could, in turn, help architects to prove that 'good' design can have social, environmental or economic value over the longer-term, thus addressing a commercial challenge with which the profession has struggled for many years (Samuel, 2018, p94).

My thesis is divided into three parts, each of which is further subdivided into chapters. The first part is a review of *The three literatures of adjustable housing* (Part I). The second part sets out my empirical methods and findings (Part II). Thereafter, I synthesise the findings and draw conclusions, before identifying opportunities and recommendations for industry (Part III).

The literature review (Part I) is divided into three chapters - one each from economics, architecture and real estate - in which I methodically review the respective fields with regards to the three dimensions of adjustable housing (tenure, dwelling and the shared housing infrastructure). This approach helps to emphasise the problem that neither theory nor practice are considering the potential role that interdisciplinary thinking at the intermediate or *meso*scale of

small estates and apartment developments could play in making the UK's housing stock more adjustable over the longer term. Thus, after setting the socio-economic scene in Chapter 1, Chapter 2 *(Adjusting through house moves)* is where I identify ways that economic and political science theory could give individuals more effective demand or create a more collective environment for adjusting and re-optimising housing choices. Next, in Chapter 3 *(Adjusting within dwellings)*, I use the architectural literature to show that the theory and practice of adjustable (or flexible) housing design in Twentieth Century modernism has not succeeded in the UK's prevailing market system, leading architects to defer to space standards regulation as a bulwark against market forces. Lastly, in Chapter 4 *(Adjusting collectively)*, I review a small but growing area of real estate literature that concerns more collective forms of living (e.g. cohousing). This shows that the inability to scale such models may be because they offer utopian or reactionary solutions to *sociable* and idiosyncratic demands, instead of addressing wider socio-economic and market problems. I conclude the literature review in Chapter 5 by showing that each of the three fields - economics, architecture and real estate - omit at least one of the three dimensions of adjustable housing from their literatures, and therefore only a tri-disciplinary viewpoint can provide a holistic definition of adjustable housing.

In Part II *(Empirical studies),* I use Chapter 6 *(Research design)* to explain my choice of case study housing models and introduce my survey and interviews methods, before describing my iterative, grounded process of thematic analysis. Chapter 7 provides an *Introduction to the case study housing models* through factual descriptions of the relevant schemes and the supply-side incentives. The main content of Part II, however, consists of the three findings chapters, where each is framed around the three separate *dimensions* of adjustable housing that emerged from literature review, (i.e. tackling economic, architectural and real estate matters in turn). Thus, Chapter 8 looks at evidence that a more *Adjustable tenure* could overcome problems of buyer commitment, investment risk and social attitudes to tenure. Chapter 9 *(Adjustable dwellings)* considers perceptions

of how much private floor area is enough to adjust within, the relevance of the housing mix to overall adjustability and ways of adjusting the housing density within a fixed development area. Finally, in Chapter 10 *(Adjustable infrastructure)* I consider the shared environment - that is, the bundle of formal rights, rules and shared amenities, as well as the informal demographic and spatial factors that affect residents' capacity to make adjustments through collective decision-making.

In Part III *Synthesis and opportunities),* I draw together these three dimensions of adjustable housing. First, in Chapter 11 *(Comparing the three dimensions of adjustable housing)*, I synthesise and summarise the findings. Then, in Chapter 12 *(Opportunities for industry)*, I deliver on the research objectives. I do this by identifying six characteristics that could provide owners with longer-term adjustability against housing needs that can or will change over the longer-term (Research Question 1). I go on to make six recommendations for ways of making adjustable housing more attractive to UK developers (Research Question 2), subject to further research, development and expert validation. These characteristics and recommendations feed into a tentative adaptation of the RIBA's Plan of Work (RIBA, 2020), as a framework for describing and implementing a more adjustable housing system at the scale of the small estate (Research Question 3). This is intended as an invitation to practitioners and industry partners to contribute to the adjustable housing concept through changes in practice.

To conclude the thesis, I describe a hypothetical adjustable housing development, using the terms developed through the fieldwork. I then reflect on the work before identifying some contributions to knowledge and policy. Finally, I make recommendations for further research so that architects, planners, investors and developers might acquire the tools and knowledge they need to deliver more adjustable housing, and so that consumers and estate agents might realise its value.

PART I
THREE LITERATURES OF ADJUSTABLE HOUSING

1. **Context:** an introduction to the three literatures of adjustable housing

In the literature review that follows, I attempt to link together the three distinct fields of adjustable housing - that is, economics, architecture and real estate. This is to show how far each discipline has come in describing and implementing a more adjustable housing system and to reveal the limitations of each. First, I summarise the economic situation in the UK housing market since 2008. This provides context for the remainder of Chapter 2 (*Economic literature review*), in which I show that economists use tenure solutions to help people into homeownership but do little to improve satisfaction with the dwellings themselves. Next, in Chapter 3 (*Architectural literature review*), I show that architects support the regulation of housing space but do not look beyond the private dwelling. Finally, in Chapter 4 (*Real estate literature review*), I outline the existing tenure options in current legislation that provide for more collective management structures, but show that these rights are typically sold or passed on by developers unless, exceptionally, they have been captured early enough by a pre-buyer group and repackaged as cohousing - a relatively radical alternative to the status quo.

In each chapter I consider the three dimensions of adjustable housing in turn, with a section each for tenure, dwelling and infrastructure. In this way, I conclude in Chapter 5 that none of the three literatures has produced a complete theory around adjustability. Rather, the economics and real estate literature mostly overlooks the importance of adjustable dwellings, whilst architects overlook the role of tenure. Common to the literature of each field is the background of a changing socio-economic picture in the wake of the Global Financial Crisis (GFC) world - a context to which I turn first.

2. Adjusting through house moves: a review of the economic literature

In Chapter 2, I consider the three ways in which economists intervene - or would like to intervene - in housing markets, to give people more choice and the means of adjusting their housing over time. To do this, in Section 2.2, I show that there are in fact multiple ways of structuring *tenure*. Next, in Section 2.3, I explain why the housing market is considered to be an acceptable way of evaluating people's satisfaction with their choice of *dwelling*. Lastly, in Section 2.4, I use economic theory to describe how the shared *infrastructure* of a housing environment could help people to manage needs that cannot be met entirely within the individual living space of their private home. First, however, it is important to set the scene by describing the socio-economic context following the global financial crisis and the implications for marginal home buyers in the UK's financialised housing system.

2.1. The financialisation of the UK housing system

The question of adjustability in the UK's housing stock must begin with an overview of the socio-economic context. This can be found in the 50 years of exceptional growth that preceded the 2008 global financial crisis. Over this period, a combination of liberalised credit markets and house price inflation became so normalised that UK homeowners discovered they could reliably use the untaxed capital returns on their homes to fund a series of house moves or building alterations over the course of a housing 'career' (Meen, 2013, p. 637; Hilber and Vermeulen, 2016, p. 390; Meen and Whitehead, 2020b, pp. 58 & 66). Since 2008, however, the new normal for the UK economy has been of high prices, falling living standards, insecure work and inconstant, stagnant or

declining wages in real terms (Standing, 2016, p. 137; Barnes, 2017; Hudson and Green, 2017, pp. 42 & 66; Köppe, 2017, p. 178; Resolution Foundation, 2018, pp. 41–43). These changes are reflected in the 7% fall in owner-occupation over this same period (MHCLG, 2020, p. 1), indicating structural changes at the lower ends of the UK housing market[2].

Economists broadly refer to these changes as affordability problems, but disagree around the extent to which either housing supply or regulation are to blame. For example, Cheshire *et al (2009; 2017; 2018)* advocate further deregulation of planning rules[3] to help more homes to be built, whereas Mulheirn (2019) - and even geographers Dorling (2014), Tunstall (2015) and Gallent (2018) - predict that it would take an "unimaginable" scale of new house building to have any measurable effect on house prices[4]. As Meen and Whitehead (2020b, p. 230) explain, however, such distinctions between supply and demand-side policies are in fact unnecessary because the problems are *distributional*. Nevertheless, successive governments have supported new housing supply without due attention to the specific groups that are most affected (Meen and Whitehead, 2020b). One consequence of this oversight is that the housing crisis continues to be framed as one of general affordability for

[2] Noting that, like the UK, other international housing markets have undergone a similar degree of financial deregulation (Meen and Whitehead, 2020b, p. 10).

[3] This sits within a wider literature on planning reform to improve housing outcomes by levelling the playing field in favour of more innovative developers. For example, Boyer and Leland (2018) argue that greater certainty could be achieved if cohousing or related models were to be designed to give local authorities tangible ways to respond to public pressures around affordability and social isolation (Boyer and Leland, 2018, p. 663). Alternatively, land value capture, tenure-specific planning zones such as *Housing Market Areas* (Jones and Coombes, 2013, p. 1008), or a new land use class for *Dwellings procured and owned by their occupants*, could help to create a distinct land market, where locally specific affordability measures or cohousing-type models could flourish (Parvin, 2016). Another theoretical example is Tim Leunig's (2011, p. 7) model for land price appraisal, in which local authorities accept invited offers of suitable land at a fair price, before re-auctioning the site - but with permission - in order to benefit from the planning gain. Finally, land value capture (e.g. Hughes *et al.*, 2020) is a widely debated topic and has its own literature.

[4] An insight into the technicalities of this debate are set out clearly in an exchange between economists Meen (2019) and Mulheirn (2019), concluding unless or until distributional problems are resolved, it will be difficult to say definitively what if any impact new housing supply is realistically likely to have on house prices.

which the solution is the supply of more homes (e.g. Department for Levelling Up, Housing and Communities, 2017). This is despite counter-narrative market data which shows that UK residential property is in fact *more* affordable in all parts of the UK than it has been at any time since 2007 (Stephens *et al.*, 2022, chap. 3).

Nevertheless, momentum remains with supply-side policies because these are politically easier to achieve, even if they do not address the specific nature of the problem (Mulheirn, 2019; Meen and Whitehead, 2020b, pp. 230–232). For example, most economists agree that tax reforms[5] would significantly improve the distributional aspects of the problem, even if successive governments have ignored this advice (Hilber and Lyytikäinen, 2017; Whitehead, 2018; Meen and Whitehead, 2020b, pp. 230–232). One reason for this apparent indifference to more effective housing policies is that housing has historically not been a general election issue in the UK (Whitehead, 2018, p. R39), perhaps because the 65% of UK households that are homeowners[6] are mostly satisfied with their choice of home (MHCLG, 2020; Corlett and Odamtten, 2021; English Housing Survey, 2021, p. 6). Thus, path dependence suggests that policy choices in the present will be constrained by historical experiences of the past, to the extent that change will happen slowly if at all, even where a more socially optimal outcome is available[7] (Meen and Whitehead, 2020a, p. 239).

More than tax and supply, however, the UK's distributional and affordability problems are driven by lending constraints, household incomes and interest rates, of which only lending constraints can be changed without affecting the wider macroeconomic system (Meen and Whitehead, 2020b, pp. 39–40 & 117). Lending constraints are nevertheless an important - even crucial - lever because

[5] *Specifically Council Tax, Stamp Duty Land Tax and Inheritance Tax.*

[6] The housing market in England divides into 35% outright owners, 30% mortgaged owners, 19% private renters and 17% in social rented housing (English Housing Survey, 2021, pp. 6–8).

[7] To illustrate this point, the history of the QWERTY keyboard shows that decentralised decision making by consumers can interfere with the development of a system or product to the extent that what seems an optimal outcome in fact becomes politically, socially or commercially unachievable (David, 1985).

there are people who could very well afford the mortgage repayments and want to buy (rather than rent) a home, but find themselves locked out of the housing market because they cannot afford the deposit (Hilber and Vermeulen, 2016, p. 390; Meen and Whitehead, 2020b, pp. 230–232). In other words, those with limited access to mortgage credit lack effective demand because of *purchase* affordability rather than *repayment* affordability - a problem which disproportionately affects first time buyers and recent buyers because these groups will typically have smaller deposits than established homeowners (Meen and Whitehead, 2020b, pp. 33–34). These differences are a consequence of mortgage lending constraints that were imposed on lenders as a way of stabilising the housing market following the Global Financial Crisis but in practice, mean that new home buyers are often so constrained by repayment affordability that they have to make trade-offs against their housing needs (Meen, 2013, p. 637, 2018, pp. 21–25; Arundel and Doling, 2017, p. 650; Köppe, 2017, p. 178). The effect of these is that for a "non-negligible" number of potential buyers, the opportunity to buy an appropriate home - or indeed, any home - depends on small changes to the cost of living and the size and timing of deposits (Corlett and Odamtten, 2021, p. 31).

When they arrive at the point of having to adjust their home, however - perhaps because it is too big, too small, lacks outdoor space or the layout is unsuitable - economists see marginal homebuyers and second steppers as facing three choices. The first is to adjust the *tenure* by switching the security and status of ownership for the insecurity of a privately rented home in the same area (Foye, 2017, p. 440; Köppe, 2017; Wood *et al.*, 2017, pp. 202–3; Ong ViforJ *et al.*, 2021, pp. 1995–6). The second is to adjust the *dwelling* itself by moving house, accepting that trading up is likely to mean moving to a less desirable area (Hudson and Green, 2017, p. 42), often with a longer commute (Cheshire, 2018) and an associated strain on household relationships (Costa and Kahn, 2000; Simon, 2019). The third is to remain in a too-small home and accept a mixture of dissatisfaction and welfare losses, especially where household needs cannot

easily spillover into the surrounding *infrastructure* of the neighbourhood (Roberts-Hughes, 2011; Solari and Mare, 2012; Bourassa, Haurin and Hoesli, 2016; Foye, 2017, p. 440).

In response to the need or desire for such spillover spaces, some novel, user-led models such as cohousing have become widely regarded in the architectural and real estate literature as a way to deliver more optimal housing. These assume there is added value in an enhanced social experience and the opportunity for people to co-design their shared future together, as well as to customise their own individual home (Jarvis, 2011, pp. 560 & 564; Tummers, 2016, p. 2036; Larsen, 2019). Yet, to date, only nineteen built examples of cohousing have been completed in the UK (Jarvis *et al.*, 2016, p. 6; UK Cohousing Network, 2021), suggesting a fundamental limitation to the model that I explore in the course of this literature review.

2.2. **Tenure:** from an economic perspective

For housing economists, tenure is an important part of a household's adjustability toolkit. In this section I will explain why this is so and show there is a spectrum of tenure options available in the housing market. These options span from private rental to private ownership, with ways of part-renting and part-owning in between. I exclude social and affordable rent from my scope of research because such tenures are not designed for households on the edges of owner occupation - the group for which my thesis is concerned.

The first of these tenure choices is private rental, a sector whose growth is seen, in economic terms, to be a "success story" because easy-in-easy-out rental contracts[8] allow people to adjust their housing not only around their needs but also around their work, thereby improving labour market efficiency (Meen and Whitehead, 2020b, p. 59). For marginal homebuyers and those who want more

[8] See Section 4.1 for the legal status of tenure options.

security than is usually available through rented tenure (see Section 4.1), there is a small but experimental area of economic literature that seeks to create a 'third way' to participate in the housing market. Smith *et al* (2013; 2015) and Ong Viforj *et al* (2021, p. 1995) suggest that this should be done by replacing some of the capital costs of ownership with outside finance. To develop these ideas within the wider market and policy context, Williams and Whitehead (2020, p. 11) use the term, *partial ownership models* to describe products that can: (1) help people overcome barriers to access (i.e. purchase affordability); (2) reduce the on-going costs of purchase (i.e. repayment affordability); and, (3) modify the risks involved in buying a home (i.e. changes in income or variation in asset value) (Whitehead and Williams, 2020, p. 13). For example, *Help to Buy* - a government-backed equity loan scheme - reduces deposit requirements; shared ownership (also known as part-rent or part-buy) can reduce monthly repayments; and, joint investment products (including peer-to-peer models) allows buyers to offload some of the risks (and rewards) of homeownership to a third party investor[9] with whom they jointly purchase their home (Whitehead and Williams, 2020, p. 30).

Beyond this mixture of government initiatives and financial innovations, the literature shows that by dividing up what is normally a lumpy and indivisible property asset, partial ownership models may also enable marginal homebuyers to personalise the risk and reward that they wish to be exposed to (Smith, Whitehead and Williams, 2013; Miles, 2015; Smith, 2015, pp. 63 & 68; Baum, 2020, pp. 16–17). This is because they allow owners to acquire legal title and security of tenure but with little or no investment exposure compared to that of highly leveraged, mortgaged ownership (Miles, 2015, pp. 28 & 33). Indeed, Miles (Miles, 2015) shows that products - described as *equity finance* or *flexible tenure*[10] - could not only allow people to use outside finance to fund a

[9] Emerging examples on the current market include products such as *Wayhome* (investor-backed) and *Joint Step Ladder* (a peer-to-peer equivalent).
[10] Although *flexible tenure* is also a term associated with fixed-term affordable rental contracts with social landlords (Meen and Whitehead, 2020b, p. 180) so risks confusion.

portion of their mortgage debt but could also improve housing market stability by lowering the proportion of debt leverage in aggregate. Thus, outside finance can be used to not only improve people's housing choices but to satisfy the UK's government's "policy trilemma" - that is, to appear to be tenure neutral whilst balancing political support for home ownership against any destabilising effect on the wider economy (Mulheirn, 2019, p. 38).

The relevance of partial ownership models to the questions of choice and adjustability is that by allowing people to 'staircase' into full homeownership, they not only have an adjustable equity share but can also increase their effective demand and thereby choose from a wider range of housing outcomes to suit diverse or changeable needs (Miles, 2015; Whitehead and Williams, 2018, pp. 112–127). For example, Ong Viforj *et al* (2021, p. 1995) argues that shared ownership schemes can expand people's freedoms and capabilities by giving them resilience against stagnating incomes or economic shocks, even when their borrowing power is exhausted. Further, in a study of outcomes arising from the government's *Help to Buy* scheme, Whitehead and Williams (2018, pp. 112–127) have shown that not only was the scheme widely used by people who were likely to have bought a home anyway, but many used their publicly-funded equity advantage to buy a bigger home, rather than taking out a smaller mortgage, as had been the government's intention. Thus, it may be concluded that people who are able to access equity finance by means of a partial ownership product will be able to miss out the lower rungs of the housing ladder by buying a home that is likely to be more adjustable over the longer-term, thereby reducing the likelihood of future house moves. Smith (2015, p. 77) goes further, claiming that with more effective demand, such buyers could use their greater buying power n to shape the industry through their influence over policy, investors and design decisions. This is because partnerships with outside investors will create relationships through which institutional players may be incentivised to improve housing quality, investment

opportunities and market risks, with consequences for the political status of homeownership in the UK (Smith, 2015, p. 77).

Partial ownership, however, has so far allowed part-owners to staircase their investment in one direction only. In contrast, the opportunity to pay a deposit and in return, choose to offset some or all of the costs and risks of ownership using outside (or third party) equity relies on giving people the option to reduce their investment exposure even to zero, without loss of tenure security[11] (Smith, Whitehead and Williams, 2013, p. 13). Miles (2015, pp. 28–33) and Smith (2015, pp. 64 & 76–77) show that whilst such an arrangement is ideal from the individual and market stability point of view, the model requires that the equity that somebody has stored up in their home must be able to adjust both down as well as up. This is because households at the margins of ownership need ways to manage financial stress by temporarily swapping the rewards of owning for the costs and disruption of renting, in the event of biographical disruptions or economic shocks (Ong ViforJ *et al.*, 2021, p. 1995). Baum (2020) and others have suggested that for tenure and investment arrangements to become so adjustable, financial technology ("fintech") is needed in the real estate sector. However, as shown by Whitehead and Williams (2020, p. 30), changes in market conditions - not least the disruption of the Covid-19 lockdowns (2020-21) have slowed innovation in this area.

The evidence shows that partial ownership products have had little traction in the wider UK housing market (Whitehead and Williams, 2018, pp. 112–127; Cromarty, 2020, pp. 3 & 25–31). For example, uptake of shared ownership has been equivalent to only 1% of all households, due to a perception that it is complex, expensive, and difficult to both mortgage and resell (Cromarty, 2020, pp. 3 & 25–31). Meanwhile, the Help to Buy scheme has in fact *increased* house prices in already unaffordable areas, to the benefit of landowners and developers, rather than the credit-constrained households that were the

[11] Except in the event of default.

intended beneficiaries (Carozzi, Hilber and Yu, 2020, pp. 23–24). Furthermore - and of particular importance to this research - is that the market for second stepper part, ownership products has contracted, due to a combination of uneven house price inflation and higher transaction costs (Whitehead and Williams, 2020, p. 29). This reflects the wider problem that financial innovations in the housing market fall away as quickly as they emerge because of a lack of investment backers and also because of changing market conditions (Whitehead and Williams, 2020, p. 30).

In summary, partial ownership models represent an often overlooked and largely un-instituted space between tenures that could help to expand people's freedoms and capabilities by giving them resilience against stagnating incomes or economic shocks, even when their borrowing power is exhausted (Ong ViforJ *et al.*, 2021, p. 1995). However, the ultimate objectives of these products is to improve affordability conditions, encourage homeownership and support new housing supply (Whitehead and Williams, 2020, p. 13). In some cases they can also lower an individual's risk of buying a home, whilst helping to stabilise the wider housing market (Miles, 2015). Thus, with the partial exception of *Help to Buy* (which helps less marginal buyers to buy a bigger home), none of these examples are designed to make housing more suitable for longer-term occupancy. Moreover, they have failed to gain traction in the UK market because consumers see them as complex, costly and difficult to resell, whilst too little attention is being paid to second steppers.

2.3. **Dwellings:** from an economic perspective

The economic literature talks little about dwellings themselves, except at the periphery of wider critiques of housing market function and regulation. However, Brown and King (2005) - coming from an economic background - argue that supply-side interventions in the housing market will not empower people because more homes will make no improvement to the resources that households require if they are to make housing choices that are more satisfactory over the longer term. Cheshire (2018, p. R14) - an economic geographer - illustrates this problem by showing that new housing supply alone cannot give people the power to make better choices if it merely adds to the problem that the UK's existing housing stock is so inflexible that search times become longer and people make unsatisfactory compromises like accepting a longer commute. This is important to my thesis because it recognises that if new homes were designed to be more adjustable, people would not only be more likely to find the 'right' home more quickly, but the housing market would function better. This idea has far reaching possibilities because the logic follows that by shortening search times, a more adjustable stock could improve affordability, if delivered at scale (Cheshire, 2018, p. R14). In other words, the design value of adjustable housing may be measurable in terms of improved market function, albeit at such a macro scale that its impact would be difficult to disentangle from other factors.

On the whole, however, the economic literature does not consider the micro scale of the dwelling to be relevant to overall market function. Instead, economists are more concerned for the urban outcomes that flow from housing markets, observing that price-constrained homebuyers will tend to accept that their home will be smaller than they would like (Scanlon et al, 2018, pp35 & 57). For example, higher density housing is seen as being not only necessary as a way of hitting government targets, but also justifiable, being linked to social, economic and environmental sustainability (Arundel and Ronald, 2017, pp.

33–38; Scanlon, White and & Blanc, 2018, pp. 2–3). However, whilst it is understood that smaller, more densely packed homes may help to solve day-one affordability problems, changes in occupancy data and housing standards over time point towards the increasingly unequal distribution of housing space (Tunstall, 2015). With reference to such data, economists generally acknowledge that unless or until there are more demand-side interventions, the institutions governing new housing supply (i.e. planning rules and space standards) will continue to misallocate land and produce distributional inequalities and that these will be manifest in an architecture of small, dense homes that are difficult to change (Cheshire, Nathan and Overman, 2014, p. 89; Cheshire, 2018, p. R14).

The economic literature also highlights the risks that this poses to owners - something that gives urgency to my research. This is that having bought a smaller home - typically later in life[12] (English Housing Survey, 2020, p. 13; Joseph Rowntree Foundation, 2022a, 2022b) - marginal homeowners will have less time to accumulate the equity they need (after transaction taxes[13]) to make moving house worthwhile (Nationwide, 07/2019; Hudson and Green, 2017; Lloyds Bank, 2017; Gompertz, 2018). Cheshire (2018, p. R14) attributes this inability to find the 'right' home to the illiquidity of the housing market. Illiquidity has been an increasing trend in the housing market since the late 1980s, with the proportion of privately owned homes changing hands having halved in the intervening 30 years (see Figure 2, below).

[12] The average age of a first-time buyer in the UK is 33 or 37 in London (English Housing Survey, 2020, p. 13).
[13] For example, stamp duty, which is known to distort both housing and labour markets (Hilber and Lyytikäinen, 2017).

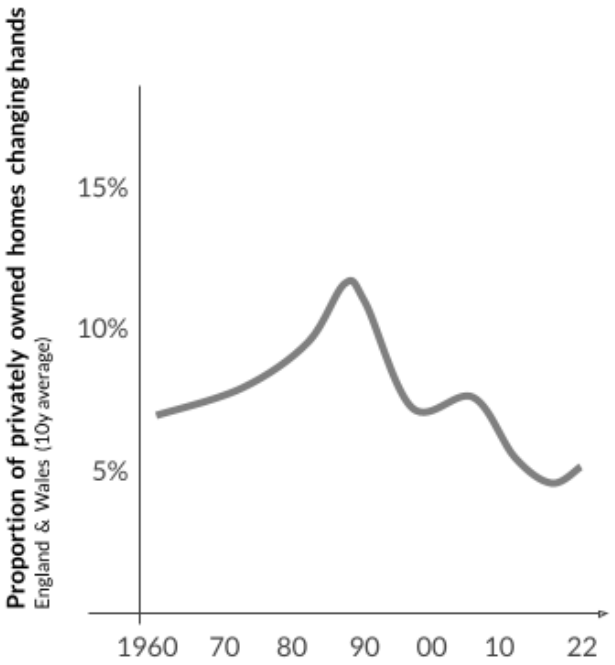


Figure 2: *Showing housing market liquidity - or, the proportion of homes changing hands - falling over a thirty year period in England and Wales (Hudson, 2022)*

Indeed, market data shows that the volume of mortgaged house moves - that is second time buyers - has collapsed since 2008[14], whereas the number of first time buyers transacting has fully recovered (Nationwide, 07/2019). The graph below reveals the largely overlooked problem that people who are at the early stages of their "housing careers" - that is, those who have recently bought their first home - may face similar financial constraints to marginal, first time home buyers because both will have little by way of stored up equity (Meen and Whitehead, 2020b, p. 1). The literature variously describes these groups as 'missing movers', 'second steppers' or 'churners' (Hudson and Green, 2017; Lloyds Bank, 2017; Ong ViforJ *et al.*, 2021) - that is, people on the edges of the housing market who may be able to afford to buy a home but are unable to close the gap between what they need and the objective market reality that they

[14] A combination of the stamp duty holiday and pent up demand following the 2020-21 Covid-19 lockdowns has meant that these trends have reversed, however, there is uncertainty around whether this is a trend or an anomaly caused by temporary, demand-side changes (Pickford, 2021).

face (Crawford and McKee, 2018, p. 194). The predicament of this group is further illustrated by the additional 120,000 mortgaged households who are estimated to have been pulled into poverty by the Q3-Q4/2022 increases in UK borrowing costs, on top of the 750,000 mortgaged homeowners already identified as living in poverty (Joseph Rowntree Foundation, 2022a, 2022b, p. 45).

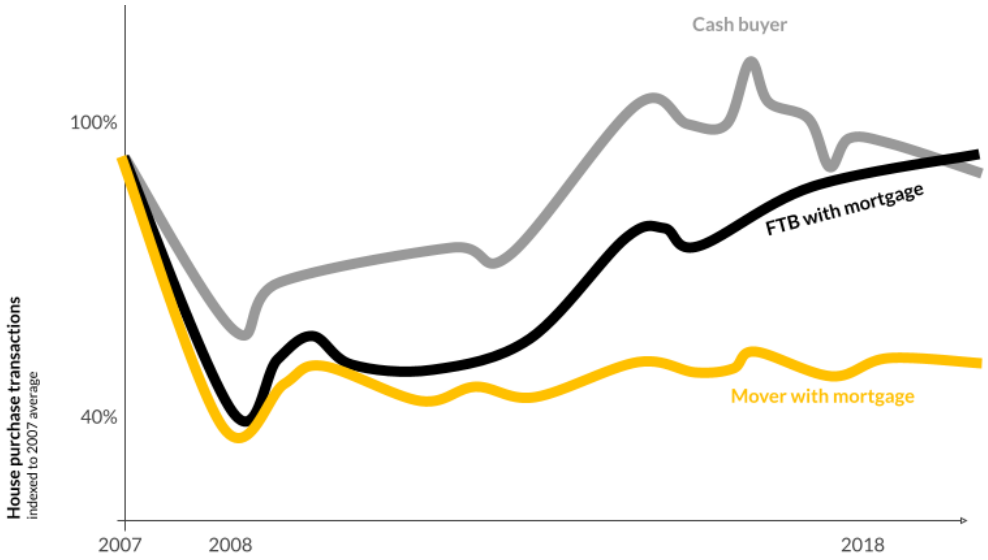


Figure 3: *Changes in house purchase transaction volumes since the 2008 Global Financial Crisis, noting that data from 2020-22 (not shown) is likely to show a break with this trend due to temporary changes in fiscal arrangements and limits to market activity caused by the Covid-19 restrictions over the same period (data from, Nationwide, 07/2019).*

One reading of this problem is that when such marginal home buyers decide to buy a small, inflexible home, their choice may simply reflect the changing structure of housing demand. After all, there is data and socio-economic literature to show that more people are choosing to live alone (Hertz, 2021) or delaying parenthood[15] (ONS, 2019, sec. 3) and the number of women deciding not to have children has doubled over a generation (ONS, 2017, sec. 5). Combined with rising separation rates (NatCen, 2020, p. 20), it could be said that

[15] The average UK first-time mother is now 31 and 34 for fathers (ONS, 2019, sec. 3).

the dominance of one-bed flats in current supply targets is justified (e.g. Mayor of London, 2017, p. 6). However, not only does single-person housing have a significantly higher environmental cost (Yu and Liu, 2007), but several urban economists are drawing attention to the market and welfare consequences of "biographical events" that arise when such households form a couple, start a family or need to give or receive care (Bell and Rutherford, 2012; Hilber and Lyytikäinen, 2017, p. 70; Scanlon, White and & Blanc, 2018, p. 59; Ong ViforJ *et al.*, 2021). Further, attention has also been drawn to the consequences for couples in dual career households, for whom there is a colocation problem when both earners are tied to cities in which the returns on education are higher[16] (Costa and Kahn, 2000; Cheshire, Hilber and Koster, 2018), but where affordability problems are also greatest (Cheshire, 2018, p. R12).

Yet, classical utilitarianism - as underpins the modern market and rational choice theory (Ryan-Collins, Lloyd and Macfarlane, 2017, p. 5) - still states that so long as these buyers are guided by their own, individual pursuit of 'pleasure' and the avoidance of 'pain', then their choice of dwelling will, *de facto,* have been 'optimal' (Bentham, 1823, p. 46). In practice, however, more contemporary reading of utilitarianism shows that Bentham's "greatest happiness principle" does not allow for the reality that some people's judgement about what makes a suitable dwelling will be skewed by factors other than utility (Bentham, 1823, p. 65; Driver, 2014). Instead, a more useful way of seeing people's choice of dwelling, from an economic point of view, is through the lens of *preference* utilitarianism.

Preference utilitarianism focuses on preferences rather than utility, recognising that choices are made up of irrational wants and rational (or *true*) preferences that can only be formed with the benefit of complete information (Harsanyi, 1977, pp. 645–6). In the UK, hedonic studies show that these 'wants' include the desire to acquire status and therefore virtue from their ability to purchase a

[16] A phenomenon that is linked to increasing gender equality in the labour market (NatCen, 2020, p. 38).

home which, for many, is seen as a positional good and social norm (Foye, Clapham and Gabrieli, 2018, p. 1294). These studies also show that utilitarian measures of value are subjective, being biased by emotions and experiences that may be temporary and which can fade after the transaction is complete (Harsanyi, 1977, p. 646; Clapham, Foye and Christian, 2018, p. 263; Kimhur, 2020, p. 263).

The origin of at least some of these competing, non-utilitarian wants comes from the overwhelming preference towards homeownership in the UK. Economic history explains this trajectory by mapping the establishment of the UK's *property owning democracy* as an idea that satisfies both sides of the UK's political divide. This is the case because on one side, neo-liberals are satisfied with the status quo that allows fully-informed individuals to transact freely, whilst on the other side, egalitarians are satisfied that such market liberalism will be dampened by the progressive taxation of wealth, or goods that have positional value (Jackson, 2012, p. 46). Thus, the idea of a utilitarian, mortgaged-backed market for residential property has become an indispensable and stabilising part of the UK's modern political tradition[17] (Reynolds, 2013, pp. 67–68; Muellbauer, 2018, p. R28; Meen and Whitehead, 2020b, pp. 211–212 & 239).

In summary, the economic literature concerning *dwelling* choices is typically framed in urban or market terms. This shows that problems of housing density and distribution flow from the fact that some groups cannot transact as freely as others (Tunstall, 2015; Meen and Whitehead, 2020b, p. 229). Such groups are not limited to first time buyers but expand out to include some existing homeowners with similarly limited levels of stored up equity. In such a market context, these groups will tend to accept density as the best way of closing the gap between their subjective wants and what they can objectively afford. Taking

[17] Stabilising because the growth of mortgage lending after 1918 helped consolidate and enrich what at the time was an impoverished UK middle class, thus avoiding the unrest seen elsewhere in Europe where rented tenure continued to dominate (Reynolds, 2013, pp. 67–68).

a utilitarianist point of view, economists consider such choices to be subjectively satisfactory, on the basis that these marginal buyers have chosen to transact in a way that gives them not only a dwelling but the relative, positional advantage of being 'normal' within the UK's predominantly home-owning culture. At the periphery of this literature, however, there is some acknowledgement that there is a potential macroeconomic value to a more adjustable housing stock - something that is important to this thesis.

2.4. **Infrastructure:** from an economic perspective

The brief history of socio-economic changes since 2008 in Section 1.1 and the overview of modern market theory in Section 2.2, show not only why some people have little option but to choose a compact, denser type of housing, but also why a utilitarian perspective can make such a choice appear optimal, subjectively speaking. However, there is little in the economic literature to describe the value - utilitarian or otherwise - of the semi-private infrastructure of the shared housing environment that is likely to accompany the choice of a smaller dwelling. Instead, the relevant scale for this area of the urban economic literature is the consumer city and the increased demand for social interactions and the associated employment opportunities therein (Costa and Kahn, 2000; e.g. Glaeser and Gottlieb, 2006). Nevertheless, there is a literature within economic theory that argues that people could make more satisfactory long-term housing choices in a shared infrastructure or environment that supports collective behaviour. To explain this, I first describe why the utilitarian, individualist way of choosing a home is bound to produce suboptimal outcomes, before showing that needs are likely to change at critical point in time.

Beginning with the limitations of the individualist way of choosing a home, political scientist Herbert Simon shows that people use heuristics to reduce the

number of unknown variables that they must navigate. This happens when the chooser is confronted by what Sardar (2010, p. 440) describes as "ignorance-cubed" - that is, ignorance of our own ignorance, ignorance of risks, and ignorance caused by information overload. Faced with this trilemma, Simon shows that choosers tend to compensate for their lack of information, prior knowledge and cognitive ability by imagining a simpler world than is really the case (Simon, 1990, p. 15; Colander, 2000, pp. 134–6). The alternative, as Simon (1978, p. 350) shows, is for the chooser to identify a small pool of options from which to select a satisfactory solution, on the basis that a choice that satisfies a range of scenarios will be better than a perfect choice that is premised on too much missing or unknowable information. This process which he calls *satisficing,* requires the chooser to go through a strategic, learning, optimising and adjusting and re-optimising process (Simon, 1990, p. 15; Friedman, 1998, pp. 16–17; Colander, 2000, pp. 134–6).

The complex choice environment which Simon describes, is illustrated by economists whose work analyses the *housing life course.* These models describe housing satisfaction as a non-linear journey that moves in and out of life stages, rather like an educational, employment, parenting or relationship 'career' (Morrow-Jones and Wenning, 2005, pp. 1741–1744; Clark and Lisowski, 2017). Described thus, this life course view shows that people's preference to move house will be greatest at or around the ages of 30 to 49 and therefore at exactly the point at which the locational ties of family and work are likely to be most established (Coulter and van Ham, 2013, p1049). In other words, the need to move house at this life stage implies the loss of capabilities that will have been built up over time and across local neighbourhood networks (e.g. schools and neighbours). Furthermore, a life course view shows housing needs have become yet more complex in the 21st Century, being now more episodic and unpredictable relative to the linear, hierarchical life course that was once expected of a nuclear family (Schmid *et al.*, 2019, pp. 198–199; Gratton and Scott, 2020, p. 10). These insights show why it is unrealistic to expect consumers

- especially younger buyers at the lower end of the housing market - to choose a dwelling that is adjustable enough or big enough to accommodate all of their short-term and longer-term needs.

Instead, Simon's *satisficing* theory shows that a choice will become more satisfactory once the chooser accepts that many of the unknown variables that they have to navigate when forming their choice will in fact come from other participants, operating concurrently but unpredictably in the same market environment (Simon, 1990, p. 15; Friedman, 1998, pp. 16–17; Colander, 2000, pp. 134–6). Evolutionary game theorists, Smith and Price (1973) build on these ideas to show that choice optimisation without complete information is in fact so complex that they cannot be formed in a single decision. Instead, they identify the need for a stabalising process (also described as a "limited war" in the natural world context), during which the strategic interests of a *group* will naturally prevail over those of the individual (Smith and Price, 1973). These observations - developed further by political scientist Robert Axelrod (1984, p. 182) - marks a break from utilitarian individualism, by recognising that a suitable decision-making environment for discovering an optimal choice is in fact a *collective* setting, where durable relationships between "players" are built up through multiple interactions or "turns". These turns repeat until all the players care enough about their future together that competitive behaviour is naturally replaced by a cooperative process of learning, imitation, trial-and-error and mutual reward[18] (Axelrod, 1984, p. 182). Thus, an optimal outcome requires more than simply an individual preference at a single point in time - as the theories of utilitarianism or even satisficing would hold - but relies on strategic action by each player to indirectly influence the behaviour of others over time (Friedman, 1998, pp. 16–17). As will be shown, this is an idea for optimisation through mediation that has relevance to the design of semi-private housing spaces.

[18] A good example of *mutual consent* has been observed by veterans of the 1914-1918 war, during which opposing armies chose not to attack each other's food supply columns, in order to protect their own (Byrne, 1988, secs 4:15–5:20).

In summary, the literature discussed in Section 2.3 shows that economists have shaped the housing market around utilitarianist value judgements that do not account for the complexity, change and unknowable future that happen over a life course. To manage this complexity, consumers need both a set of satisfactory options to choose from (*satisficing*) but also the time, space and experience to form and reform their choices in a multi-player housing environment. This suggests that economists need to evaluate the utility afforded by semi-private housing environments over time, rather than valuing housing in terms of location and individual house prices.

Conclusions on the economic literature

In the economic background to this literature review, I showed that contrary to what is widely believed, UK housing is not unaffordable in historical terms, but is unaffordable to people on the fringes of owner occupation who are typically younger or have not had time to accumulate the housing wealth they need to buy or trade up. This has led economists to conclude that the UK's 'housing crisis' is in fact a *distributional* problem for which demand-side remedies such as tax reforms are needed. However, the literature showed that for political reasons, the policy programme has and will continue to focus on new housing supply, to the extent that other innovations are now needed if these groups are to be helped into a position where they have more effective demand on the residential property market.

Starting from this foundation, my conclusions from this review of the economic literature - and some political science literature alongside - is that economists have not considered housing architecture to have a role in solving the identified distributional problems because the policy goal is for political and macroeconomic stability. For example, in Section 2.1, I showed that economists have focussed on innovative ways of boosting homeownership by giving marginal buyers more access to credit, rather than expanding buyers' choices or

capabilities. In Section 2.2, however, I showed that despite the dominance of utilitarian measures of satisfaction, there is some recognition amongst economists that more adjustable dwellings could help to produce a more adaptable housing stock - something that could shorten search times and thereby have a macroeconomic benefit to the housing market function as a whole. Further, in Section 2.3, I showed that within economic theory and political science, there is an understanding that a multiuser environment could create a shared infrastructure for people to adjust and improve their housing choices strategically and over time. In conclusion, new housing supply, alongside political and macroeconomic stability have come to dominate the economic literature. However, the failure of innovative financial products to gain traction and the failure of supply-side incentives to tackle affordability problems for people at the edges of the housing market, means there is now an opportunity to look again at the ways that the design of both individual dwellings and collective housing settings could help to achieve these entrenched political and macroeconomic goals, by taking a capabilities-led (rather than utilitarian) approach to evaluating consumer satisfaction.

3. Adjusting within walls: a review of the architectural literature

In this chapter I will review the architectural literature to give the research some foundation with regards to the ways that adjustability has been framed as a spatial or technical practice, since the late 20th Century. I have mostly made reference to UK and European literature as well as to built projects that illustrate both the concept of adjustability and the ways that adjustability has been integrated into practice. In Section 3.1, I show how little mention there is of tenure in the architectural literature. In Section 3.2, I highlight some of the influential approaches to spatial adjustability in dwelling design that have evolved over recent years. Lastly, in Chapter 3.3, I shift scales from the microscale of the dwelling to the *meso*scale of the shared housing infrastructure, with particular regard to the architectural theory concerning semi-private spaces and the social function of circulation (e.g. walkways and stairs).

To begin with, however, a note on terms. Firstly, I consider *architecture* to mean spatial practice in the built environment, within which I include not only building design but also planning and urban design. These are disciplines that are typically concerned with the value of place at the neighbourhood scale, as has been defined in urban design literature as that "complex but interrelated basket of benefits that accompanies any intervention in the built environment and ultimately flows to those with a stake in the place" (Carmona, 2019, p. 3). This "basket of benefits" is typically considered to be the shared public or municipal infrastructure of a town or city. In contrast, my scale of inquiry shifts to the basket of *semi-private* goods, as defined by the development or estate boundary. It is within this scale of a housing environment that a semi-private

infrastructure or shared circulation or other amenities will usually exist, typically paid for by a service charge.

Secondly, as briefly introduced in Section 0.1.1, my term *adjustable* is broadly akin to the term *adaptable* that is more commonly used in the architectural literature to mean changes that can be accomplished without the need for physical alterations to the building fabric (Groak, 2002, p. 15). This is as distinct from Schneider and Till's (2005, 2007; 2005) term, "flexible housing", which I have excluded from the scope of this research because it relies on a level of physical change that is often impossible in denser, multi-household settings. It is also distinct from the term *adaptability,* as relates to disability in older age (e.g. Gamble, 2015, p. 3; McCall, 2022) and which has become an increasingly central requirement of housing regulation and standards since 1995[19] (Park, 2017, p. 30). Thus, the term *adjustable* has helped me to ensure that my research addresses the plurality of transdisciplinary systems through which users' capabilities may be expanded over the entirety of a life course, rather than inferring adaptations for older age living or a more flexible, lower density of development.

Before setting aside the architectural term, *adaptability*, however, it is helpful to recognise its different meanings in the architectural literature. Pelsmakers and Warwick (2021) provide a useful rubrik for this in their call for papers for a special issue on adaptable housing for the journal, *Buildings and Cities.* They identify four types of adaptability: environmental, spatial, social and multiuser, where *environmental* means the longevity needed to reduce embodied carbon in buildings and anticipate physical adaptation for a changing climate; *spatial* means the versatility issues discussed already; *social,* which means the interdependencies between private homes and shared spaces; and *multiuser,*

[19] The increasing conflation of adaptability with disability and older age can be mapped in the legislative changes, starting with the Disability Discrimination Act (1995), followed by the 1999 introduction of Part M "Access to and use of buildings" to UK Building Regulations, and then, in 2007, the inclusion of "Lifetime Homes" in updates to the "Code for Sustainable Homes" - an English benchmarking standard (Park, 2017, p. 30).

which relates to the spillover from smaller dwellings or higher density housing into the surrounding, public amenities (Pelsmakers and Warwick, 2021). I broadly discuss the first pair of these terms - *environmental* and *spatial* - in the context of dwellings (see Section 3.2), before turning to the second pair of terms - *social* and *multiuser* - in the context of the shared infrastructure of a collective housing environment (see Section 3.3). First, however, I begin this review of the architectural literature with an unavoidably brief mention of tenure. This is so, because despite the fact that the RIBA's Plan of Work has seven stages[20] (RIBA, 2020), architects are typically not involved any earlier than Stage 3 (Concept design), or any later than Stage 5 (Manufacture and construction) and are therefore neither party to tenure choices nor appointed for long enough to observe the consequences of these choices on the lived experience. As a consequence, architects are left somewhat blind to the user experiences and transformations that would be possible, were the Plan of Works to be extended beyond traditional architectural services (Samuel, 2018, pp. 107–8).

3.1. **Tenure:** from an architectural perspective

My discussion around the framing of tenure in the architectural literature is unavoidably brief because ways of owning a home are so rarely discussed by architects. There is, however, some discussion in practice-based literature that I have found to show that architects are aware - if peripherally - that there are three ways through which housing architecture can limit tenure options. These are (1) through relationships between tenure and dwelling space; (2) tenure and materials; and, (3) tenure and neighbourly relations.

[20] The seven stages of the RIBA Plan of Work are 1. Strategic definition (i.e. client requirements); 2. Preparation and briefing; 3. Concept design; 4. Technical design; 5. Manufacture and construction; 6. Handover; and, 7. Use (including post-occupancy evaluation as a feedback loop for designers and other stakeholders) (RIBA, 2020).

Starting with the relationship between tenure and dwelling space, Park (2017, pp. 64–5 & 79) recognises that longer lasting homes are more likely to experience changes in tenure over time, and therefore architects cannot claim to have designed for longevity unless they have also allowed for bigger, more adjustable room layouts with more storage. This is because a private sale home is increasingly likely to be under-occupied, whereas the opposite will be true of the same property if rented (English Housing Survey, 2021, p. 25). Schneider and Till (2005, p. 293) give an example of this in a scheme in which small, owner occupied flats could not be adjusted to private rented tenure and could therefore only be salvaged from dereliction by adjusting the tenure instead of the space - in this case to shared ownership. Likewise, Lees and Warwick (2022, pp. 244–5) make a similar case in a scheme where design failure manifested in the shared environment, meant service charges rose so far that the tenure had to switch the other way - from social housing to owner occupation - simply to fund the rising maintenance and improvement costs. These examples show there is some awareness amongst architects that housing designed for single tenure owner occupation, risks building in obsolescence in the event that tenure preferences change over time.

Turning to the relationships between tenure and management, the architectural literature exposes an assumption that multiuser housing will *de facto* be managed by a third party, rather than by the users themselves. Nevertheless, architects appear to be aware that building design can influence opportunities for co-management, where this is considered from the outset. For example, Bennie (2018, pp. 6–7 & 15) argues that social tenants are unlikely to exercise their Right to Buy and leaseholders are unlikely to acquire a share of freehold if maintenance costs are high or not under control. This suggests that simple building forms, accessible services and robust material specifications can all help to lower capital costs, maintenance liabilities and decision-making effort, in ways that encourage residents to take on management responsibilities themselves (Levitt and McCafferty, 2018, p. 15). Likewise, McCullogh (2018)

argues that mixed tenure, “pepper-potted” housing will only produce a cohesive community if shared ownership tenure is mixed with *either* private owners or social tenants - but not both. This is because shared owners are more likely to “sympathise” with social and affordable housing tenants or else have aspirations in common with private owners, whereas when social tenants are mixed with owner occupiers, differences in incentives mean the community will be less cohesive and sales values will normally be lower (Levitt and McCafferty, 2018, p. 275).

In summary, the architectural perspective on tenure shows that the sorts of *stable* communities that Bennie recognises to be key to more “sought after” and therefore sellable schemes (Levitt and McCafferty, 2018, p. 6), rely on bigger homes, better materials and only limited if any tenure mixing. Yet, none of these practitioners consider what it takes for a scheme to be designed to encourage residents to adjust their tenure in ways that could give them more collective control (i.e. share of freehold, the right to manage or commonhold tenure). Instead, the implication is that multiuser housing will, by default, be managed by a third party, with the notable exception of cohousing which is designed with co-management in mind from the very outset (Levitt and McCafferty, 2018, p. 300). As such, architects appear more concerned for the ways that the architecture is, itself, affected by tenure, rather than in the potential for design to actually *shape* tenure and management choices over time. This is arguably because architects’ training and scope of services are too limited to impact strategic decisions around tenure, and because they arrive too late in a decision-making process in which too many decisions are distributed across too many other professions and advisors (Samuel, 2018, pp. 42 & 107–8).

3.2. **Dwellings:** from an architectural perspective

Broadly speaking, architects tend to diverge ideologically between their desire to make tailored designs for specific usages and sites - as characterised by the work of the famous Finnish modernist Alvar Aalto - and their desire to make more generic space for multiple uses -as characterised by the work of another modernist 'master' Mies van de Rohe. Very often their ambitions in this respect are hindered because they were not part of the initial financial planning of a project, or because their power to change the project is limited by their position within the client team. In an ideal world spatial design might emerge through consultation with end users, but, as this research shows, end users are rarely on stage during project design (Forty, 2004, pp. 312–317). This chapter offers a very brief summary of recent approaches to adjustability in the spatial design of dwellings.

In comparison to tenure, the physical adjustability of dwellings themselves is far more widely discussed in the architectural literature. While adjustability is implied in the modernist discourse of the first half of the 20th Century, it only starts to be discussed explicitly in architectural circles with the advent of postmodernism in the 1960s. This is when the importance of valuing multiple different perspectives simultaneously - including that of the user - began to be recognised. It is for this reason that Rabeneck *et al* (1974, p. 86) describe this more user-led approach as a way of freeing the designer from having to stereotype the occupier at the outset. The literature shows that this can be achieved through five broad strategies, each described in the architectural literature. The first is by designing bigger and more evenly proportioned rooms (Section 3.2.1). The second is by designing redundant features that anticipate future changes to the internal building fabric (Section 3.2.2). The third is by designing the construction system to accommodate various housing mix arrangements during design and construction, up to the point of sale (Section 3.2.3). The fourth is by allowing the housing density to vary during the life of the

building (Section 3.2.4). The fifth is by adding a small, extra box room to smaller dwellings (Section 3.2.5). I consider each of these literatures in turn, before concluding with some reflections on when and to whom these various adjustability strategies can realistically add value.

3.2.1. Adjustability through bigger and more evenly-sized rooms

The first characteristic for enhancing the adjustability of dwellings from an architectural point of view, is by designing rooms that are both bigger and better proportioned. This design philosophy flows from past-RIBA President, Alex Gordon's (1972) idea that mass housing should be designed with a "long-life loose-fit" approach - an idea that flourished in different manifestations, during the second half of the 20th Century (Alexander, Ishikawa and Silverstein, 1977, pp. 720–722; Habraken, 2000, pp. 134–5; Hertzberger, 2005, pp. 146–149; Simms, 2006; Schneider and Till, 2007, p. 17; Swenarton, 2017, pp. 163 & 194). Since then, the idea of a fixed space with multiple uses and configurations has been variously described as multi-usable (Saarimaa and Pelsmakers, 2020, p. 35), polyvalent (Hertzberger, 2005, pp. 146–9) or indeterminate (Schneider and Till, 2007, pp. 133–4). Architectural commentators lament, however, that in the 21st Century, the emancipatory idea of long-term, adjustable dwelling design has given way to a "tight-fit functionalism" in housing that has come to dominate higher value areas of the UK (Schneider and Till, 2007, p. 316; Park, 2017, pp. 72–73). As market forces come to bear, once hopeful architects and planners have shifted to more defensive strategies for protecting dwelling sizes from being smaller and therefore less adjustable.

For architects, one such strategy is minimum space standards legislation, which have become a bulwark against market forces and ever shrinking room sizes (Park, 2017). Another way is to provide local authorities with tools to help planners to mandate or incentivise design characteristics that enhance social value during planning approval (Samuel, 2020b). One such characteristic is

corridors that are more than a means of access and separation but become rooms in their own right. This means increasing hallway widths from 0.9m wide to at least 1.2-1.5m wide, so that they become what British architect, *Ash Sakula* described as a "sorting zone" between rooms, or what Samuel describes as a "decompression chamber" (Schneider and Till, 2007, pp. 149–150; Samuel, 2020a, p. 14). Another example is for all new housing to include bedrooms of equal size, or ideally, unlabelled and "functionally neutral rooms", where no room is less than 3.6m in any dimension[21] (Schneider and Till, 2007, p. 186).

The logic of these space-led positions is clear: homes with small rooms and not enough storage are harder to adjust, have consequences for wellbeing, will house fewer people than is claimed, and will put pressure on people to move house when they would otherwise prefer not to (Park, 2017, p. 85; Scanlon, White and & Blanc, 2018, p. 35; Samuel, 2020a). Park (2017, p. 80) argues that these factors not only exacerbate known under-occupancy problems but contribute to older people's evident reluctance to downsize. It is clear, however, that bigger rooms mean bigger, more expensive dwellings that will be out of reach of many marginal home buyers, for the socio-economic reasons described in Chapters 1 and 2. For these reasons, architects recognise that adjustability in dwellings cannot rely on space standards alone, but must also use less space-hungry and more cost-effective strategies.

3.2.2. Adjustability through redundant features

The second set of characteristics that architects advocate is a degree of redundancy or simplification that anticipates change in ways that are embedded in the fabric or layout but which do not rely on bigger dwellings. Schmidt *et al* (2010, p. 238) organise these solutions under the headings of flexibility,

[21] Schneider and Till (2007, p. 186) recommend minimum room proportions of 3.2 x 3.8m or ideally, 3.6 x 4.0m.

extendability, refit, reuse and customisation[22]. Of these, refit and reuse describe some of what Saarimaa and Pelsmakers (2020, p. 35) describe as *transformational* strategies for changing the fabric of a home. Specifically, these anticipate the need for physical updates to keep pace with environmental, technical or market change, thereby avoiding premature obsolescence (Groak, 2002, p. 15; Schneider and Till, 2007, p. 5; Saarimaa and Pelsmakers, 2020). Many characteristics for doing this overlap with the real estate literature (see Section 4.2, below). For example, Schneider and Till (2007, p. 197) - like Pinder *et al* (2013, p. 448) - advocate designing with extra tolerance in the structural elements or service risers, so that there is always some redundancy or "over-capacity" to accommodate another storey, an extension or an updated heating system. They add to these features a legible, accessible approach to services and structure, so that pipes, cables and ducts may be easily accessed (rather than being buried in plastered walls) and loadbearing elements can be easily identified (Schneider and Till, 2007, pp. 194–199).

Aside from these mostly hidden or buried characteristics, architects also recommend some spatial strategies for enhancing dwelling adjustability, again without increasing the floor area. For example, Femanias and Geromel (2020, pp. 496, 499 & 501–2) describe the importance of avoiding *floor plan fragmentation* - a term they use to describe a breakdown in the diagrammatic flow of an apartment breaks down as a consequence of the initial design or subsequent changes. They show through post-occupancy evaluation that this fragmentation is often triggered by 'dead' or redundant spaces in the original layout, but also because residents appear to simply want homes that give them the option of change - something that designers should specifically plan for, if only to minimise the material waste that flows from internal alterations (Femenias and Geromel, 2020, p. 502). Likewise, Lavington (2018, p. 55) sees change as an inevitability, especially for families who need open plan spaces for

[22] A six-way Venn diagram ably illustrates the blizzard of terms that makes adaptability in the built environment so difficult to operationalise in research, much less in practice (Schmidt *et al.*, 2010, p. 238).

younger children, only to needmore separation for teenagers, yet have to make do with layouts based on regulations that envisage only one or other stage of a nuclear family and which do not recognise that many family-sized flats are in fact occupied by downsizers.

To accommodate all of these variables - and the near certainty of change - Schneider and Till (2007, pp. 194–199) advocate a simple, legible approach to structural layouts, so that the non-loadbearing walls can be easily remodelled or disassembled. Other spatial strategies include enlarged recycling storage (CABE, 2009, p. 4), well proportioned plan depths, good daylight orientation and careful window positioning, as will tend to produce more layout options (Saarimaa and Pelsmakers, 2020). These features, however, are not necessarily visible to the naked eye and may not, therefore, be recognisable, understandable or valuable to the buyer. For example, Samuel *et al* (2020a, p. 14) use post-occupancy evaluation to confirm that daylight and views are valuable features because they give people ways of adjusting their living space around different uses. Yet, Scanlon *et al* (2018, pp. 35–58) show that the allure of good daylighting makes buyers more attracted to floor-to-ceiling glazing at the point of buying or renting their home, only to discover during use, that this very feature in fact limits their storage and layout options, to the extent that some possessions may have to be stored elsewhere, making a house move more likely (Scanlon, White and & Blanc, 2018, pp. 35–58). These examples suggest that even when architects know how to make a home more adjustable, it is difficult to deliver such characteristics when buyers place greater value on characteristics such a floor-to-ceiling glazing that may in fact prove to *restrict* adjustability over the longer-term.

3.2.3. Adjustability through customisation

A third strategy that architects have advocated for making dwellings more adjustable is customisation - one of the features listed by both Schneider and Till (2007, pp. 46–9) and Schmidt *et al* (2010, p. 238). Customisation offers a way of adjusting the mix of dwelling types and sizes during design and construction, up to the point of sale and sits in a literature with which architectural theorists and practitioners, Habraken, Duffy and Brand, are most closely associated. These flow from Habraken's (1972, 2000) theory of *supports*, in which he recognised that modern methods of multi-dwelling housing construction need not disempower the user, so long as the building is conceptualised as a system in two parts: the supporting structure and habitable infill. Duffy (1998) then Brand (1995) expanded this idea into a 'six-S' model that distinguishes between "shearing layers", or building elements that are independent of each other. From the inside-out, these layers are, *stuff*, *space plan, services* and *skin* (i.e. external envelope), *structure* and *site*, where only the structure is fixed and the *site* is eternal (Brand, 1995).

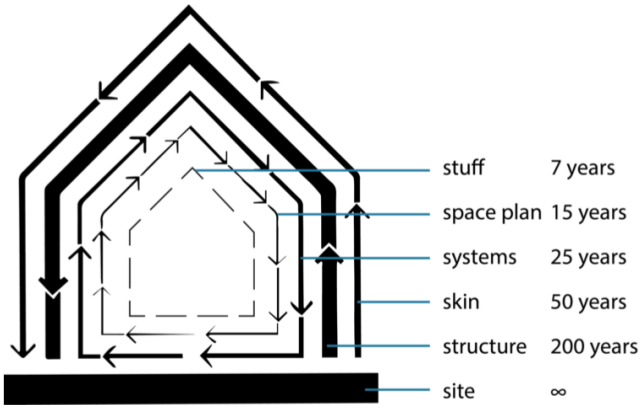


Figure 4: *Stuart Brand's "Shearing layers" model, separates contractor-controlled fabric from owner-controlled systems and user-controlled stuff and space plan (Brand, 1995).*

The shearing layers approach illustrated above has become central to *Open Building* theory and practice. Here, Habraken and Brand show that by separating supports from infills - and by disentangling the technical and constructional layers - architects can design with a greater concern for environmental and lifespan issues, as well as for issues of user engagement (Kendall and Teicher, 2010; Kendall, 2021, pp. 139–140). These sorts of separations are familiar in the commercial sector where tenancies allow for improvements and alterations (Sayce *et al.*, 2009, p. 280), however, their application in mass housing has only recently been adopted by the SuperLofts model[23]. When translated into a residential real estate situation, a new role appears for the architect to become not just a spatial practitioner but a coordinator of users' preferences and an enabler or facilitator of a custom-design process (Kendall, 2021, pp. 37–40).

Schmidt *et al (2010, p. 240)* argue that because this layered approach means internal fitout is relatively under-designed, there is more scope for users to be engaged in the design of unfinished spaces. This may be helpful given the need for new housing to become more responsive to the changing nature of housing aspirations, rather than continuing to lock in outdated cultural norms (Preece *et al.*, 2020, p. 101). For example, the chance to choose or customise can give users an opportunity to become active participants during design stages (Schneider and Till, 2007, pp. 46–9). However, the layered, 'supports' model has been criticised for being a theory of construction rather than adjustability. This is because once each layer is delivered, the building becomes fixed, thereby streamlining and industrialising the production process, but separating architects from playing an active role in designing for social change (Schneider and Till, 2007, pp. 171–2). Another criticism is that this level of customisation and choice requires a property agent to sell - at a premium - spaces that are variously unfinished, oversized or incomplete (Schneider and Till, 2007, pp. 133–140). This means that the value of adjustability is bound up in the

[23] See also: https://superlofts.co

experience of custom design, rather than in the freedoms and capabilities that customisation might provide over the longer-term.

Such a focus on short-term customisation and longer-term refit - rather than on the continuous nature of changing household needs - places the layered approach to construction within what Pelsmakers *et al* (2020) define as *environmental adaptability*. This is an approach to housing design that is directed towards day-one *environmental* and *efficiency* goals, rather than supporting the sorts of user-led changes that occur once a building is occupied. Though important from a climate and resilience point of view, such environmental objectives may be irrelevant if a building is so hard to adjust that it becomes obsolete before the intended environmental upgrades are ever realised (Pelsmakers, Poutanen and Saarimaa, 2020, pp. 270–1).

3.2.4. An adjustable housing mix

Whilst customisation offers consumers - and developers - some choice up to the point of sale, this does not help with the problem of change over the longer term that Femenias and Geromel (2020, pp. 501–2) show becomes likely or inevitable. This is because custombuild housing ultimately locks in the mix of dwelling types and sizes, to the extent that they cannot normally vary once the scheme is fully occupied. One solution to this problem is what the Dutch architect Herman Hertzberger (2005, 2015) describes as *structuralism*. Hertzberger's definitions of this include redundant rooftops, balconies or other outdoor spaces onto which a homeowner may extend their home, if or when the need arises (Hertzberger, 2015, pp. 146–149). The architectural literature often cites Hertzberger's *Diagoon Houses* in the Netherlands (Schneider and Till, 2007, p. 82) or Elemental's Quinta Monroy houses in Iquique, Chile (de Chile and Verona, 2006) as examples of incomplete buildings where the leftover or "slack space" means the cost and control of finishing the home sits with users.

Such extensions and alterations, however - though helpful by way of illustration - sit outside the scope of my research. This is because they affect the *external* fabric of a building and therefore sit more correctly with Groak's definition of flexibility rather than adaptability (2002, p. 15). Instead, the question of adjusting the housing mix concerns an approach to adjustability that is akin to Schneider and Till's (2007, pp. 140–141) definition of "expanding within" - an expansion of the private home that can occur within the over-provision of space within the original frame or envelope. This approach has the limitation, however, that over time, the first owner is likely to opt to infill most if not all of any surplus or "slack space" that is provided (Schneider and Till, 2007, p. 140). This means that once complete, the opportunity to adjust again is usually lost.

In contrast, the housing density - the mix of sizes - can be adjusted when the design allows for "switch rooms" between dwellings, which can be joined or apportioned to one adjoining flat or another (Schneider and Till, 2007, pp. 185–189). Similarly, Christopher Alexander *et al* (1977, pp. 719–731) give examples of a whole house which can be divided to make a severable apartment, annex or "cottage" for a teenager, for an older relative, or for rent. Alexander *et al (1977, pp. 719–731)* argue that when these capabilities are designed for from the outset, they can improve household relations, make more efficient use of space and - in the case of a rented annex - create a "face-to-face rental" relationship that is likely to be positive for both tenant and landlord, as well as for the upkeep of the scheme as a whole.For illustration, architect Julia Park shows how a single 100m2 apartment shell can be divided or reconfigured in multiple ways, thereby showing that it is possible for the housing density to vary over time (Levitt and McCafferty, 2018, pp. 188–9). The principles of an adjustable housing density can also be illustrated through some existing housing developments. The closest built example that I have found is a cooperative-led apartment building on *Hellmutstrasse* in Zurich (Switzerland), by architects *ADP Architektur und Planung* (built 1991). In this scheme, the dwellings are endlessly adjustable, supported by a shared, outdoor circulation that offers

a semi-private environment for any spill-over of some normally private or domestic activities (Till and Schneider, 2005, p. 290).

Figure 5 *(left): External view of the scheme on Hellmutstrasse in Zurich, showing how the open access stair and shared balcony walkways enable various access arrangements (author).*

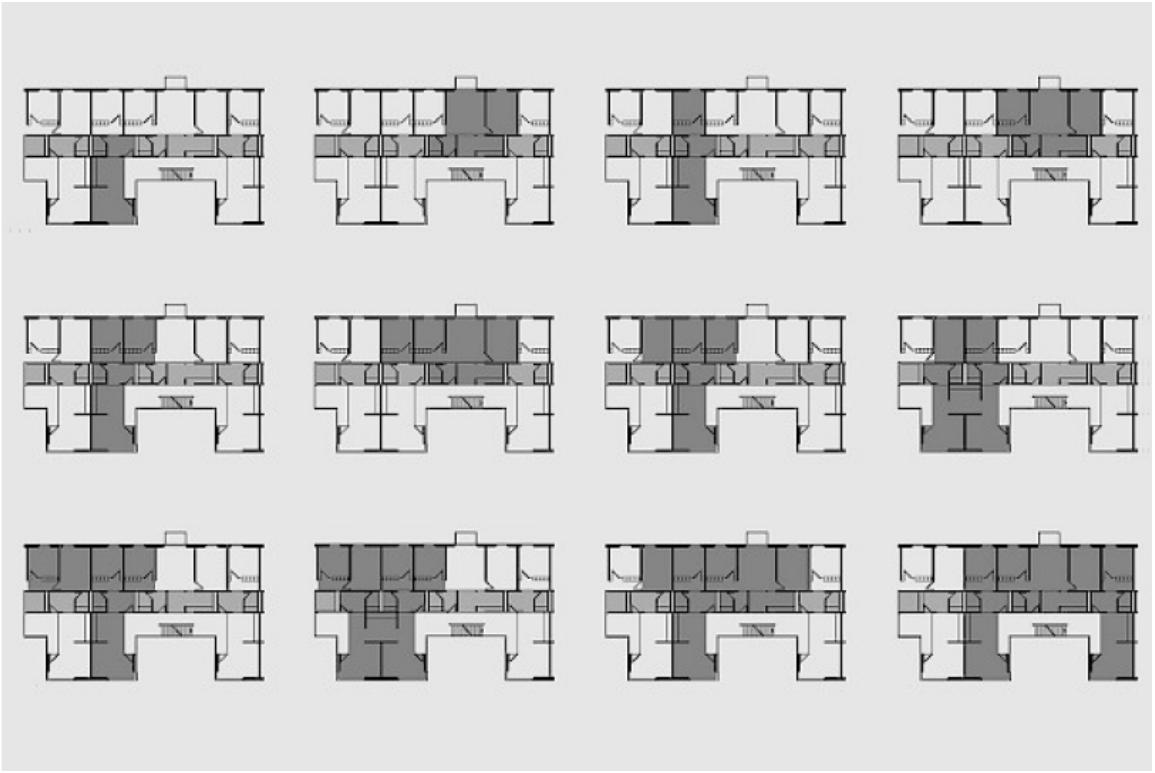


Figure 6 *(above): Typical floor plan of the scheme at Hellmutstrasse in Zurich, where wet services and spaces are on a central spine, allowing multiple configurations of flat type where the shared stair access also serves as a habitable landing (Credit: ADP Walter Ramsier, Zurich).*

A UK example of an adjustable housing mix is *Paradise Gardens* in Hammersmith, London, by architects, *Lifschutz Davidson Sandilands* (built 2015) which comprises joinable/divisible townhouses (Sandilands, 2015). Being 100% rented, however, it may be assumed that a landlord rather than the occupier has the power to divide or join dwellings based on market conditions. Another is the *Livinhome* concept developed by architects *Geraghty Taylor*, as built in Woodview Mews, Croydon. Here, the housing mix may be as few as six houses, or as many as 18 flats, although three separate planning applications were needed to approve such a layout and any change will need separate approval (Geraghty, 2015). Further, as noted by Pritchard (in Geraghty, 2015), there is the problem that in the UK, people use property as a store of wealth and therefore the idea is somewhat contingent on a change in housing culture amongst the owners.

Figure 7 *(left): Geraghty Taylor's 'Livinhome' model allows townhouses to divide into flats and maisonettes (Geraghty, 2015).*

In summary, architects are aware of some ways of varying the housing density of a scheme through joining, dividing or using switch rooms. This represents a strategy that could, over time, help people to close what Crawford and McKee (2018, p. 194) describe as the "aspirational gap" between their subjective desires and the sorts of smaller, more inflexible homes that many buyers either choose or have no option but to choose, because of the market realities that they face. Yet, design strategies that produce incremental, user-led changes in floor area, may not fit within the UK's space standards. These are standards which the government acknowledges may not be granular enough to allow for the sorts of innovation in housing design that is needed, especially in compact housing or in higher density areas (Department for Levelling Up, Housing and Communities, 2017, p. 89).

3.2.5. Adjustability through an extra room

The literature that I have reviewed so far shows that architects have produced a range of strategies that deal with the temporal challenge of adjustability. Each, however, has limitations, being variously costly, subtle, short-term or technically difficult to deliver for all but the most innovative developers or wealthy buyers. It is therefore useful to close this section of the architectural literature review by reflecting on the potential for small, familiar and easily identifiable characteristics to improve adjustability without relying on specialist knowledge. This solution exists in small additional rooms - or *box rooms* - as demonstrated through post-occupancy analysis of home working habits by architect Francis Holliss (2021, pp. 374–5). She shows that people need a separate, dedicated space to work effectively in their home, but that this need only be 6m2 in floor area - 1.5m2 smaller than the 7.5m2 that constitutes a single bedroom in UK space standards guidance. Using case studies, Holliss (Holliss, 2021, pp. 374–5; Holliss and Barac, 2021, pp. 10–15) show that despite their small size, such spaces can adequately support office work, craft-based work, a playroom, a child-minder or a box bedroom.

Likewise, new research into how private outdoor spaces are being used in smaller dwellings, shows that balconies are not just sitting spaces or an enlarged window ledge for putting plants on, but have become places to work, play, meet, repair something or to store bikes, plants or house pets (Peters and Masoudinejad, 2022; Smektała and Baborska-Narożny, 2022). These findings suggest that - like a box room - size, proportion and connection to indoor areas should be considered as more than a marketable add-on but as a key ingredient to the adjustability of a dwelling, being meaningful accommodation for any spillover of a household's needs (Peters and Masoudinejad, 2022; Smektała and Baborska-Narożny, 2022). In summary, it appears from these insights that a greater degree of cellularity in housing layouts, could better separate work and home life and thereby help to reduce hardships such as work or family stress, low productivity and mental health problems, as are affecting the UK's large, valuable but often hidden home-based workforce (Carmona, 2021, p. 65; Holliss, 2021, pp. 374–5).

Summary

To conclude this review of the adjustability options for private dwellings, the architectural literature has shown that whereas bigger and equally sized rooms are the most adjustable solution for private dwellings, architects recognise that this will be unaffordable for some buyers. Meanwhile, solutions that include redundant or rationalising features may cost less to deliver, but rely on consumers willing to pay for something of which they have no prior knowledge or which they cannot see. Instead, a layered approach to construction produces a rational *supports and infill* solution, whilst offering a custombuild experience for which some buyers are more likely to pay. Alternatively, architects recommend leaving an unfinished space, on the basis that some people will pay extra for the opportunity to save money in the first instance and customise the leftover space in the future when they decide to (or can afford to) expand within.

These layered or customisable approaches to construction, however, appear to be adjustable only up to the point of sale and occupation, or in the case of an unfinished expansion space, are only likely to be adjusted once. In contrast, the option to divide or join dwellings, or connect to a room between dwellings, can offer a more continuously adjustable solution. Alternatively, devices as simple as an additional box room or outdoor balcony space have been shown to provide a disproportionate level of adjustability and utility within the internal dwelling area. This is an approach that developers and buyers are more likely to understand - so long as architects understand them too - because they offer a tangible 'pressure valve' for absorbing private housing needs, without significantly affecting affordability. These needs, however, could equally spillover into the shared housing environment, in ways that I turn to next.

3.3. **Infrastructure:** from an architectural perspective

Whereas the adjustability of private dwellings is reasonably widely discussed in the architectural literature, the role of the shared housing infrastructure - the walkways, stairways, landing and gardens - is rarely thought of as being useful or as having a social function. Instead, non-private space is typically considered simply as circulation (Levitt and McCafferty, 2018, p. 53), or else, as a 'slack space' that might eventually be infilled, extended into or elsehow subsumed into private dwellings (Schneider and Till, 2007, pp. 136–137). There is, however, some architectural and urban design literature that recognises the importance of non-private space as a provider of either passive security or for enhancing the social experience. In this section, I will explain these two sets of ideas, before showing how the respective literature could help to identify some of the characteristics that are needed for a shared housing environment to become co-managed and therefore adjustable to users' changing needs over time.

Before reviewing these literatures, it is important to define the idea of living together in separate dwellings, as a modern, secular solution to European urbanisation. For example, British philosopher Bertrand Russell (Russell, 1935, chap. 3) considered housing with communal amenities (e.g. a shared kitchen and children's nursery) to be a solution to the 19th Century problem of family and work life coexisting under the same roof. Since then, economic and welfare motivations have shaped the post-war political consensus in Europe since the 1939-45 war, but with a greater emphasis on security, stability and the nuclear family (Schmid *et al.*, 2019, p. 20). As an architectural form, the Swiss-French architect and pioneer of modern architecture Le Corbusier, showed how these needs could be accommodated in a single housing development or estate. Central to this social and design logic is his idea of the "binomial of individual-collectivity" - that is, the idea of private family dwellings or "cottages" that are mutually dependent upon a shared "cottage cooperative" (Gans and Corbusier, 2006, pp. 80–88).

Le Corbusier's Unite in Marseilles - one of a series of prototype Unites - was, as the name implies, built around a collective vision, as described in his book The Radiant City (Corbusier, 1967). This was a very different vision from his earlier, zoned plans that were so influential worldwide and led to a segregation of urban spaces that proliferated with post-war welfarism and state-owned housing. To these zoned cities, theorist Jane Jacobs (1961) responded with the idea that shared, semi-private spaces *between* private dwellings and the public street can in fact have value, highlighting the social importance of threshold spaces such as front steps (or 'stoops') (Jacobs, 1961). Architect and urbanist, Oscar Newman (1973) translated these observations into the multiuser housing environment by differentiating between semi-private spaces (such as lobbies, landings or stairs) and semi-public spaces (being outdoor areas or gardens that are accessed by a number of residents). US-based architect Christopher Alexander, then adapted these ideas for the suburban town, highlighting the increased value of shared outdoor spaces or car-free streets when they are

surrounded by private homes or "cottages" (Alexander, Ishikawa and Silverstein, 1977, p. 200).

It is at this point that the literature and theory concerning semi-private and semi-public spaces, divides in two. The first area of design theory concerns its role as a "defensible space", within which the connections and overlook between private and semi-private can help to ensure personal safety[24] (e.g. Newman, 1973; Coleman *et al.*, 1985). Newman (1973) showed this by using post-occupancy evaluation to expose higher crime rates in high rise residential buildings, where certain architectural elements - specifically landings, lifts and stairs - are less well connected to or overlooked by private dwellings. However, Lees and Warwick (2022, p. 227) find that more than design, the maintenance and management of multiuser housing is at least as important, and therefore the priority for designers is not to create fixed solutions based on determinist ideas of what works, but to ensure that the shared housing environment is free to evolve over time, in response to changing needs, problems, situations or funding.

Fundamental to the responsiveness of the shared housing infrastructure to changing needs, is the ability to manage - a central concern of this thesis. Arundel and Ronald (2017) find that this is contingent on built form and scale, because social interactions, sense of community, satisfaction and stability are unaffected by the level of density in a scheme. Scanlon *et al* (2018, p. 57) develop this by showing that in higher density housing[25], these satisfactions are determined by the clustered organisation of the development and crucially, people's sense of a personal connection with decision makers. However, Lees and Warwick (2022, p. 242) find that this connection to management and neighbours is lost when the scale of a development passes a tipping point above which passive surveillance, informal encounter between neighbours and the

[24] The origins, development and criticisms of defensible space theory is more fully recounted by Lees and Warwick (2022, pp. 4–17).
[25] Taken to mean 100 dwellings or 400-plus habitable rooms per hectare (Scanlon et al, 2018)

communal ownership of shared spaces give way to anonymity and a greater reliance on building management rather than user involvement. Levitt and McCafferty (2018, p. 239) put this tipping point at 20 flats per entrance, with no more than eight flats per floor. Alexander *et al* (1977, p. 200) define a meaningful level of connection as being a scale which gives people the capability to meet face-to-face around a dining table, thus recommending a clustered form of 8-12 dwellings.

This need for design subtlety and nuance is understood by architectural theorists, for example, Schneider and Till (Schneider and Till, 2007, pp. 149–150), who recognise that shared circulation is "more than a means of access". In practice, however, Lavington (in Levitt and McCafferty, 2018, pp. 52–55) points to a lack of post-occupancy evaluation - especially in denser schemes - which leaves architects with little by way of evidence to show how shared spaces are actually being used. Instead, the idea of proximity and collective decision-making has been characterised and idealised by the concept of cohousing. As discussed more fully in Section 4.3, this is a highly sociable way of living, relative to similarly collective but more privacy-based equivalents such as condominiums (Jarvis, 2015, p. 94). As such, architectural research appears to have reframed the sorts of spatial interdependencies that I have identified so far as an exclusive and explicitly communitarian experience. For example, research into the lived experience of cohousing by UK architects, Studio Weave (2018, pp. 158–160) variously describes the model in terms of "affordability", "diversity", "solidarity" and "proactive peers", whilst highlighting the need to avoid "middle class bias". This indicates a reactionary and politicised view of what housing could be, where the sorts of economic, political and social changes that I laid out in Chapter 1 are repackaged as "a longing to understand and redefine oneself" (Schmid *et al.*, 2019 foreword).

Yet, there exists in architectural theory and post-occupancy evidence, some evidence of a less radical - even familiar - alternative to cohousing, in which

people appear to recognise the social value of a shared housing infrastructure. For example, Lees and Warwick (2022, p. 243) note that the walkways and communal spaces that were once feared in modernist estates are now deemed acceptable and even desirable, due to image-led marketing, often referred to as 'gentrification'. Furthermore, they also note that the boundaries between private homes and intermediate spaces have become blurred, especially during the 2020-21 Covid-19 restrictions, when the need for spillover spaces or space apart from other household members meant that non-private areas such as access decks have become "rooms beyond the front door", whose success relies on a sense of ownership, safety and user control (Lees and Warwick, 2022, p. 247). These includes shared circulation which can be occupied and co-opted for other uses or take pressure off tighter dwellings and improve the social experience (Schneider and Till, 2007, pp. 148–149 & 185–9) or the sorts of communal stairs and landings that Hertzberger (2005, pp. 35–38) shows can become non-private balconies, given a sense of ownership and adjacency. To date, however, as Lavington (2018, p. 55) notes, architects have little margin to enhance the community potential of such intermediate shared spaces because these are typically framed as a trade-off between higher service charges on the one hand and a way of compensating residents for their relative lack of private living space on the other.

In summary, the *RIBA Plan of Work* shows why practitioners typically have neither control over the design briefs nor the insight of post-occupancy evaluation that they need if they are to enhance intermediate spaces. This is despite 60 years of architectural theory and evidence to show that such spaces are socially valuable, not only for security but also as a neutral arena in which neighbours can feel more connected and thereby more able to control and adjust their own housing environment. Instead, architects have tended to overlook opportunities to enhance ordinary housing and have instead, tended to valorise radical, yet exclusive ways of delivering these outcomes through models such as cohousing. This has limited architects to designing the objects of

architecture, rather than the consequences of architecture (Awan, Schneider and Till, 2013, p. 33).

Conclusions on the architectural literature

My focus of investigation in Chapter 3 has been on the parts of the delivery journey that architects have a chance of influencing. I have briefly reviewed the architectural literature and theory to find ways that architects might make multiuser housing more adjustable. Fundamentally, the purpose of such adjustability is to free the designer from having to stereotype the occupier at the outset (Rabeneck, Sheppard and Town, 1974, p. 86). Yet, in Section 3.1, I showed that architects *do* stereotype residents by, for example, designing around the default assumption that a development will be managed by a third party. Likewise, in Section 3.2, I showed that architects assume that occupiers will be able to pay for bigger rooms or willing to pay for redundant features that they cannot see, whereas small box room or the option to join and divide dwellings are more tangible yet effective ways of allowing the population and housing density to vary beyond the point of sale. Lastly, in Section 3.3, I showed that architects have integrated the idea of *defensible space* into housing practice, yet continue to stereotype the experience of multiuser housing as being either private or sociable, because they lack the evidence they need to design an intermediate environment for spillover that people can control. This lack of post-occupancy data to back up decisions made in architectural practice is becoming increasingly apparent to the small number of theorists engaging with housing evidence (Samuel, 2018). This is a gap to which my research attempts to contribute, by highlighting the missing insight that could come from integration with other fields, such as real estate, to which I turn next.

4. Adjusting the rules: A review of the real estate literature

In Chapter 4, I turn to the real estate perspective, with some reference to literature by geographers, legal academics and political or social scientists, with whom matters of land, title and governance can overlap - especially as regards cohousing. This need for a multidisciplinary view is captured by one definition of real estate as a discipline "at the intersection between the space market and the capital markets", which concerns both the product and process of property in a field that covers six processes or systems (McGrath *et al.*, 2020, p. 44). These are, *entitlements* (or tenure), *marketing, design, financing* (i.e. banks and funders)*, construction* and building *operation (McGrath et al., 2020, p. 44)*. Each section in this chapter considers the relationship between these systems and the three axes of my adjustable housing proposition. Thus, in Section 4.1, I explore how legal *entitlements* (or tenure) - the first axis of the adjustable housing model - help to shape the *design* and building *operation* of co-managed housing. Next, in Section 4.2, I explain how dwelling *design* both shapes and is shaped by *marketing, construction* and *financial* risk. Lastly, in Section 4.3, I review the cohousing literature with regards to the relationship between the shared housing infrastructure and the marketing and operation of new housing. I close by drawing some conclusions from the literature. Throughout this chapter, I refer to either cohousing[26] or, to micro-housing[27].

[26] The official definition of cohousing is, "intentional communities, created and run by their residents [in which] each household has a self-contained, private home as well as a shared community space" (UK Cohousing Network, 2021).

[27] Micro-housing is less clearly defined but appears in both architectural press and government policy in the context of homes that challenge space standards at the lower end of the scale and often cite the 1-person flats developed in London by developer, Pocket Living ('Micro-homes: Part of the solution or part of the problem', 2015; Department for Levelling Up, Housing and Communities, 2017, p. 89).

Before beginning, the question of adjustability from the real estate perspective must first be positioned within the UK's housebuilding context. This is because the new build housing is widely seen as a market of little choice (Horn, 2019, p. 49). Such criticism, however, cannot be laid entirely at the door of the volume housebuilder industry because developers operate within the UK's legislative system and current market environment. Central to this is the UK's land market in which key inputs such as design parameters and development timings will not be known until planning conditions - and land values - have been fixed, leaving developers at considerable risk (Crosby, Devaney and Wyatt, 2020, p. 190).

In this context, dominant actors (in this case, volume housebuilders) act to 'capture' easy-to-match buyers in the market by selling them standardised, lower-cost homes that are easier-to-match to the majority of buyers (Roth, 2015, pp. 47–49). This leaves innovative developers in the yet more risky (and therefore costly) position of trying to match more unusual housing with a smaller, residual pool of more choosy buyers (Smith, 2015, p. 77). The situation for such innovators is made worse by land value appraisals and the planning process, both of which create an asymmetric contest between applicant and planners that favours those volume house builders that can afford to pay for agents, valuers and real estate appraisers (Guy and Henneberry, 2000, pp. 2408–2410; Crosby and Wyatt, 2019, pp. 371 & 383). This brief overview of the real estate and planning context explains why the innovations in tenure, dwelling design and infrastructure that I discuss hereafter, are not mainstream practice in the UK.

4.1. **Tenure:** from the real estate perspective

In this section I explore how legal *entitlements* (or tenure) shapes the *design* and building *operation* of multiuser housing developments, by producing a bundle of shared assets, rights and benefits that variously affect people's sense of freedom and control (Lehavi, 2008, p. 139; Ostrom, 2015). To do this, I have broken down the real estate literature concerning tenure into three subsections. I begin with an overview of the conventional UK tenure options available to occupiers of privately owned or rented housing and explain why *collective* entitlement to residential property creates cultural and legal difficulties in the UK (Section 4.1.1). I then highlight the alternative tenure arrangements that could give resident communities more power to adjust and control their housing (Section 4.1.2). Lastly, I discuss the pros and cons of giving people the right to be part of the design process, as a way of establishing collective title, before the right to manage is sold to a third party (Section 4.1.3).

4.1.1. Conventional UK tenure options

The real estate literature shows that people on the edges of the owner occupied sector have a suite of conventional tenure options available to them. These are quite aside from the financial innovations that I discussed in Section 2.1 and already allow people a range of ways to adjust their housing. For example, they can make adjustments by moving within the private rented sector, or else, can adjust their shared housing environment by collectively owning and managing the shared, semi-private housing infrastructure that surrounds private dwellings (gardens, circulation, service charges, etc). It is therefore helpful to begin this chapter by setting out the tenure options available to occupiers of private, multiuser housing developments or apartment buildings in the UK.

Dominating the private rented sector are *Assured Shorthold Tenancies* (ASTs), which do not provide an automatic right to renew or even security of tenure

beyond the first six months (Ryan-Collins, Lloyd and Macfarlane, 2017). In contrast, *Assured* Tenancies (AT) are also an option at the landlords' discretion. These offer tenants the security of longer contracts and an automatic right to renew (Whitehead and Williams, 2019, pp. 7, 9 & 21–22). However, despite being widely reviled as providing "institutionalised insecurity" to tenants, it is ASTs - rather than their more secure AT equivalent - which have come to dominate the UK private rental market. This is in large part because they shift the balance of power to landlords who are free to set market rents and have the right to reclaim their property after as little as six months and without reason (Kemp and Keoghan, 2001, p. 30; Christophers, 2021, pp. 584 & 587). This imbalance may be poised to change, however, following campaigns and research around reform to no-fault evictions (i.e. Section 21 of an AST contract) and standard tenure lengths (e.g. Centre for Social Justice, 2019, pp. 5–6, 2021, p. 36). These reforms have ensured that rental rights are now high on the policy agenda[28] with the effect that renting will soon become a less precarious and potentially more attractive option for people who might previously have preferred to buy a home (Wilson and Barton, 2021a; Department for Levelling Up, Housing and Communities, 2022, chap. 3).

Notwithstanding these reforms, it is unlikely that the cultural or political preference towards homeownership will change, for the reasons explained in Section 2.2 (Jackson, 2012; MHCLG, 2020, p. 3; Corlett and Odamtten, 2021, p. 18). It therefore remains important that my and other research continues to consider the options for marginal *buyers* (rather than renters) whose income and wealth places them at the boundary between rented and owner occupied

[28] For example, the recent policy programme has included leasehold reform (Cromarty, 2022), related proposals for commonhold tenure (Wilson and Barton, 2021a), recommendations for planning reform (Wilson and Barton, 2021a; Grimwood, 2022), a high profile review of industry standards (Department for Levelling Up, Housing and Communities, 2020), legislation for wellbeing in housing (*Homes (Fitness for Human Habitation) Act 2018*, 2018, *Healthy Homes Act*, 2021; TCPA, 2020), the strengthening of renters' rights in the *Renters' Reform Bill* and associated white paper (Wilson and Barton, 2021b; Department for Levelling Up, Housing and Communities, 2022, chap. 3), changes to public procurement rules (*Public Services (Social Value) Act 2012*, 2012) and guidance for development and planning (Scruton *et al.*, 2020).

tenures. In this case, the dominant form of homeownership for apartments and new build homes in England and Wales[29] is through a long leasehold. This is a tenure arrangement where leaseholders own the right to live in their property for an agreed period, but a separate freeholder will retain responsibilities for management, maintenance and insurance, in return for service charge payments (Wilson and Barton, 2021a, p. 12). In other words, buyers may feel they own their home but in fact have no means of adjusting their private living space or shared surroundings without permission from a third party.

4.1.2. Collectively empowering tenure options

Instead of accepting the loss of agency that comes with a leasehold-freehold arrangement, UK legislation allows leaseholders several ways by which they can acquire collective management rights over the entirety of their small estate or housing development. The most common of these is leaseholders' right to pay to extend their lease or buy the freehold (known as *leasehold enfranchisement*) (Gibbons and Wilson, 2010; Sykes, 2012; Law Commission, 2020, p. 18). Alternatively, they can exercise their *right to manage* - that is, to take over management duties from a freeholder without needing to purchase the freehold themselves (Gibbons and Wilson, 2010; Sykes, 2012; Law Commission, 2020, p. 18). More recently, buyers have become able to buy their home under commonhold tenure[30]. Being enshrined in the Commonhold and Leasehold Reform Act 2002, this option provides owners with an alternative to leasehold altogether, by owning under a single contractual system, both the freehold to their individual flat and a share of the company that manages the shared areas (sometimes employing a managing agent) (Law Commission, 2020, p. 13; Wilson and Barton, 2021a). This means commonhold grants commonhold owners

[29] The situation is different in Scotland where few leaseholds exist and the relationship between homeowners and property managers is governed by an act of the devolved parliament (Scotland, 2012).
[30] Also known as *strata title* in Australia and *condominiums* in the USA.

several advantages over leaseholders. These include perpetual entitlement to the property freehold, no ground rent to pay and - crucially for my thesis - the right to collectively co-manage and adjust all aspects of the development by means of a tenure system that is explicitly designed to align the interests of multiple users (Law Commission, 2020, p. 13; Wilson and Barton, 2021a).

Like assured tenancies, however, uptake of commonhold tenure has been negligible. This is because developers will naturally prefer to receive a perpetual income as well as a capital receipt and have been free to do so because of a combination of professional inertia, insufficient government incentives and a lack of consumer awareness (Law Commission, 2020, p. 14). Nevertheless, new legislation to reform leasehold rules - following widespread exploitation by freeholders, landowners and developers - has omitted commonhold tenure altogether (*Leasehold Reform (Ground Rent) Act 2022: Chapter 1*, 2022). This has happened despite being part of the original draft legislation, because the commonhold model and the associated assumptions around collective freehold, was perceived by legislators as being too complex to become mainstream (Wilson and Barton, 2021a; Cromarty, 2022, p. 39). Thus, whilst commonhold, freeholder enfranchisement and the right to manage mean owners of dwellings within multiuser housing developments have the legal means to control, adjust and co-managing their own, shared environment, the literature shows little evidence of uptake or institutional support, either from government or industry.

4.1.3. Resident participation as an opportunity to take control

To make sense of this apparent inertia and the perception that collective entitlement models are too complex, it is helpful to consider commonhold tenure in the cultural and legal context of the UK. The legal literature in this regard shows that one reason that collective decision-making and co-management are problematic is that UK residential property law remains centred on individual ownership (Blandy, 2014, pp. 171–172). Further, Blandy *et*

al (2006, p. 2366) explain that this problem is compounded by the cultural normalisation of owner occupied tenure, to the extent that only a small minority of people will have had the sorts of collective housing experiences they need to enact the shared bundle of rights that can flow from more novel forms of housing. Crawford and McKee (2018, p. 183) attribute this to the socially structured nature of housing preferences and aspirations in the UK, which mean that unfamiliar tenure arrangements will be "unthinkable" for many people. Furthermore, a lack of experience with other tenures means that only a small share of the UK population will be prepared for the extent of voluntary work or service charges associated with managing and maintaining shared amenities (Ostrom, 2015; Schmid *et al.*, 2019, pp. 36–38).

Given such a cultural aversion to alternative tenure arrangements in the UK, it may be the case that developers are less inclined to offer co-management during promotion, lest it should be so off-putting to some buyers as to negatively affect their sales. This is something that is relevant to my research question around the attractiveness to developers of characteristics that make housing more adjustable over the longer-term (Research Question 2). However, the literature does not elaborate on this point, other than to show that a leaseholders' right to co-manage a scheme may be lost even before they buy their new home. This is because the default position for most developers is to pass management responsibilities to a managing agent before residents have had a chance to move into their home and establish the sorts of relationships with their neighbours that are needed for them to take collective responsibility for their development or estate (Blandy, Dixon and Dupuis, 2006, p. 2381). Once lost, however, these powers can only be reclaimed through leaseholder enfranchisement or the right to manage (see above), but require *all* of the leaseholders in a development to establish the level of cohesion and collective confidence that is necessary to claim this right (Blandy, Dixon and Dupuis, 2006, p. 2379).

Instead, one way of building such cohesion is for future residents to intervene *before* a developer has sold the freehold or passed on management responsibilities to a third party. Cohousing - though not a tenure - is one template for doing this. It is described as a way of giving would-be users an opportunity to work together *during* the design process to co-design and co-produce housing outcomes that are tailored to their specific values or demographic interests (Lietaert, 2010, pp. 577–578; Levitt and McCafferty, 2018, p. 301; Community led homes, 2020). As such, cohousing provides a way of giving potential residents collective control over the design, the development, decision-making during use and the management of the shared housing environment (Tummers, 2016, p. 2035).

Co-design - as an opportunity for future residents to assume a legal right to make collective decisions early in the development process - is known to have several advantages, aside from allowing residents to secure their right to own and manage the commonhold or freehold before the developer has passed this on. The legal view is that such a process can make a scheme more adjustable because it enables participants (rather than a developer) to shape the "bundle of rights" that they hope to enjoy and control, including the rights of possession, control and exclusion[31] (Blandy, Dixon and Dupuis, 2006, p. 2371). Meanwhile, the management view is that early collaboration will make participants more motivated to take on responsibilities that serve the resident community as a whole, because they grow to realise that the rewards for their involvement accrue directly to them rather than an arm's length freeholder (Ostrom, 2015). Thus, early engagement is a way of avoiding the familiar problem in newer housing that so many individual dwellings become privately owned from the outset or over time, that it becomes hard or impossible for the community to

[31] For illustration, some rights give way to others. e.g. by renting out their home, an owner surrenders certain rights. English property law includes eleven 'incidents' of full ownership: to possess; to use; to manage; to take income; to take capital; to security; the power to sell, give or bequeath; the absence of term; the duty to prevent harm; the liability to execution; and the residuary character of ownership (quoting Honoré, 1987, pp. 168–169; in Blandy, Dixon and Dupuis, 2006, p. 2371).

regain collective control over their common pool resources (Lehavi, 2008, p. 139).

Although the emphasis of cohousing appears to be on social rather than tenurial opportunities - as will be discussed further in Section 4.3 - the real estate literature does give an example of early user involvement leading to tenure innovation. Chatterton (2013, pp. 1662–4) describes this in a rare example at *LILAC* - Low Impact Living Affordable Community, a 2013 cohousing scheme in Leeds. Here, a *mutual home ownership society* (MHOS) guarantees secure rented tenure for all, whilst allowing residents the option to acquire different levels of equity in the freehold company by making monthly, income-adjusted payments into a collective mortgage. An MHOS is an example of an *ownership housing co-operative* where people acquire the right to co-manage by effectively becoming their own landlord (Heath *et al.*, 2017, p. 12).

The primary objective of this tenure initiative was not, however, user control or adjustability *per se* - although this appears to have been an outcome - but to provide a bespoke safety net for financially distressed members to pause their monthly payments into a collective mortgage and revert to a rental tenancy (or even sell some equity), in the event that their means or income were to change (Chatterton, 2013, p. 1664). However, Scanlon and Arrigoitia (2015, pp. 119–120) find that such tenure arrangements typically create an asset lock that constrains capital gains in perpetuity. This has the effect of favouring those who have already had a lifetime of accumulating housing wealth, whilst making it harder for people to accumulate the equity they would need to adjust their housing by moving to a home outside of the scheme (Scanlon and Arrigoitia, 2015, pp. 119–120). Nevertheless, MHOS is the only example that I have found of an equity arrangement that can go down as well as up and therefore achieves something that is missing amongst the innovative, financially-backed tenure arrangements that I discussed in Section 2.1. It is therefore worth noting that unlike these market-based innovations, MHOS occurs at the scale of a single

development (Scanlon and Arrigoitia, 2015, pp. 119–120), thus forming an internal market for pooled finance.

Another example is *La Borda* - a housing cooperative in Barcelona[32] - which, like *LILAC*, is able to accommodate user involvement because the landowner was prepared to make concessions that helped to de-risk the co-design process. This sort of assistance is one way that user-led developer models are able to offset their weaker commercial position relative to speculative developers who can borrow more at a lower rate of interest (Scanlon and Arrigoitia, 2015, pp. 119–120). LILAC benefited from a landowner who was prepared to defer half of the land payment until the scheme was mortgageable (Chatterton, 2013, p. 1658). At La Borda, on the other hand, the municipal landowner has retained title on the land by granting a long lease that has helped to unlock a specialist affordability model (the Andel model) that grants its members a right to use their home and the shared setting that is neither rented or owned (Cabré and Andrés, 2018, pp. 421–423). As a radical, part-philanthropic, non-market solution, however, it is acknowledged that the La Borda model is unlikely to be scalable (Cabré and Andrés, 2018, p. 428) and the same, it may be inferred, will be true of LILAC. Thus, I include these as examples of the tenure innovation that is possible with early user involvement, rather than as precedents that are likely to be simultaneously useful for adjustability and attractive to developers, as per my research questions.

Notwithstanding these examples of early involvement leading to tenure innovation- and despite the various benefits that I have identified, including the chance to wrest control and freehold from a developer - only nineteen cohousing schemes have been completed in the UK to date (Jarvis *et al.*, 2016, p. 6; UK Cohousing Network, 2021). This suggests that the cohousing model is not seeking to meet latent demand for alternative or more adjustable tenure solutions (e.g. commonhold tenure), perhaps because the priority is to attract

[32] See also http://www.laborda.coop/en

people for whom sharing represents a way to achieve social and affordability goals (Jarvis, 2011, pp. 560 & 564; Larsen, 2019). Another reason may be that developers are simply not interested in involving their future users. This is because co-design gives resident groups the right to adjust not only the tenure but also the design, and in ways that are so idiosyncratic as to be prohibitively risky to build (Scanlon and Arrigoitia, 2015, pp. 108–114).The risk for developers of pursuing a cohousing model comes from the likelihood that some or all of the participants will fall away during the co-design process, either because they feel unable to finance the collateral requirements, or because they are unable to finance budgetary changes and the risk of overspend (Hamiduddin and Gallent, 2016, pp. 379–380). This means that for a developer, the capital costs are increased by the risk of having to sell bespoke homes and a novel social model on the open market (Scanlon and Arrigoitia, 2015, pp. 113 & 120). On this basis, it appears that whilst co-design might give users a rare opportunity to shape their own development, it is in fact too risky for developers to build.For this reason, cohousing is unlikely to overcome more commercial competitors at a scale that could change consumer attitudes to more adjustable tenure arrangements such as commonhold.

In summary, although people at the fringes of the owner occupied sector have the option to adjust their housing by moving into the security of assured shorthold tenure, or to adjust their shared environment by buying a home with commonhold tenure, neither option has disrupted the volume housebuilder monopoly that limits people's tenure choices to either insecure rented tenure or disempowering leasehold. The real estate literature attributes the resilience of this status quo to systemic power imbalances that favour the commercial interests of landlords and developers. Accepting a cultural and practical preference towards ownership in the UK, I have identified literature that shows if users are to acquire commonhold entitlement before this right is sold to a third party freeholder, they need to become involved *before* the developer has completed the build. Cohousing offers a template for doing this but by making

co-design a central part, has created an intolerable risk for developers. Whilst the literature shows ways to offset these risks - for example, with the support of benevolent landowners - the evidence is that such models are unlikely to scale and therefore will not disrupt the UK's housing market norms, leaving the prospect of more adjustable tenures out of reach for most people.

4.2. **Dwellings:** from a real estate perspective

In this section I explain how dwelling *design* - the second axis - is shaped by *marketing, construction* and *financial* risk. To explain this, I will first outline the importance of intermediaries or property agents in deciding what dwelling types get built. Thereafter, I will show ways that the mix and types of dwellings can become more adjustable by means of a layered approach to construction. The literature shows that this can help to mitigate risks as well as improving choice, but relies on better post-occupancy feedback loops between industry and practice.

An important obstacle to adjustable housing is that the industry appears, from the real estate literature, to be reliant on property agents. These intermediaries need to know which characteristics make a dwelling more adjustable, before they can convince developers, designers and buyers that they are attributes worth paying for (Pinder, Iii and Saker, 2013, p. 451). This is compounded by the problem that many characteristics designed to enhance adjustability are not only subtle but also hidden, being redundant or buried elements that anticipate future change, such as oversized structure, additional services, enlarged risers and hidden lintels above knock-out panels buried in the walls (Pinder, Iii and Saker, 2013, p. 448). Yet, as shown in Section 3.2, architects do not make this easy for sales intermediaries (estate agents) because there is little by way of architectural guidance to explain the value of such enhancements. Furthermore, even were property agents to recognise adjustable housing design features,

they would still struggle to advise their clients on the social value of adjustable housing design over the longer-term (Pinder, Iii and Saker, 2013, p. 453; Samuel, 2020b; Urbed, 2021). This is because the costs and benefits will tend to occur at different points in time and accrue to different stakeholders (Read, MacDonald and He, 2018).

Another problem is that to users the importance of many adjustable design features will only become apparent *after* a home is sold and occupied[33] (Scanlon, White and & Blanc, 2018, p. 35). For example, some architectural guidance and research suggests that people should buy a house with a spare room as insurance against later care-giving or care-receiving needs (CABE, 2009, p. 4; Roberts-Hughes, 2011). Yet, in practice, very few ageing parents move in with their children and very few middle-aged children move in with their parents (Bell and Rutherford, 2012, p. 560). Thus, more post-occupancy evidence is needed to make the case for adaptations for older age living (Mackintosh, 2020). Another example is that some architects believe people should buy a bigger dwelling at the outset, on the basis this could save them money over the longer-term (Schneider and Till, 2005, 2007, p. 43). Yet, in practice, buyers in fact behave much as economists expect, by forming their housing choices around *short*-term budgetary constraints (Meen and Whitehead, 2020b, pp. 26–27). Thus, without evidence of longer-term value, both buyers and developers appear unable or unwilling to pay a premium for an option of future-proofing against a scenario that might never happen (Carmichael and Taheriattar, 2018, p. 481).

It is therefore unsurprising that residential real estate agents defer to the number of bedrooms when advising developers or selling property. This proxy for value and future-proofing appears to be not only more comprehensible for

[33] For example, Scanlon et al (2018, p. 35) highlight the limitations of floor-to-ceiling as affects the adjustability of furniture layouts and reduces storage options, leading people to move belongings to a family member's home and others to feel a greater sense of impermanence and the anticipation of a house move should their storage or family needs change.

non-architects but is widely associated with subjective well-being for many UK homeowners. This is demonstrated by hedonic models which show that having more bedrooms than their relative peers is more important to homebuyers than having more space overall, whether or not the extra room brings extra utility at the point of buying (Foye, 2017, pp. 431 & 442). Thus, bedrooms are the more familiar and default measure of satisfaction than adjustable design features for UK home buyers, even if some architects believe a more sophisticated market would base their housing choices on the greater adjustability that comes with more overall floor area in a private dwelling (Schneider and Till, 2007, pp. 163–164; Park, 2017, pp. 72–73).

To improve this situation, Pinder *et al* (2013, p. 453) recommend greater use of post-occupancy evaluations with a consistent methodology that is directed towards adjustability. The 2020-21 pandemic showed that such evaluations need to account for adjustability by specifically addressing those groups who proved most vulnerable to the economic and employment shocks caused by the Covid-19 lockdowns. These are specifically households with younger children at home who have also been most affected by pay deterioration in the aftermath of the global financial crisis (Gustafsson and McCurdy, 2020, p. 19). This is needed because new evidence has changed our understanding of 21st Century housing needs in the UK. Other new insights have included lived experiences of house shares (Blanc and Scanlon, 2022), first hand evaluations of life in high-density housing (Scanlon, White and & Blanc, 2018) and evidence of the effects of disruption to daily routines under lockdown (Preece *et al.*, 2021).

It is not only the need to make buyers and agents more aware of the value and characteristics of an adjustable dwelling, but decision-making stakeholders too. In this case, however, the problem is that these stakeholders' objectives will not normally align at the same point in time (Carmichael and Taheriattar, 2018, p. 481) because, as Pinder (2013) explains, developers or designers, for example cannot make firm estimations of value over the longer-term (Pinder, Iii and

Saker, 2013, pp. 450–453). One solution, as recommended by Kendall (2021, pp. 11–12), is to use the *supports and infill* approach to construction (as introduced in Section 3.2) to manage developers' risk. This approach allows the base building to be delivered first, whilst deferring decisions around the mix of dwelling sizes until much later in the construction process, when the market requirements are likely to be much clearer (Kendall, 2021, pp. 11–12). For developers, the benefit of such an approach is also short-term, because it allows the construction of the base building to begin before fit-out design has begun, thus, in theory, shortening the construction programme (Kendall, 2021, p. 11).

More importantly, however, a layered approach has the potential to substantially de-risk a project that will otherwise be hostage to regulatory and market conditions that can and do change in the time it takes between fixing the housing mix at planning and selling the finished homes on the open market (Kendall, 2021, pp. 11–12 & 19). This is strategically valuable in the UK, where land prices are agreed first and design parameters fixed later (Crosby, Devaney and Wyatt, 2020, p. 190). More than this, it represents a way for innovative developers to reduce their commercial exposure relative to volume house builders. This is not only because bigger players can afford to pay more in free-market land sales (Scanlon and Arrigoitia, 2015) but because they have the scale to speculatively target 'average' buyers who are easy to match with their standard dwelling offer, whereas smaller developers have to work harder (and pay more) to attract buyers with more specific preferences or aspirations (Roth, 2015, pp. 47–49). With innovative developers chasing a smaller, more cautious and specific segment of the market, the costs of developing, promoting and consulting will be higher than many marginal buyers can afford (Scanlon and Arrigoitia, 2015; Sharam *et al.*, 2018, p. 59).

Aside from helping to manage developer risk, this *supports and infill* approach also has the potential to improve consumer satisfaction. One way it could do this is by offering users the opportunity to customise the size and therefore

price point of their future home whilst construction is ongoing, rather than deferring to marketing professionals who can only advise on the housing mix on the basis of broad classifications of user cohorts, as gleaned from focus groups (Kendall, 2021, pp. 18–20). This has the potential to close the "housing aspirations gap" that exists between what people want and what they can objectively expect to buy, by making new dwelling design more responsive to changing cultural attitudes to space, boundaries, pluralism and private ownership (Blandy, 2014, p. 163; Crawford and McKee, 2018, pp. 193–194). Alongside, the opportunity to customise a home can increase pre-buy buyer attachment (Scanlon and Arrigoitia, 2015, pp. 112–114 & 118–119), thereby lowering the risk that buyers could decide to withdraw[34] (Wilkinson, Sayce and Christensen, 2015, p. 35).

Instead of changing the construction system, Fischer and Guy (2009, p. 2592) note that there are opportunities to change the procurement process by assisting architects or other demand-side actors to reinvent themselves as "interpretive intermediaries" or enablers, so that their expertise move beyond the traditional confines of the profession. For example, in European cohousing projects, it is more normal for such intermediaries to act as informal leaders of the development process and typically, these have been an architect or a technically knowledgeable member of the group (Hamiduddin and Gallent, 2016, p. 376). Scanlon and Fernandez Arrigiotia (2015, p. 120) highlight the role that intermediaries could play in by brokering direct partnering arrangements between innovative developers (including housing associations) and local authorities. Further, with the benefit of local engagement and knowledge, Sayce *et al (2017, p. 10)* argue that such partnerships could improve the match between new supply and local demographic needs, whilst reducing the

[34] The price that developers attach to the risk that pre-buyers could walk away is especially high where pre-sales are used to provide security on a development loan, and explains why many developers prefer more standard, speculative designs that they can market more widely, (Wilkinson, Sayce and Christensen, 2015, p. 35). The security of small pre-sale deposits is especially important in situations where a developer or investment partner carries nearly all of the risk and is looking to reduce the cost of any construction loan (Glass, 2012, p. 358).

ambiguity that surrounds land value appraisal. More radically, Sharam and Bryant (2017, p. 214) argue that data-led, membership-based, architect-led matching models have the power to aggregate a picture of housing demand[35] so that more is known about the standard models that people actually want[36].

Alternatives like these that are responsive to changing market conditions are needed because simply building more of the same homes only serves to further isolate those people whose aspirations are not being heard by the mainstream housing market (Preece *et al.*, 2020, p. 101). Preece (2020, p. 101) argues that ultimately, a rigid and speculative UK housing offer will have the effect of diminishing people's housing expectations, once they come to accept what they are given. It also has the potential to allow a more diverse range of potential buyers to join late in the construction process. This is in contrast to cohousing where participants are expected to join at the briefing stages and therefore need enough security and stored up housing wealth to withstand an extended period of budgetary uncertainty (Scanlon and Arrigoitia, 2015). A precedent for the supports and infill approach is at Spreefeld, a co-designed apartment building in Berlin. In this scheme, the housing mix was independent of the external envelope and was therefore adjustable enough that residents could choose their preferred type and size of home throughout construction (LaFond and Tsvetkova, 2017, p. 38; Levitt and McCafferty, 2018, pp. 304–6).

In summary, the real estate literature highlights three ways that the industry could deliver more adjustable dwellings. The first is to market housing in more tangible terms of room numbers and the scenarios these could support, rather than promoting hidden, architectural future-proofing features that neither buyers or sellers will normally understand or be willing to pay for. The second is to separate the external building envelope from the internal housing mix

[35] Such a mediated approach to procurement has the benefit of giving certainty to developers, something which is known to lower the risks of innovation and cost of finance, leading to improved affordability (Sharam, Bryant and Thomas Alves, 2015, p. 216; Park, 2017, p. 80).
[36] A real world example of a matching market for semi-speculative cohousing that is often cited is Nightingale Housing in Australia (see, Doyon and Moore, 2019).

(supports and infill), because this lowers developers' risk and democratises engagement by inviting later user participation, potentially leading to changes that reflect changes in UK housing aspirations rather than being fixed around the size and mix that was foreseen at planning. Lastly, there is a need for post-occupancy evaluations with a consistent methodology that is directed towards adjustability and capabilities. This is so that the important and influential role of the property agent might become a more active intermediary in evaluating the plurality of housing characteristics which *individuals* have reason to value - something that that Clapham and Foye (2019, p. 16) find to be missing in the UK's new build housing market.

4.3. **Infrastructure:** from a real estate perspective

In this section, I review the cohousing literature, with regards to the shared, semi-private infrastructure of a multi-dwelling housing environment. Much of this literature directly concerns real estate theory but comes from fields that are somewhat peripheral to the field of real estate, such as social geography, sociology, urban design theory and the political sciences. These views concern not only the property aspects of housing but also some wider issues around how and for whom multiuser residential real estate might be developed, operated and marketed, in a way that allows the residents themselves to have a say.

The literature reviewed in this section relates to concepts such as *social infrastructure* and *social capital.* These have become synonymous with wellbeing at the neighbourhood scale (e.g. Samuel, 2023, pp. 76–77 & 83–86). It should be noted, however, that whilst these concepts reflect a clearly vital part of housing design thinking, they are normally used with reference to streets, shops, parks and amenities that sit beyond the meso scale of the development or small estate that concerns this thesis. Further, terms such as social infrastructure and

social capital also refer to social objectives, whereas my thesis concerns ways that the design of housing tenure, dwellings and the shared environment might deliver resilience rather than a social experience, *per se.* It is for these reasons that I refer to *shared* (rather than *social*) infrastructure hereafter.

Such differences in intent are also evident in the literature itself. Examples reveal a division between those who see shared infrastructure as a social utopia and reaction to the UK market system, and those for whom the real opportunity is to involve mixed income households in addressing the UK's institutional, social, financial and urban problems. Therefore, shared infrastructure refers to the sorts of semi-private, semi-public environments that have come to characterise cohousing. These include guest rooms, shared gardens, workshops, circulation space or a common house with shared kitchen, dining or laundry amenities (Jarvis, 2011, pp. 560 & 564; Tummers, 2016, p. 2036; Larsen, 2019).

Turning first to the divergent views around the role of shared infrastructure as a social utopia, it must first be noted that many commentators recognise the importance of privacy in allowing people to live together but separately. For example, Hudson *et al* (2021) observe that privacy is important to cohousing residents because they value the ability to disengage from the community, but also having the capability to knock on a neighbour's door. Likewise, Sargisson (2012) makes the distinction that cohousing allows people to live more closely with their neighbours in 'pocket utopias', while preserving a high degree of individual privacy. These are achieved through key cohousing characteristics that include common facilities, resident-led management and an absence of hierarchy (Lietaert, 2010). Larsen (2019) recognises that this approach creates a relatively ordinary and familiar form of housing that "combines individual dwellings with substantial common facilities and activities aimed at everyday living". Thus, through degrees of privacy and sharing, cohousing may be said to create a shared infrastructure that addresses some of the 21st Century isolation

and loneliness problems identified in Chapter 1, by recreating neighbourly support systems of the past (Lietaert, 2010, p. 579; Heywood, 2016, p. 15).

Jarvis (2011, p. 560, 2015, p. 94) however, recognises that cohousing is also "a continuum of shared space and collective practice", where the clustering of smaller-than-average private residences around shared open spaces and common facilities can create opportunities for self-governance but also for social interaction. In fact, it is this latter, social and communal characteristic that Jarvis (2015, p. 94) argues can be used to distinguish cohousing from more privacy-based multiuser housing models such as the US condominium. Overall, in reviewing the cohousing literature, Tummers (2016, pp. 2036–7) concludes that this characteristic has been widely adopted to the extent that cohousing is now regarded as a social and environmental experience and an opportunity to challenge institutional norms of planning and housing regulation, rather than as a framework for addressing wider urban and environmental problems. So much may be inferred from Chatterton (2019, pp. 99–101), who describes the shared infrastructure as an environment for "gregarious and intentional communities" that want to "maximise interaction" and seek self-build, social justice or economic equality.

As a consequence of the prevalence of the latter view, commentators and exponents of cohousing have helped to ensure that the model is aimed at a particular "elitist minority" for whom much of the value is bound up in a broader critique of the dominant housing culture and capital systems (Tummers, 2016, p. 2037). Delgado finds that this leaves the model unable to scale, because an exclusive minority is so committed to the idea of a shared environment that the model can only produce more fixed versions of what has come before (Delgado, 2012, p. 441; Sargisson, 2012, p. 50). This leaves the cohousing movement reliant on enthusiasts whose interest comes not from a specific housing need, but from a popular disaffection with materialist culture and social alienation (Sargisson, 2012, pp. 33–45; Jarvis, 2015, p. 103).

These divergent views are manifest in disagreements around the value of co-designed housing versus the mainstream, developer-led alternative. Some real estate experts maintain that despite the accusations of exclusivity, cohousing is nevertheless 'the voice of the *demand* side' (Hill, 2017). Others, however, accept that such a communitarian and even utopian model is unlikely to constitute a public benefit (Delgado, 2012, p. 441; Sargisson, 2012, p. 51). Chiodelli (2015, p. 2577) for example, argues that the relative exclusivity and somewhat speculative nature of cohousing means such schemes are akin to gated communities and therefore cannot claim to be making a public contribution that is worthy of public land, subsidy, legislation or planning concessions. Likewise, (Hamiduddin and Gallent, 2016, p. 381) identify a risk that cohousing communities - being self-selected - represent an exclusionary path to housing delivery. Furthermore, Hodson and Marvin (2010, p. 311) claim that the environmental motivation behind many cohousing schemes is serving to produce "ecological enclaves for premium users", whilst ignoring wider economic and distributional issues such as those raised in Chapter 1.

To be attractive, such enclaves need to ensure that the bundle of ideological motivations is so strong as to outweigh uncertainties around cost, tenure and relationships (Scanlon and Arrigoitia, 2015, p. p120). In this regard, relevant motivators can include "togetherness" (Jarvis, 2019), inclusivity (LaFond and Tsvetkova, 2017), degrowth (Lietaert, 2010), identity (Devlin, Douglas and Reynolds, 2015), income equality or low-carbon living (Chatterton, 2013). Thus, UK cohousing has found itself characterised as a radical, communitarian phenomenon whose purpose is to satisfy popular disaffections with political or materialist culture (Chatterton, 2013, pp. 1662–1664; Jarvis, 2015, pp. 102–3; Scanlon and Arrigoitia, 2015, pp. 119–120). Cutting through this picture of demand, however, is an idea that what is needed in the 21st Century is not an exception to housing market norms for the benefit of a gregarious or exclusive minority, but a way for people at the edges of the owner occupied market to transact in ways that might force developers to start responding to the changing

nature of housing aspiration in the UK (Arundel and Doling, 2017, p. 650; Köppe, 2017, p. 178; Crawford and McKee, 2018, p. 194). These views hold that value lies in allowing new forms of shared infrastructure to be shaped by a group who are not shut out of homeownership altogether - and therefore do not need or want financial help or subsidy - yet feel compelled to buy a home because their sense of fulfilment and relative status depends on it (Standing, 2014, pp. 10–11; Crawford and McKee, 2018, p. 193; Foye, Clapham and Gabrieli, 2018; Preece *et al.*, 2020, p. 101).

Crawford and McKee (2018, p. 193) argue that such determination is a consequence of having come to terms with the fact that they will need to adjust their expectations if they are to emulate their home-owning parents, only with less economic capital with which to do so. These are groups with the cultural capital and buying power to drive change in the housing market, who are therefore more likely to be salaried, middle-class or professional people who may be receptive to novel sharing arrangements so long as these are marketed as a way of accessing the housing market with the level of control and dignity to which they aspire (Crawford and McKee, 2018, p. 193). Sociologist Pierre Bourdieu (1986, pp. 243–7), describes this “cultural capital” as a combination of education and self-improvement that can only be transferred or objectified when the holders have time to invest which is free from economic necessity. This helps to characterise the market for more adjustable alternatives to mainstream housing offer as being quite different from those who need affordable or discounted solutions - as identified by UK housing policy - but also from those “gregarious” or “ideologically-motivated” minorities that have become synonymous with the few cohousing schemes that have actually been realised.

In summary, Section 4.3 has shown that the shared infrastructure or semi-private housing environment is the arena in which changing attitudes to housing are likely to be expressed. Yet, the literature shows that the opportunity

to participate in the design of the shared experience of new housing has been limited to those with radical or ideological reasons for doing so. Instead, I have argued that latent demand for new ways of sharing infrastructure in multiuser housing could exist amongst a less exclusive - less exceptional - segment of housing market demand. This includes people with more cultural capital than economic capital, with a combination of relative buying power, determination to own a home, and a willingness to accept relatively novel shared housing environments. Thus, the literature suggests that such buyers may be equipped to influence the characteristics of new housing supply, so long as the systems of design and procurement were arranged in ways that gave them more effective demand in the UK housing market.

Conclusions on the real estate literature

In conclusion, the real estate literature that I have reviewed in Chapter 4, has shown that more empowering tenure options - such as commonhold - are available in the UK. In Section 4.1 however, I showed that such opportunities are unusual because developers typically pass the freehold and management rights to third parties upon completion and therefore before end users - the future occupiers - have had a say in how they wish to own and manage their housing environment. In Section 4.2, I showed that when end users do get involved earlier in the development process - in a cohousing project, for example - they create intolerable costs and risks for a developer. Further, in Section 4.3, I showed that such involvement is often so ideologically-motivated, exceptional and exclusive, that it is unlikely to affect new housing supply at the scale that is needed. Instead, there are several ways to make new housing supply more responsive to changing housing aspirations. These include, more engagement between designers and property agents, deferred land payments, a layered approach to construction, post-occupancy evaluation using standardised criteria for evaluating adjustability, and engagement with future user groups. Of these, the greatest power to affect change lies in those with some buying power, but

whose cultural capital outweighs their economic capital. As Tummers (2016, p. 2037) concludes, a new framework is needed that not only accommodates the needs of mixed income households rather than elitist minorities, but turns housing into a laboratory for addressing the UK's institutional, social and urban problems.

5. **Conclusions:** from the three literatures of adjustable housing

The three literatures of adjustable housing that I have reviewed in Part I, confirm that the UK's housing problems are a consequence of what Whitehead (2012, p. 123) describes as "a failure of theory as well as practice". In Chapter 5, I will explain why this is the case by showing that no single field has produced a complete theory to explain what makes an adjustable tenure, dwelling or shared infrastructure. Thus, in this short chapter, I briefly summarise the theories of each of the three disciplines, as relates to each of my three dimensions of adjustable housing. This is to expose the gaps in the literature of the separate fields, the contradictions between fields, and the power imbalances that arise because architects and consumers normally arrive too late in the development process to influence the tenure, management or adjustability of the design. I then summarise what my conclusions mean for my three research questions and the fieldwork that follows.

5.1. **Tenure:** a brief conclusion

Beginning with *tenure*, it is clear that from the real estate perspective that ways of collectively owning and managing multiuser housing are not only desirable from a stability and maintenance point of view, but are already within reach. For example, commonhold tenure has existed in UK law for a decade. Yet, architects and developers continue to design denser housing on the default assumption that it will be managed by a third party, rather than by users themselves. Likewise, economists have promoted financial innovations such as shared ownership that specifically involve an arm's length, third party investor, as a way of lowering the cost and risk of entering owner occupation. The outcome of

these practices is that they create incentives to design non-private space in new housing developments in ways that minimise service costs to the third party, rather than seeking to maximise social interactions and the right to manage a scheme over time. The outcome is that the power to make continuous adjustments will typically be passed to a third party freeholder, whose managing agent will assume control before the users have even bought their home or had a chance to express their preferences. This is unfortunate because the real estate literature notes that for commonhold tenure to take root in the UK residential property market, what is needed is a combination of industry incentives and greater consumer awareness around the sorts of opportunities that few have the chance to experience.

5.2. **Dwelling:** a brief conclusion

Turning to the individual *dwelling*, the economic literature shows that economists promote financial innovations in policy and the mortgage market that are designed to help people to enter homeownership in the first place. These interventions are directed towards macroeconomic and political stability, rather than for household stability through the power to make adjustments over time. This is despite the fact that some economists see macroeconomic benefits for the UK in having a more adjustable housing stock. Meanwhile architects promote small enhancements to dwelling sizes, layouts, structure and services but seek to regulate these through space standards, rather than by justifying their value in economic terms. Thus, innovations in adjustable dwelling design are easily overlooked by economists and policymakers, for whom a dwelling that is likely to become spatially unsustainable over time, can nevertheless be described as being a subjectively satisfactory housing choice from a utilitarian perspective. This is even if the chooser had no alternative to choose from at the time. To overcome these problems, the real estate literature shows that intermediaries are needed to convince developers that it is worth

paying for the sorts of attributes that architects recommend. This requires collaborations between architects and property agents to build a mutual understanding of what works and what sells. This may lead to a greater emphasis in design briefs on tangible spaces like box rooms that both buyers and agents can see and understand, rather than obscure, hidden, indeterminate or redundant features that are favoured by architectural theorists.

5.3. **Infrastructure:** a brief conclusion

Turning lastly to the shared *infrastructure* of the multiuser housing environment, I have shown that architects continue to stereotype the experience as being either ostensibly private or highly sociable, but with little consideration for the value of the spaces or lived experiences in between. This is because intermediate spaces such as stairs and landings are seen only as defensible infrastructure, rather than as an environment for spillover and collective control that people might willingly pay for. The exception to this rule is described as *cohousing* - a radical and resident-led alternative to conventional housing procurement. Architects see this model as a way of making intermediate spaces into an infrastructure that users can control and adjust through collective action. For economists and political scientists, such a multiuser environment is seen as having a role in enabling people to make strategic and collective adjustments over time. Yet, from the real estate perspective, allowing users to participate in design decisions creates intolerable costs and risks for a developer.

Conclusion

In conclusion, this literature review has confirmed that housing practice and housing evidence are siloed into disparate fields (Samuel, 2023, chap. 4). It has also shown that the field of economics has been allowed to dominate housing theory and policy, on the basis that only fiscal tools can solve the UK's housing problems (Whitehead, 2012). The gaps between theories from these different fields provide an essential context to my research questions. First, with regards to the characteristics that could provide owners with longer-term adjustability (Research Question 1), the literature review has shown that a tenure solution is needed to help people at the edges of the owner occupied market to access not only a stable home surrounded by defensible spaces, but a home that can be adjusted in ways that they can see and understand. This implies a shared environment that users can control, adjust and occupy, and a design and procurement process in which their cultural capital and willingness to compromise could have some influence. Secondly, with regards to the changes that might be needed to make adjustable housing more attractive to UK developers (Research Question 2), the literature exposes a risk to over-involving end users too early in the process, as well as a benefit to involving new types of intermediaries during design and sale. Lastly, with regards to the ways that interdisciplinary knowledge can be used to describe and implement adjustable housing (Research Question 3), the three literatures highlight an urgent need for post-occupancy evidence, based on a consistent methodology (Pinder, Iii and Saker, 2013, p. 453; Samuel, 2018). This could be a capabilities-based methodology for evaluating the temporal nature of housing outcomes in a world where people's incomes and experiences are manifestly different and changeable (Clapham and Foye, 2019, pp. 13–16).

PART II

STAKEHOLDERS' ATTITUDES TO ADJUSTABLE HOUSING:

Findings from the post-occupancy evaluation

6. Research design and methods

By choosing to work within the architecture tradition of post-occupancy evaluation, my research has crossovers with social science methods, yet retains a focus on the spatial dimension of building design. In this chapter, I describe my step-by-step process of research, so that my capabilities-led approach to the empirical work can be understood from its design through to the thematic analysis of the data. The first section *(Section 6.1 - Methodology: a capabilities approach)* starts by explaining my position as a practitioner, before justifying my use of grounded theory and the capabilities approach. The second section *(Section 6.2 - The case studies and their stakeholders)* explains my reasons for choosing the case study models, before going on to identify the relevant stakeholders therein. The third section *(Section 6.3 - Survey and Interview Design)* explains how the surveys and interviews were developed and deployed in the field. The fourth section *(Section 6.4 - Analysing the data)* describes my iterative process of thematic analysis and how the codes and headings were developed into themes and sub-themes.

6.1. Methodology: A capabilities approach

The methodology for this research is an inductive, interpretivist, post-occupancy evaluation of housing outcomes, constructed as a qualitative critique of utilitarianism using the capabilities approach (Nussbaum, 2003, pp. 41–42; Sen, 2010, p. 233; Robeyns, 2019, p. 252). To achieve this, I evaluate some completed housing projects from a multi-stakeholder perspective, asking if and how the different models have expanded people's freedoms and wellbeing over the longer-term. I describe the capabilities approach below, before explaining my research methods. First, however, it is important to situate myself in the research from the standpoint of a practising housing architect, to explain why

the risk of professional bias justifies my decision to follow a grounded process for data collection and thereafter, for theory development.

6.1.1. My situated nature of authorship

This thesis is an example of practice based research. As such, it builds on a growing body of pragmatic research on aspects of architectural practice by architectural practitioners (Samuel, 2018). It also sits amongst a small number of mid-career PhDs by established UK practitioners who have sought to reexamine the added value that architects can contribute through different approaches to design practice (e.g. Warwick, 2015; Pelsmakers, 2016; Horn, 2019; Taylor, 2022). Likewise, I have undertaken this research from the perspective of a practising architect. My vantage, however, is as a relative outsider, having an architect's understanding of housing design, but looking afresh - and as an observer - at the *synthesis* between architecture, consumer behaviour, economic outcomes and real estate systems. This approach is motivated by my own frustrations of providing architectural services in practice, during the years following the 2008 global financial crisis. Over this period, consumer trust has been tested by the housebuilding industry, not least with regards to exploitation of ground rent and service charges by third party freeholders (Wilson and Barton, 2021a).

My work in practice over the course of this period was consumed by the design and delivery of several major housing regeneration projects - all in southern England. Common to each was a design process that required small flats to be contorted or 'shoehorned' into an approved building envelope. This was necessary because the developer's first priority was, reasonably, to manage their risks and maximise profits in a competitive land market environment. In the process, however, the volume housebuilder model has tended to deliver flat plans that will, inevitably, be hard or impossible to adjust in the future. Behind such design briefs, the priority was not only developer profitability but the

central government agenda of providing more homes - or 'units' - for owner occupation (Department for Levelling Up, Housing and Communities, 2017). As practitioners, however, our endeavour to increase densities in line with this top-down agenda, came at the expense of the professional inclination to empower and delight. Indeed, the impression that the UK's affordability problems can *only* be solved through the expansion of new housing supply, creates the illusion for practitioners that a 'tight-fit, functionalist' approach to housing design might eventually and in aggregate, create some tangible social value (Till and Schneider, 2005, p. 287). In any case, the experience of practice shows a lack of concern for the consequences of such small, inflexible or single-aspect apartments, where welfare problems for occupiers can too easily be concealed behind the façade of new urbanism. The suitability of the housing outcome itself, however, was - and still is - seen as something that is almost beyond the control of the architect, being an inevitability that can only be influenced by means of minimum space standards guidance, to which planners and many architects are committed because these standards represent a bulwark against commercial pressures to go smaller still (e.g. Park, 2017).

It is from this foundation in design practice that my research sets out to develop a framework for defining adjustable housing as something that can be user-focussed, rather than simply 'good', from the perspective of planners, developers or architects (Lawson *et al.*, 2022, p. 25). Crucially, however, the work combines real world insight from practice with knowledge from multiple fields, to explain why the question of adjustability is so under-theorised and poorly understood. The purpose of this is to show practitioners and the wider industry that a transdisciplinary approach to design value (see, White *et al.*, 2020, pp. 14 & 18) could help to make housing more adjustable to the changing structure of housing demand in the 21st Century.

Areas of crossover between spatial and financial fields are beginning to attract interest from some housing researchers (e.g. Sharam and Bryant, 2017). My

research, being undertaken from the perspective of an architect, however, creates a risk that unconscious bias could skew the findings. For example, most architects would love to prove a relationship between 'good' design and its long-term economic benefits (Samuel, 2018, p. 94). This is because there is a natural inclination to generate theory using evidence and knowledge imported from outside the field of investigation, simply because it *fits* a preferred hypothesis (Glaser and Strauss, 1967, pp. 32–34 & 227). The origin of this risk of unconscious professional bias comes from cognitive tunnel thinking or the *Einstellung effect*, in which the siloed nature of practice and academia is reinforced - and even encouraged - during education and professional training (Epstein, 2019, chap. 8).

The risk of unconscious professional bias is arguably made smaller in this project because my primary focus is the residential property market and the development process, rather than the more architectural and therefore familiar territory of building design. As such, the subject is an area in which designers are relative outsiders, having neither expertise nor influence over the commercial and regulatory forces that dominate real estate development (e.g. Carmona, 2009; Imrie and Street, 2009). Indeed, I have reflected often throughout the project that architectural training is too limited by its lack of financial education (economics, real estate, etc). Where, for example, is there a degree offered in architecture, economics and real estate, to complement those other, multi-disciplinary degrees such as politics, philosophy and economics, or engineering, economics and management? Nevertheless, my vantage as an outsider looking in at a system can be helpful because researchers whose experience sits furthest from the central problem of the thesis can often have a greater chance of seeing solutions that others may have missed (Epstein, 2019, chap. 8).

6.1.2. A grounded process

To mitigate the problems of professional bias (described above), my research has followed a *grounded process*. Grounded theory allows substantive theories to be generated from the data, rather than being predetermined or biased through the lens of the researcher's own experience, before empirical work has even begun (Glaser and Strauss, 1967, pp. 32–34). I chose this approach because it provides a framework for an *inductive* (or, bottom-up) process. This, I hoped, would counter my inclination to prove what I believed was 'good' housing, with all the practitioner's bias and baggage that this entailed. My decision to use grounded theory came from a deliberate rejection of the alternative - a *deductive* (or, top-down) process. Had this been my course, I would have been inclined to *deduce* (or prove) the reasons why cohousing (rather than micro-housing) could make more efficient, long-term use of land and thereby, solve the UK's housing problems.

By overcoming my original inclination towards a deductive process, I was surprised to find that my findings ultimately *dis*proved my original - and professionally biased - assumptions about what 'good' housing ought to be. This outcome, however, was only possible because I accepted that in the very first instance only, my research process had to be initially deductive, insofar as I had to specify the themes or scope, before I could commence the data collection and analysis. In other words, grounded theory was not an excuse to avoid framing the research question, but rather, it came *after* an initial process of delimiting the analytical focus of the project around house moves and adjustability, so that a grounded process of thematic analysis could follow (Braun and Clarke, 2006, p. 249). This ensured an initial focus on the specific, economic nature of the UK's housing problems - as found in the architectural, economic and real estate literature - but without inadvertently importing unexamined assumptions from practice, industry or my own architectural education.

In practice, my choice of an inductive, grounded approach has involved a snowballing process of data collection and reflection. Thus, one round of surveys determined the questions and scope of the interviews that followed. Likewise, the emerging picture of the factors and opportunities that determine choice and change, opened new lines of inquiry in the literature. In this way, themes and sub-themes emerging from the interview data, informed the next round of interview questions, even where this meant widening the scope of the research. For example, the importance of micro-housing became more apparent over the course of the fieldwork, upon finding that the voices of price-constrained buyers were missing in my cohousing case study. This realisation, in turn, directed the interview discussions towards the question of whether people's confidence to participate in co-design was driven more by their prior experience of homeownership or by their existing housing wealth. Likewise, my iterative, grounded approach meant that the research questions could shift from what was, on reflection, a rather limited and prejudiced inquiry into the potential adjustability benefits of cohousing. Thus, what emerged was a broader but more fundamental inquiry into what adjustable housing actually is, and which parts of the development process help or hinder that outcome.

Such a broadening of the research questions, however, created a data management problem. This was due to the inevitable volume of information that comes from simultaneously defining a phenomenon (adjustability) whilst looking for evidence of its applications (or absence) in the case studies. To organise the findings, I used *thematic analysis* (described more fully in Section 6.4, below). Thematic analysis is a process which provides the researcher with a relatively flexible method for identifying and organising data into separate chunks, according to apparent themes (Braun and Clarke, 2006, pp. 78–79). Such flexibility is well suited to a grounded approach because it allows the research questions to *evolve* through a bottom-up, inductive process, during which the transcript data is systematically decomposed to reveal unexpected patterns (Braun and Clarke, 2006, pp. 84 & 97). This process produced the three

dimensions of adjustable housing and related chapter headings (i.e. adjustable tenure, dwellings and infrastructure), around which I have gathered the findings and literature. Indeed, over the course of the data collection and analysis, it is these headings that emerged as perhaps the most important contribution to knowledge

6.1.3. The capabilities approach

The capabilities approach is a rejection of means-orientated, price-based or utilitarian measures of satisfaction (Sen, 2010, p. 233) and relates instead to the idea of distributive justice (Robeyns, 2019, p. 252). First developed by Amartya Sen, it is a way of evaluating success in terms of the freedoms and opportunities that are created for people to plan, play, produce things, feel in control, interact with a community, show concern for others, feel emotional attachment or experience nature[37] (Nussbaum, 2003, pp. 41–42). These *doings* are often accompanied by ways of *being*, such as being well-nourished, healthy and having self-respect (Sen, 1995, p. 5; Nussbaum, 2003, pp. 41–42, 2011, p. x). Robeyns brings these together by describing people's capabilities as "their effective opportunities to undertake the actions and activities that they want to engage in, and be whom they want to be" (Robeyns, 2005, p. 95).

Housing research has only recently begun to use the capabilities approach and so far, mostly in either theoretical applications (Brown and King, 2005; Coates, Anand and Norris, 2013; Foye, 2020; Kimhur, 2020; Harris, 2021) or else in development economics at a neighbourhood scale (Oosterlaken, 2009; Biggeri and Ferrannini, 2014; Frediani, 2021; Alexiou, Hale and Zamenopoulos, 2022). One reason that its practical applications have been so limited is that a capabilities approach relies on knowledge and methods from multiple fields, whereas housing studies are typically fragmented and specialised (Kimhur,

[37] Adapted from Nussbaum's Central Human Capabilities that includes life, health and safety.

2020, p. 273). Nevertheless, there is an impetus to wrest the social and human dimensions of housing from welfare economists, whose perspective is increasingly seen as having become over-reliant on price-based, space-based, or utility-based measures of value, despite the implicit subjectivity of using these as a proxy for value (Kimhur, 2020, p. 257). This subjectivity can be exposed by considering whether an occupier's freedoms or opportunities are always improved by spending more money, having more space or increasing the usefulness of the dwelling (i.e. the utility theory of value) (Mazzucato, 2019, chaps 1–2). Initial work to date suggests that the capabilities approach could become a useful way of evaluating housing outcomes, because it is only interested in whether people have the opportunity or *freedom* to lead lives that they have reason to value (Clapham and Foye, 2019, pp. 16–25; Foye, 2020, pp. 9–10; Kimhur, 2020, pp. 271–272).

Literature concerning the capabilities approach includes happiness (or hedonic) studies, as well as tentative, conceptual attempts to advance an evaluative framework for measuring freedom in terms of design value or wellbeing. A point of departure in this literature is a review of international housing happiness research, by Coates *et al* (2013). Their study sets out to identify the basis for housing satisfaction, and how these criteria affect life satisfaction more generally. Of salient interest to my thesis is their finding that housing satisfaction flows from a sense of control, economic security and good social relations - as derived from certain spatial, locational, tenurial and environmental characteristics (Coates, Anand and Norris, 2013, pp. 189–191 & 193–4). Indeed, it is towards these three subjective satisfactions - *control, security* and *social relations* - that my fieldwork was ultimately directed.

Some of these characteristics have already been researched by economists, though without reference to the sorts of capabilities-led issues that could begin to inform architectural or real estate decisions. Bell and Rutherford (2012), for example, show that in the UK, cuts to the state provision of older age care have

increased the number of people choosing to receive care at home, with measurable effects on the housing market and wealth distribution. Thus, from a single, economic perspective, demand for care at home appears to be cost-led, because there are financial savings for both government and individuals (Bell and Rutherford, 2012, p. 561). From a capabilities perspective, however, such preferences in older age might also be explained by increasing demand for *control*. For example, older age groups have been shown to attach value to rented tenure, because they are happy to let somebody else take care of repairs and would even consider selling their home to access housing that enhances their sense of familiarity, community, safety, self-esteem and dignity - in other words, their capabilities (Coates, Anand and Norris, 2013, pp. 187–198). These are examples of what Clapham *et al* (2018) describe as "subjective well-being", and are discrete characteristics of value that must be stripped away from the other positional, financial, acquisitive or status-based reasons that make people want to move house (Foye, 2020).

This illustration from only a small sample of the literature, suggest that the capabilities approach has the potential to disentangle freedoms, well-being and objective satisfactions, from more socially structured measures of aspiration that flow from subjective evaluations such as cultural norms and normative, price- or unit-based measures of relative adequacy[38] (e.g. overcrowding) (Bramley *et al.*, 2010, p. 25; Crawford and McKee, 2018, p. 183; Clapham and Foye, 2019, p. 8; Foye, 2020, pp. 5 & 13; Preece *et al.*, 2020, p. 90). It is important to make such distinctions because it is the latter, more utilitarian criteria that are more often used for evaluating subjective satisfaction, because they are

[38] For example, a utilitarian view is that a child labourer may be *subjectively* 'satisfied' because their income and experience has made them come to terms with the fact that their situation is both normal and inescapable (Clapham, Foye and Christian, 2018, p. 263). Conversely, a utilitarian view of overcrowding - being culturally subjective - might conclude that a child should not share a bedroom with a grandparent (Clapham and Foye, 2019, p. 16), whereas an objective, capabilities-led evaluation would say there is no loss of freedom so long as the arrangement was reached voluntarily and alternatives were available (Sen, 1995, p. 5, 2010, pp. 231–8; Varoufakis, 2002, p. 465).

easier to measure, even though they rely on *relative* satisfactions and are blind to the variances in people's lived experiences (Harsanyi, 1977, p. 646; Brown and King, 2005, p. 73; Clapham, Foye and Christian, 2018, p. 263; Clapham and Foye, 2019, p. 16; Kimhur, 2020, p. 263). For example, a utilitarian evaluation of housing outcomes will typically overlook the plight of housing market *outsiders* because their housing choices will reflect their lack effective demand and therefore their satisfaction may only be subjectively so, because they have trimmed their aspirations to fit their affordability predicament, and have managed to keep up with their relative peers (Meen, 2013, p. 637, 2018, pp. 21–25; Arundel and Doling, 2017, p. 650; Köppe, 2017, p. 178; Crawford and McKee, 2018, p. 194). Further, those who evaluate housing or make design decisions can be fallible or paternalistic because their observations or designs are guided by incomplete, relativist or utilitarian measures of what is 'good' (e.g. income, opulence, sustainability and wealth) (Sen, 2010, pp. 226, 233 & 248; Foye, 2020, p. 10). Instead, the capabilities approach offers a provocative alternative to utilitarian assessments of value, as have continued to shape the central evaluative space of neoclassical economics and therefore of modern housing policy (Ryan-Collins, Lloyd and Macfarlane, 2017, p. 5; Kimhur, 2020, pp. 258 & 262).

Another reason that a capabilities approach offers a more objective methodological framework is that it recognises people as pragmatic actors who are not as individualistic as most utilitarian evaluative measures would normally assume. Indeed, some capabilities-led housing research has highlighted the importance of settings that allow people to add value by working *cooperatively* to acquire (or deliver) only enough of that which they objectively need (or that is sufficient) to support the users' collective right to do or be whatever is within their capabilities - so long as this does not diminish the dignity or opportunities available to others (King, 2008, pp. 133–5; Shields, 2012; Robeyns, 2019). Such aspects are important because sufficiency in housing - that is, the degree of privacy, intimacy and security that people need to flourish - is shaped not by

individuals, but through a *collective* understanding of what is necessary and justifiable[39] (King, 2008, pp. 133–5). Kimhur (Kimhur, 2020, pp. 272–3) shows that this concern for collective capabilities is also temporal, because it includes the environmental consequences for future generations of expanding people's freedoms and wellbeing.

Having established that the evaluation of housing outcomes in terms of control, security, social relations, dignity and self-esteem is both collective and messy, the literature is less clear on *how* a capabilities approach can be operationalised for the evaluation of housing outcomes. Kimhur (2020, pp. 272–3) emphasises that the capabilities approach is just that - an *approach* rather than a theory - and on that basis, defers the details of any method to future research. Thus, she goes only so far as to advise that the efficacy of a housing policy should be evaluated without reference to familiar metrics such as the number of new 'units' or bed spaces delivered and instead, concern itself with only those enhancements that are made to housing-related capabilities (Kimhur, 2020, pp. 272–3). Nevertheless, she does highlight the potential for participatory and deliberative design processes to inform future research, because they are seen as making participants feel empowered enough to express their preferences and value judgements more freely than would otherwise be possible in more top-down, developer-led models (Kimhur, 2020, pp. 272–3). In a similar way, Foye (2020) sees 'citizens juries' as a deliberative, bottom-up forum for consulting people on an acceptable home standard, because this has the potential to aggregate a picture of people's value judgements from the various housing experiences of the group. Foye (2020) cites Shelter's *Living Home*

[39] The questions of sufficiency and necessity were highlighted by the philosopher John Locke - a founder of the liberal market system. Locke warned that whilst property is a natural right from a utilitarian perspective, the often overlooked *Lockean proviso* means that the "unseen hand of the market" cannot be left unguided because, beyond a certain point at which, intervention is needed to ensure that the distribution of property is *sufficient* for everybody (Ryan-Collins, Lloyd and Macfarlane, 2017, p. 17). More recently, this proviso - and Sen's idea of capabilities - have informed *sufficientarian* views, as relate to the idea of distributive justice (Robeyns, 2019, p. 252).

Standard as an example, being an attempt to disentangle fact from values, using public consultation, to produce a publicly-defined housing standard that is described in terms of affordability, condition, space, stability and neighbourhood (Shelter, 2016).

Despite their appeal, however, there are clear limitations to operationalising these approaches. Foye (2020, pp. 11–13) recognises that even citizen juries are prone to produce 'wish lists', of which more space is likely to feature highly, and will - like any courtroom jury - be reliant on the advice of experts and their associated power to influence their preferences. Further, the categories of Shelter's *Living Home Standard* do not include Coates *et al's* (2013) description of subjective well-being - that is, the characteristics of control, security, social relations, self-esteem and dignity, mentioned earlier. These map onto some of the criteria identified by community groups, property developers, local authorities and housing associations in *The Quality of Life Framework* (Urbed, 2021) - a guidance document which highlights influence, permanence, interaction and neighbourliness as being key to well-being.

Yet, none of these attempts to separate freedoms from utilities, or to overcome either the 'wishlist problem' or the problem that citizen juries will be dealing with abstract housing questions. Furthermore, none of the models described above have engaged with the collective nature of well-being that underpins a capabilities-led evaluation of housing outcomes (King, 2008, pp. 133–5; Shields, 2012; Robeyns, 2019). Harris and McKee only narrows the interview sample to residents of privately rented housing, to produce similarly generic findings around space, upkeep and insecurity (Harris and McKee, 2021, pp. 32–33) In contrast, the best example of a capabilities-led post-occupancy evaluation of housing outcomes that I have found used focus groups and interviews at a resettlement programme in Salvador, Brazil (Frediani, 2021, pp. 79–83). By analysing residents' interactions with their dwellings and the wider housing environment, this revealed five underlying aspirations of values. These

comprised: (1) the freedom to individualise and expand the home; (2) to maintain social networks; (3) to participate in decision-making; (4) to afford the costs of living; and, (5) to have security of tenure with associated access to services and infrastructure (Frediani, 2021, pp. 79–83).

In summary, the capabilities approach offers a way of objectively evaluating outcomes, without the subjectivity of normative price- or transaction-based measures of value. To date, attempts to apply this approach to housing have been predominantly in the abstract, interviewing focus groups rather than a defined resident cohort in a specific case study. Thus, there is little research to demonstrate the usefulness of this approach in post-occupancy evaluations. Further, critical review of past research has concluded that the field of housing studies is still too fragmented to properly evaluate housing outcomes from a capabilities perspective (Kimhur, 2020, pp. 272–3). To progress this area of research, my research methods apply the capabilities approach to specific post-occupancy evaluations of case study projects, through interviews with residents and key stakeholders. I describe these research methods below.

6.1.4. Research methods

To understand which characteristics do or could improve adjustability - and how these could be made more attractive for UK developers - my project uses the literature from multiple fields and thereafter, conducts a post-occupancy evaluation (POE) of two, multi-dwelling housing models. This is to minimise the degree of abstraction that has characterised earlier, capabilities-led housing research (see above), by grounding the fieldwork in real life case studies. The POE method for each model comprised two distinct parts: (1) a round of resident surveys and (2) a series of interviews with both residents and multiple other key stakeholders. In this way, I generated mostly qualitative but also, to a lesser degree, quantitative data: qualitative in terms of the descriptions of

processes and housing outcomes that emerged; and, quantitative in terms of the cost of certain development risks, or of the numbers of residents who actually participated in the co-design process.

I selected the case study development models because they both contain characteristics that the literature shows could support some degree of adjustability during either design or use. These include: multiple dwellings; shared spaces; enlarged circulation; a scale that supports informal self-governance; management structures that reward participation; and, evidence of some *intention* to expand people's freedoms, by attempting to satisfy social, spatial or financial demands that are not normally available on the mainstream housing market. Importantly, I chose to look at the *revealed* preferences of people in housing developments whose production followed either a top-down or a bottom-up process. This was in order to contribute an improved understanding of whether citizens juries or participatory deliberation are relevant forums for producing a capabilities-led housing standard, or if there is in fact some potential for a more consultative version of the familiar, top-down development model to produce similar results.

The first case study is a cohousing scheme by developer, Town (Marmalade Lane in Cambridge) and the second is the micro-apartment model produced by Pocket Living (Marcon Place and Osier Way in East London, and Varcoe Road in Southwark). Being a cohousing scheme, Marmalade Lane was the primary focus of the fieldwork, however, Pocket Living was a sufficiently close fit with the identified characteristics that the model has been included for comparison. Both case study models emerged from local housing markets at a time and in places (Cambridge and London) where affordability has been more constrained than anywhere in the UK (Savills, 2021, p. 4). The selected models have some social and shared amenity characteristics in common (albeit to a lesser degree in the Pocket examples).

I describe the similarities and differences between the selected case in more detail in Chapter 7 *(Introduction to the case studies)*. However, it should be noted that a combination of relevance and access considerably narrowed my list of candidate case studies from the outset. For example, the LILAC (Low Impact Living Affordable Community) scheme in Leeds is perhaps the most innovative example of its type in the UK, having been not only co-produced but also containing an innovative financial model (Chatterton, 2013). This scheme, however, was on much lower value land than the case studies I chose and therefore, whilst of a medium density, could not claim to respond to the complex problem of affordability and density that is needed in areas with more competitive land markets. Conversely, whilst the OWCH (older Women's CoHousing) scheme in London deals with the problem of ageing in higher value areas (Devlin, Douglas and Reynolds, 2015), it is premised on mutual support to a defined demographic whose adjustment needs can be assumed to have been met by their decision to move.

Beyond cohousing, I also had access to other higher density schemes on higher density land, whose POE would have been of great interest to my office, as the architects that designed them. However, being of mixed tenure - and not aspiring to offer any novelty or enhancement (e.g. to adjustability or affordability) beyond what was already available on the mainstream, developer-led housing market - it seemed unlikely that adjustability would be of significant importance to either the producers or the occupiers. For example, renters have the advantage that they can adjust to changing needs by making house moves more easily than their owner occupier neighbours, and therefore they could be expected to place less value on other means of adjusting their housing (e.g. through spatial changes). Nevertheless, it was still important (or at least helpful) to have a supportive stakeholder or a pre-existing relationship with a resident, so that POE access was assured. For example, an ideal case study might have been the intentionally adjustable housing at Hellmutstrasse, Zurich (Leupen, Heijne and van Zwol, 2005, pp. 240–1), but having no insider or

connection to give me access - and being anyway outside the UK - this is an example of a good scheme for further research. Instead, my choice of case studies not only fitted the selection criteria described in Section 6.2 (below), but came with some degree of insider access.

A POE-based case study approach was not, however, the only available research method. An alternative would have been to have progressed the research as Participatory Action research (PAR). PAR may be loosely described as an attempt to improve or investigate practice, through reflective study of a group or organisation, in order to facilitate change (Chevalier and Buckles, 2019, chap. 1). As such it is both the medium for change and the method for its analysis (Embury, 2015, p. 530). Through this process of taking action upon reality and learning from that change, the objective of PAR is to identify the sources of oppression - whether of the powerless or of the powerful in a system (Reason and Bradbury, 2001, pp. 76–77).

The opportunity of PAR was to use one or more current projects from my architectural practice as live case studies. Through reflective praxis - perhaps using post-occupancy data from past projects - it might have been possible to inform and adjust our approach to the design process in real time. When scaled up from micro or grassroots situations to produce change at such a macro scale, however, PAR becomes more limited in its efficacy. This is because any influence over a hierarchical or inflexible institution - such as a planning authority, housing association or housebuilder client - would have relied too heavily on the involvement and influence of a high level champion, with the power to affect organisational change (Reason and Bradbury, 2001, pp. 77–78). Further - and on top of the issues of relevance and market novelty described above - a live project in my office would also have relied on that project continuing. This was something that might even have been threatened, had my research attempted to push back against a client and their commercial interests.

Instead, my decision to undertake the POE of some completed case-studies, ensured that the fieldwork would provide an empirical picture of the problems and any recommended changes, without risking or relying upon ongoing client relations. I have therefore conceptualised this phase of the research as a first step towards a future research project in which my findings might be used to attract and inform a potential, high level champion. Such a project would benefit from a better understanding of what adjustable housing is, to the extent that an authority or housebuilder might see the benefits of institutional change and feel informed enough to participate in a PAR collaboration, in pursuit of that outcome.

Just as there were alternatives to the research method and case studies, so too were other options available for data collection. The first of these was to use social media as a tool for canvassing a broader range of residents in both cohousing and micro-housing settings. The second was to place more weight on the survey work, by surveying residents at a number of schemes to generate tentative theory, 'snowballing' from one survey to the next. A third was to conduct focus group discussions instead of individual interviews. However, the public exposure of a social media survey risked causing commercial upset - possibly affecting my own practice's commercial interests and for that reason, the integrity of the research. Meanwhile, a greater emphasis on surveys was unlikely to produce the depth of analysis that was ultimately possible through interviews. Lastly, the option to consult focus groups instead of interviewing individuals had the potential to jeopardise the 'safe space' that I wanted to create for stakeholders to freely express their values and preferences. This was in case of power imbalances between developer and architect, for example, or in case neighbourly relations caused some residents to self-exclude.

In practice, some of the most insightful interviews were those involving 2-3 similar stakeholders (for example, the heads of sales and customer care at Pocket Living in one interview, and three of the feasibility study leaders at

Marmalade Lane in another). Indeed, once the fieldwork was underway, I reflected on the success of these small focus groups and even hoped to test or verify some of my findings by making time for a follow-on discussion between groups of stakeholders or even a follow-on survey with another Pocket Living scheme. However, the work of thematically analysing the data (as described in Section 6.4) proved so time consuming that there was not the opportunity for subsequent fieldwork.

The interview-based POE method that I ultimately pursued is entirely qualitative, comprising 23 resident survey responses, followed by 20 semi-structured, view-finding and fact-finding interviews with key, demand-side and supply-side stakeholders. Taking a grounded approach, I ensured that these interview questions were shaped by the tentative themes emerging from the survey findings, as described and characterised in Section 6.3. Thereafter,my process of thematic analysis has led to some recommendations, presented as an overlay of the RIBA Plan of Work. This is the seven stage[40] framework that architects and their clients follow, to bring clarity to building design and delivery (RIBA, 2020). My intention in using this format is not to propose a revision to the existing Plan of Work but to highlight when and to whom my recommendations might apply. This is so that the concept might be tested or operationalised, in the course of practice or further research - potentially including the engagement of architects through future participatory action research.

To conclude, however, it must be noted that there are limitations to survey and interview-based research. This is because they capture only a single point in time, and therefore cannot disentangle the effect of different contributory factors. Further, my case study approach represents only a tiny sample that cannot claim to characterise a grand theory of adjustable housing. Indeed, even

[40] The seven stages of the RIBA Plan of Work are, 1. Strategic definition (i.e. client requirements); 2. Preparation and briefing; 3. Concept design; 4. Technical design; 5. Manufacture and construction; 6. Handover; and, 7. Use (including post-occupancy evaluation as a method for providing evidence and feedback for designers and other stakeholders).

were this to have been possible, a process of expert validation would still be needed - including validation through practice - before my modified findings could safely be turned into design guidance. Nevertheless, by taking a grounded process and an interdisciplinary perspective, my research defines adjustability in housing as being not only about space, but also about tenure and infrastructure. Thus, an important limitation but also an opportunity of my thesis is that it sets out a framework that, although tentative, could have societal impact, once developed, tested and disseminated by further research.

6.1.5. Ethics

The stakeholders for the interviews included residents, developers, architects and sales agents and a planner, as well as the Strategic Planning Director for Pocket Living and the ‘enablers' of the feasibility study and co-design process at Marmalade Lane. As per the University’s ethics approval, each participant consented to the survey through their participation and had the option to volunteer for a follow-on interview when submitting their completed surveys. Prior to these, interviewees signed a consent form that gave them the right to withdraw at any time and to review the transcript. They were also advised that their identity would remain anonymous, although I made non-resident participants aware that their identity would be hard to conceal given their roles. Only Pocket Living requested a preview of the completed findings chapters for reasons of commercial sensitivity and factual accuracy, but found no changes to make. Although no sensitive or controversial ethical matters arose, their approval helped to protect the integrity and commercial value of the work. The survey and interview data will continue to be stored digitally, in a password protected folder and will be destroyed within three years of thesis submission.

6.2. The case studies and their stakeholders

In this first section, I discuss the rationale behind the choice of case studies, alongside my method for categorising the different stakeholders, and a summary of the fieldwork. This provides context for the findings that follow, and to Chapter 7 in which I more fully introduce my chosen case studies. It should be noted that as well as the selection criteria that I describe below, my choice of case studies was also influenced by practical issues of access. This meant prioritising developers with whom I have had some previous correspondence and schemes at which the community or a resident was prepared to distribute surveys, encourage responses and enable my visit.

6.2.1. Criteria for case study selection

The aim of this project - to develop a framework for describing and implementing housing systems that are adjustable over a multi-stage life course and viable to build in a UK context - relies on fieldwork to both determine which characteristics could provide owners with longer-term adjustability, and to identify what changes might be needed to make adjustable housing more attractive to UK developers. The baseline for case study selection was that schemes had to contain multiple dwellings and have been built at a time,in an area where there was an exceptionally high degree of pressure on house price affordability. I identified London and Cambridge as representing exactly such housing markets, particularly as their respective house prices have tended to move together since the 2008 financial crisis (Savills, 2021, p. 4).

Drawing from the three literatures of adjustable housing (Chapters 2-4), this fieldwork requires case studies that contain all of the following five criteria: (a) shared spaces or amenities; (b) circulation which has been intentionally enhanced or enlarged to enable social activity or occupation for other uses; (c) a

scale of development or way of organising the dwellings that supports informal self-governance; (d) a mechanism for rewarding participation; and, (e) an ambition to enhance people's capabilities and freedoms so that they can do and feel all that they have reason to value. These five criteria became the basis for my case study selection, as described below.

(a) Schemes with shared spaces

The first step of the filtering process was to identify schemes with non-private spaces or amenities that could support continuous optimisation between users. This was because successful optimising - or 'satisficing' - behaviour is contingent on there being enough *options* for a process of adjustment and adaptation to take place over multiple 'turns' (Simon, 1978, p. 350). In this project, such 'options' were considered to have been provided by means of shared spaces (such as walkways or gardens), or by shared amenities (such as a shared workshop or store room). However, the existence of such spaces was not sufficient qualifying criteria *per se*. This was because the utility of shared environments can only be efficiently optimised when the user group - or 'players' - is *stable* enough that they can form the sort of 'durable relationships' that are needed for mediating behaviour to become established over multiple 'turns' (Axelrod, 1984, p. 182). Thus, the shared spaces in qualifying schemes had to be exclusive to residents and therefore cut off from public access by means of physical barriers (e.g. a gated development) or else by implied barriers, such as a clear association with adjacent dwellings (e.g. a courtyard or cul-de-sac).

(b) Enhanced or enlarged circulation spaces

The second step of the case study selection was to identify schemes where semi-private shared environments (i.e. circulation) had been *intentionally*

included in the design, for the purposes of increasing design value. This was an important step because a shared circulatory environment is simply utilitarian and expedient unless there is a margin in the spatial design and associated rules that allows people to spill out into adjacent areas (e.g. by placing plants or a seat on an access walkway), or use in ways that make it more likely that neighbours will know each other and thereby agree how to adjust their development together. For example, a shared entrance area that offered no more than a passageway and post boxes would provide access and egress only, whereas an enlarged, daylit space with benches might add social value.

However, the process of filtering schemes according to the value judgments made by the designers at the outset, is subjective. For example, a shared walkway may feel uplifting because of its materials and detailing, yet achieve no more than regulatory compliance. For this reason, I filtered the case studies for schemes with shared elements whose value had been enhanced for social, environmental or economic reasons - that is, the 'triple bottom line' of design value as described by Serin *et al (2018, pp. 14–21 & 45)*. These parameters provided criteria for identifying the intentional betterment of non-private spaces during the design process.

(c) A self-governable scale or layout

The third step of the filtering process was to ensure that qualifying schemes had at least the *potential* to be managed and adjusted by resident users. In other words, they had to be configured as clusters or small estates where the scale of the architecture might help to enable self-governance. However, views differ across the literature about what scale of housing development is suitable for consensus-based decision-making to prevail. This creates further selection problems. Jarvis and Bonnett (2013, pp. 2356 & 2362), for example, describe a yearning for belonging and attachment that produces an ideal 'home zone' or cohousing cluster with the capacity to be governed by consensus. They describe

this as a physical architecture comprising smaller-than-average private dwellings, clustered around a 'social architecture' of shared amenities and outdoor spaces. However, they do not define the scale of such a settlement and other literature helps to fill this gap but offers only a *continuum* of cluster sizes. Coleman and Cross (1995), for example, suggest that more than twelve dwellings per block or six dwellings per entrance would negatively affect the formation of social structures, leading to anonymity between neighbours (1995, pp. 148–149). For Alexander *et al* (1977, p. 200) the importance of face-to-face representation by heads of households around a dining table, means self-governance will become strained if clusters exceed 8-12 dwellings. Meanwhile, for Doxiadis (1975, p. 442), the need to define 'territorial space' suggests that an ideal hamlet or 'housegroup' should comprise around 35 people.

These conclusions from the literature set the parameters of a suitably adjustable and self-governable case study as being somewhere between 6-35 dwellings, depending on household size. The literature also shows that within these, there should be some subdivision into clusters of 6-12 dwellings, with each being brought together by a common entrance or other unifying characteristic. These parameters are broadly supported by the *UK Cohousing Network's* recommendation that 10-40 households is an ideal scale for facilitating informal community dynamics (UK Cohousing Network, 2021). This guidance also fits with exemplar schemes such as *Spreefeld* in Berlin, in which a quarter of the accommodation is configured as 'cluster flats' or 'residential sub-projects' for up to 21 people (LaFond and Tsvetkova, 2017, p. 38). Thus, by drawing together the literature and professional guidance, these rough criteria became qualifying criteria for a suitable scale for an adjustable, self-governable case study.

(d) A mechanism for rewarding participation

The fourth criteria for case study selection was to identify schemes in which residents are motivated or incentivised to participate in decision-making. Some cohousing developments provide examples of situations where lease arrangements are designed to encourage residents to participate in the improvement and adjustment of shared spaces and other collective infrastructure (La Fond & Tsvetkova, 2017, p38). In other collective living situations, however, the lease arrangements mean that individual co-users will effectively *rent* the right to access the shared spaces and therefore the benefits from improvements will accrue to a third party provider (Schmid *et al.*, 2019, pp. 21–22). It is, however, difficult to discern the extent to which the benefits of improvements could accrue directly to residents. This is because shared environments - described in the literature as 'club goods' or 'complex private spaces' - exist in a continuum of ownership and consumption situations within which, the benefits and rewards will vary, depending on the residents' powers to change rules, use and conduct (Manzi and Smith-Bowers, 2005, p. 347; Chiodelli, 2015, p. 2572).

Given these differences - and to avoid laborious investigation into the ownership structure of each candidate scheme - I needed a shorthand to assess the extent of agency that had been given over to users. To do this, I adapted a two-part framework from McLaren & Agyeman's model for appraising different examples of the sharing paradigm (McLaren and Agyeman, 2015, pp. 13–15). The first part of this model defines *transformational* benefits as improvements whose value flows to participants but not to renters, thus eliminating developments with rented tenure, or those in which service charges are set by a third party in which participants have no controlling interest. The second part of the model distinguishes between schemes where resident participation is *informal* and between players, or *managed* by an agent or other provider, thus eliminating schemes where users would have to seek permission from a third

party to make improvements - for example, to place seating, plants or drying laundry in a common area.

Using this framework, I was able to identify schemes in which resident participation can happen *informally,* and where any *transformational* benefits accrue to the participants themselves. This meant that 'co-living' was excluded on the basis that such models are part of the 'sharing *economy*' - governance being highly managed (rather than informal), and shared spaces being within a payment structure that rewards the provider (rather than the residents) for any improvements (Schmid *et al.*, 2019, pp. 21–22).

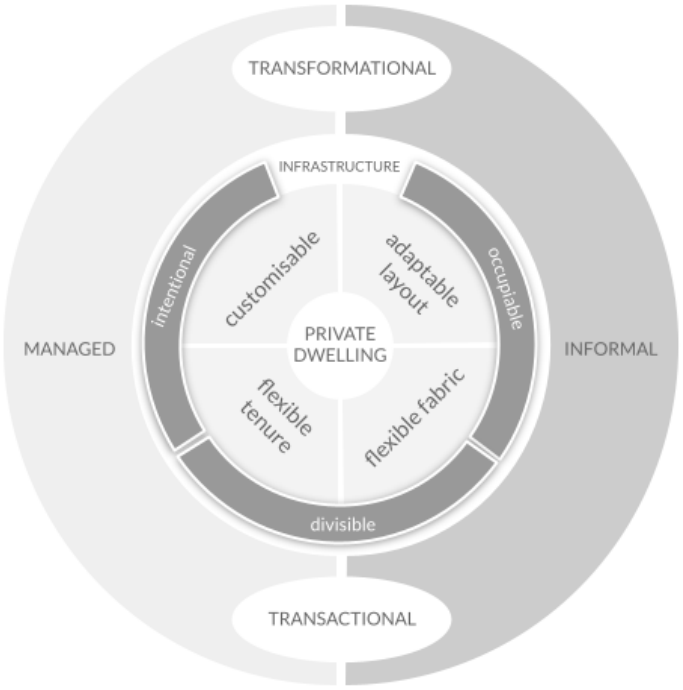


Figure 8: *an early diagrammatic tool for making my case study selection (author). This allowed me to colour segments to visualise the extent of adjustability that was present in each candidate scheme. Drawing on the literature, as described above, the segments of the central rings show adjustable characteristics of dwellings and infrastructure. The outer ring refers to whether the scheme is informally managed by the residents or else managed by a third party freeholder or agent, as well as whether the benefits of improvements accrue to the building users (transformational) or the freehold owners in the form of a capital gain (transactional) (after McLaren and Agyeman, 2015, pp. 13–15).*

(e) An ambition to enhance users' freedoms and capabilities

The fifth and final step of the case study filtering process was epistemological, being concerned with ways of understanding a case study in constructivist rather than positivist terms. This meant disregarding the observable, spatial and legal aspects of the housing itself and instead, looking at the *freedoms* that people acquire through their choice of home, or the process through which that choice came about (Varoufakis, 2002, pp. 463–4). By taking this 'capabilities approach' (see Section: 0.1.2), qualifying schemes had to have been motivated by users' longer-term housing *needs,* rather than simply meeting an assessment for local housing *demand*. This required schemes which offered residents the opportunity to satisfy more of their 'capabilities' than would otherwise be available to them in a typical, transactional situation in which the only objective was to match a willing buyer with a willing seller (Foye, 2020, p. 10). For example, a shared environment that is designed to give people the freedom to feel connected through human contact or engagement with management or maintenance activities, can be said to have provided the freedoms to avoid social isolation.

6.2.2. Application of the selection criteria

Such deference towards users' freedoms in my selection process was necessary because people's *stated* preferences (what they say they want) may vary considerably from their *revealed* preferences (what they actually bought). One consequence of this is that not enough is known about the way that *power* imbalances determine housing outcomes for different groups (Foye, 2020, p. 13). For example, cohousing researchers consider 'deliberative democracy' and collective agency to be a naturally empowering approach to decision-making (e.g. Crocker, 2008; Sharam, Bryant and Tom Alves, 2015; Sharam, 2020), whereas, in practice, people's capabilities will only be enhanced if such agency is

accessible to all potential participants, regardless of their life stage and financial means (Kimhur, 2020, p. 272). Similarly, hedonic studies - or 'happiness economics' - divides around whether people are really capable of maximising their subjective well-being or freedoms (Clapham, Foye and Christian, 2018, p. 264), or if they in fact form their choices around heuristics such as status, or *relative* criteria - for example, their positional advantage over relevant peers (Clapham, Foye and Christian, 2018, p. 264; Foye, Clapham and Gabrieli, 2018).

Instead, by applying the filtering criteria described in 5.1.1 to familiar housing typologies, it is quickly apparent that estates of more than 40 dwellings - or where dwellings were not organised into clusters - would not qualify. This is because their scale and organisation would exceed the threshold set for informal self-governance to occur (see Criteria (c), above). On this basis, many familiar, multi-apartment typologies would not qualify for reasons of scale (including examples of 'new urbanism' produced by this researcher whilst working in architectural practice). Indeed, even mansion blocks or tenements would only qualify if the flats were clustered (e.g. by floor) around enhanced shared spaces (e.g. oversized access walkways). Meanwhile, a development which was predominantly rented (e.g. co-living) or where non-private spaces were provided by a third party (e.g. supported living in older age) would not qualify, because the rewards from participation in their management, maintenance, adaptation or occupation would accrue to the freeholder, rather than to the user participants themselves (see Criteria (d), above).

Difficulties arise, however, in trying to identify schemes which enhance people's *freedoms*. This is because an appraisal of housing outcomes using the capabilities approach must, on the one hand, establish the freedoms that users have reason to value, but on the other, disregard more measurable and familiar concerns around material, space, utility or monetary value (Kimhur, 2020, pp. 271–272). This requires the researcher to accept that they cannot claim to know

the freedoms that people have reason to value until the users themselves have been asked.

Using these selection criteria, the selected models are all on the edges of cities where affordability pushes innovative solutions to the fringes. The first of these - Marmalade Lane (as introduced in Chapter 7) - was an obvious fit, despite being just over the 40 dwelling threshold. This is because the 42 homes are arranged into clusters (rather than forming a single block, for example), shared amenities abound (e.g. the Common House), and there are examples of incidental enhancements (notably 'the Lane', being much more than an accessway). Meanwhile, the right to self-govern and co-own the freehold (via a Company Limited by Guarantee) ensures that rewards for participation in management and maintenance work will flow to the owners rather than a third party freeholder or landlord. These rights are theoretically augmented by the developer's offer of the chance to co-design and to customise a home as part of a custombuild offer. The offer of a sociable, supportive environment, however, is more relevant to the expansion of people's freedoms, on the basis that this could offer residents some enhanced resilience against loss of income, for example.

Alongside, schemes by the developer, Pocket Living (again introduced in Chapter 7) also fit the selection criteria closely enough to justify their inclusion. These provide a way of comparing the findings from Marmalade Lane against more price-constrained developments and the stated preferences of buyers who lack the range of choices that were available at Marmalade Lane. Pocket Living schemes typically satisfy the remaining criteria because they give owners *some* rights of self-governance (e.g. a residents' management committee and representation on the board of directors) and fundamentally, the model is premised on giving people the option to buy a smaller, cheaper flat from which they acquire other freedoms. These include stable tenure (through ownership) and resilience against changes in income (through Pocket's affordability

commitment and associated discount). Qualifying Pocket developments are those which (a) contain 40 dwellings or fewer (or are broken down into clusters); (b) have at least one shared space or amenity (e.g. a communal garden); and, (c) include enhanced circulation spaces that people may appropriate for social or functional purposes (e.g. entrance areas or access walkways). An illustration of these selection criteria is shown below.

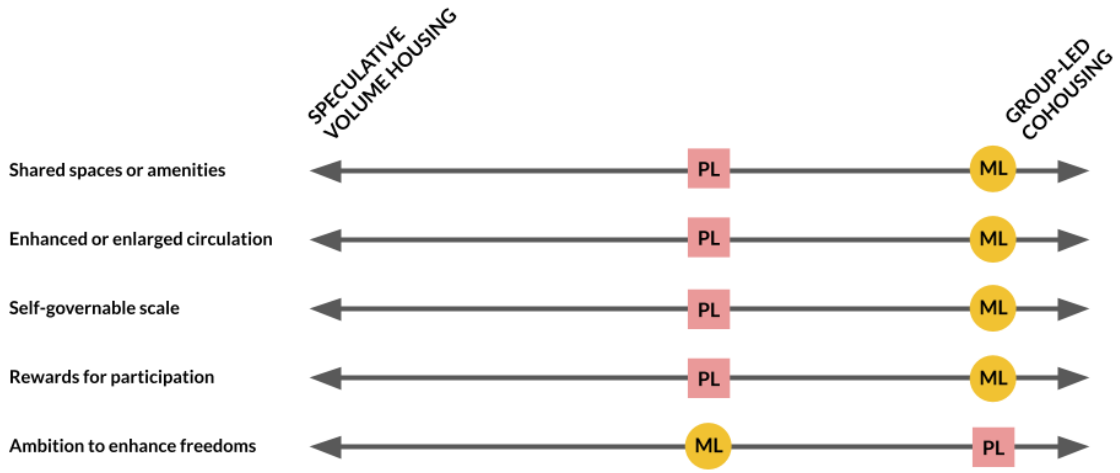


Figure 9: *An illustrative appraisal of the two case study models, Pocket Living (PL) and Marmalade Lane (ML), against the five selection criteria. This is on a crude spectrum from a typical, developer-led volume housebuilder scheme through to a cohousing scheme (author).*

6.2.3. Introduction to the stakeholders

Using a hybrid of categorisation systems found in the literature, I organised the different stakeholders into three categories, rather than the usual supply-side and demand-side distinctions that are normal for housing market literature. These are: the *Consumers* of the housing itself (the demand side); the *Suppliers* of capital, land, planning permission and legislation, including, investors, approvers, landowners and their agents (McGlynn, 1993, p. 7); and, the *Producers* of the development itself, including developers, 'objectors', 'promoters' (or, 'marketeers', often estate agents) and designers (in this case,

architects) (McGlynn, 1993; Wilkinson, Sayce and Christensen, 2015; White *et al.*, 2020). The stakeholders and their contributions to the fieldwork (i.e. their interviews and survey participation) are scheduled in Table 1 overleaf, but with the names of companies and individuals anonymised, as per the ethics approval.

Table 1: *A schedule of stakeholders and their contributions to the fieldwork*

MARMALADE LANE				
Stakeholder	**Role**	**Method / no.**	**Date**	**Ref**
Producers	Developer (Founding Director & Head of Community Partnering)	Interview (n=2)	16.07.20	P2.1
	Architect	Interview (n=1)	17.12.20	P2.2
Consumers	Residents	Survey (n=11)	10.11.20 - 19.11.20	C2.1
	Residents	Interviews (n=5)	04.03.21 - 24.03.21	C2.2 - C2.6
	Sales Agent	Interview (n=1)	21.04.21	C2.7
Suppliers	Feasibility study designer	Interview (n=2)	18.12.20	S2.1
	Briefing facilitator			
	Head of Development Management, Planning and New Communities'	Interview (n=1)	12.04.21	S2.2

POCKET LIVING				
Stakeholder	**Role**	**Method / no.**	**Date**	**Ref**
Producers	Strategic Planning & Comms. Director	Interview (n=1)	10.07.20	P1.1
	Head of Customer Experience & Head of Sales	Interview (n=2)	18.12.20	P1.2
	Architect (Marcon Place, Rosina Street and Osier Way)	Interview (n=1)	01.04.21	P1.3
Consumers	Residents	Survey (n=12)	22.09.20 - 09.11.20	C1.1
	Residents	Interview (n=4)	08.02.21 - 09.02.21	C1.2 - C1.5

6.3. Survey and interview design

The surveys broadly asked the stakeholders three groups of questions: (a) What did you get (or deliver)? (b) Did this help you (or your customers) to acquire the freedoms and capabilities that you (or they) have reason to value? (c) What could help you to achieve (or deliver) those freedoms and capabilities in the future? A set of example survey and interview questions received ethics approval on 06.07.20. The surveys were distributed to all residents by a member of the residents' management committee from each scheme. I subsequently distributed flyers[41] to the Pocket Living cohort to increase the number of survey responses, and ultimately the number of respondents matched those received from residents of Marmalade Lane. I was fortunate in having an 'insider' resident at both Marmalade Lane and at the primary Pocket Living case study (Marcon Place). This helped to ensure the higher rate of survey and interview participation.

It is important to note that the fieldwork happened *after* the first Covid-19 lockdowns had interrupted the Spring and Summer of 2020. Respondents' experiences of this period inevitably coloured their perceptions of home and produced the heightened awareness of resilience and changes in housing needs that are apparent in the findings. This made the fieldwork somewhat time-sensitive, as perceptions seemed likely to change by the month over that period. To manage this problem, I delayed the surveys and interviews to give participants time to reacquire the perspective of 'normality' before answering questions. I also ensured that the interviews (and the resident interviews in particular) happened broadly concurrently, lest changing perceptions of virus risk were to create contextual anomalies.

[41] The flyers contained a web link and QR code, directing the receiver to the research information sheet and the online survey itself.

6.3.1. Survey design

The resident surveys were exploratory, being intended to identify initial themes and to invite and profile respondents for interview. Designed using *Qualtrics* software[42]I benefited from some precedent surveys released around the same time, as part of housing research into changing housing preferences due to the Covid-19 pandemic (Carmona *et al.*, 2020; Nanda *et al.*, 2021). One lesson from these was that a maximum of twenty questions could be feasible, so long as the answers were predominantly multiple choice or on a likert scale. Another lesson was around specificity, noting, for example that the survey distributed by Nanda et al (2021) created semantic ambiguity by including 'cottages' and 'bungalows' as multi-choice options, despite these being typologically similar and open to contextual subjectivity[43]. A third lesson was that people need ways to skip a question and move on to the next (i.e. n/a options). Lastly, I found that some limited use of text boxes (ideally at the end) give people the option to add more detail or unexpected insight. This was especially important for determining which characteristics provide owners with longer-term adjustability, because multi-choice options alone could miss some crucial aspects or bias the outcome, being based on the cohousing literature and unconscious professional bias (see Chapter 4 and Section 0.3.1, respectively). Accepting therefore that my grounded approach would benefit from a limited number of free answers, I capped the number of survey questions at twelve. This was, in part, because participation was as important as the answers, given their function was in large part to invite respondents to come forward for an interview. It was also because one benefit of the answers was to frame subsequent interview questions themselves, as per the grounded process (described in Section 6.2.1), where the data itself is used to generate theory, rather than allowing the researcher's bias to predetermine the outcome (Glaser and Strauss, 1967, pp. 32–34).

[42] A platform for designing and distributing surveys and thereafter, presenting the findings - *https://www.qualtrics.com/uk/core-xm/survey-software/*
[43] i.e. a cottage could be considered a bungalow but in a rural area

The main thrust of the survey was to ask questions that test respondents' definitions of design value in housing. However, I framed these in a number of different ways, designed to ensure a more rounded picture of demand. Thus, some questions ask what would make the respondent move or stay (e.g. Pocket Living survey, Q6), whilst others are more specific, offering a choice of characteristics that the participant might value or would value next time (e.g. Pocket Living survey, Q4 & Q8). The question of staying or leaving is an example of the capabilities-led methodology, because it asks people what they *need* to satisfy certain freedoms over the longer term, rather than what they *want* or *wanted* at the moment of buying (see Section 6.1.3).

Being an interdisciplinary research project, the scope of my survey questions - and indeed, the interview question that followed - concern housing services that are both spatial and non-spatial. These include questions about customisation, co-design, management and maintenance, as part of the bundle of housing goods that do or could add value (e.g. Pocket Living survey, Q9). Likewise, some questions ask not what people want - or even value - but if and how they managed their exposure to risk - be this financial security, personal safety, job security, resale, changing needs and attitudes to borrowing (e.g. Pocket Living survey, Q4, Q5 & Q7). Throughout, when suggesting characteristics such as cohousing amenities or shared ownership options, I was careful to frame the questions in ways that allowed respondents to reject the extremes with which *housing* has become associated - that is, the communitarian characteristics implicit in cohousing, or the compromises implied by conventional, subjective understanding of house price affordability (see Section 2.1). In other words, respondents always had the option to express a preference as regards ways of mitigating certain risks or achieving other freedoms. A summary of both sets of survey questions and the purposes of each are at Appendix A.

6.3.2. Interview design and methods

The survey findings were integral to my interview design because they were my first insight into the design, management and value judgements that shaped the respective schemes. Thus, through the survey, I was able to identify the candidates and candidate themes that deserved more through investigation through the interviews. In this short section, I trace the grounded process of my interview design, looking first at the 'gateway' moments in my survey data, through to the execution of the interviews themselves. The section concludes, with examples of the visual aids that I used during the interviews themselves, to direct participants towards their freedoms rather than preferences, as per the project's capabilities approach.

One example of how the surveys informed the interview design is the pronounced difference that was revealed between those aged >40 and those ≦40. This filter revealed that all but one of the six Marmalade Lane respondents aged >40 at Marmalade Lane had actively sought out a cohousing scheme - some even moving far from friends and family to achieve this goal. In contrast, not one of those ≦40 (n=5) had been looking for a cohousing scheme before the opportunity arose. A similar picture emerged of the co-design process. Here, ⅔ of those >40 (n=4) had actually been involved in the co-design process, compared to only one those age ≦40. This pattern continued with the finding that those aged >40 were more than three times as likely to use the shared kitchen and twice as likely to use the other social features of the scheme, when compared to the ≦40 cohort.

This picture of disequilibrium between older and younger residents was continued at Marcon Place - a Pocket Living scheme, where most residents are ≦40 years old. Here, ten of the twelve respondents said they were either ambivalent (n=4) or uninterested (n=6) in some key cohousing characteristics, such as a shared kitchen, dining, laundry, or meals. Instead, the respondents placed a much higher value on smaller, cheaper and more functional amenities

such as shared storage (n=6) and growing space (n=9). This was because the value of these smaller, cheaper and more functional amenities were things that might otherwise have prompted them to move house to acquire. In other words, the presence of features designed to extend the occupancy of a home, rather than enhance the social experience, appeared from the survey to expand people's freedoms and therefore their capabilities.

In addition to these relatively specific survey findings, a bigger picture was also emerging that was to inform the subsequent interview design. The first was that fewer than half of the eleven respondents at Marmalade Lane (n=5) had actually participated in the design process. This was despite the sales agent's claim that "the future residents of Marmalade Lane have been instrumental at every stage of the process, from early ideas right through to working alongside the developer team on the detailed design" (Savills, 2020, p. 14). The second big picture finding was that eight of the twelve respondents living in the Pocket Living scheme were aged between 31-40 when they bought their flat, five years earlier. In other words, contrary to the developer's claim that "most Pocket buyers come from the large pool of young employed single person households" (Pocket Living, 2021, p. 2), the reality is that most buyers are already at or beyond the average age of a first-time parent in the UK[44] when they buy their flat (ONS, 2019, sec. 3), and of the respondents, more than 25% are now in their 40s. The last big picture finding from the survey was that at the time of buying, >80% of all respondents from Pocket Living were fully aware that part ownership was an option, yet instead, chose a smaller space with a conventional mortgage (in response to Pocket Living survey Q7 - see Appendix A).

These initial findings prompted me to include interview questions concerning the value to users of a group-led co-design process, as compared to a more limited or semi-speculative, custom design experience (see Appendix B, Q2 of the Marmalade Lane interview questions, and Q4 of the Pocket Living

[44] In 2019, the average UK first-time mother was 31 and 34 for fathers(ONS, 2019, sec. 3)

questions). The same findings also prompted interview questions around exclusion and self-exclusion. In this case, my questions were about barriers to entry and the value of shared spaces or social experiences to different groups (see Appendix B, Q3 and Q8 of the Marmalade Lane questions, and Q1-2 of the Pocket Living questions). Lastly, in relation to people's capabilities, an insight into restrictions on people's freedom to have a child, form a couple, sit outdoors or sublet at Pocket Living (Appendix A, Pocket Living Q6 on reasons for staying or moving) was the basis for my interview questions on moving house, joinable dwellings and the value of home (see Appendix B: Q6, Q7 and Q9 of the Marmalade Lane interview; and Q5 - Q7 of the Pocket Living interview).

The interviews themselves each lasted between thirty minutes and just over an hour and were conducted remotely - typically by video call or sometimes by phone. This was not only because of Covid-19 restrictions at the time but also because the flexibility of time and place helped boost participation. Some interviews involved more than one participant - resulting in a focus group discussion, of sorts (see Table 1) - and each was transcribed using AI software[45]. Soon after each discussion, I cleaned up the transcript by correcting words that the software had misheard. I also tended to remove hesitations, repetitions or excessive verbal tics, to make the transcript clearer where necessary. As per the ethics approval, I shared each transcript with the participants, although very few replied with corrections.

Being semi-structured, each interview was somewhat shaped by the discussion but always followed eight areas of inquiry. These were, (1) co-production (co-design and identity-forming); (2) demographic (age, education and wealth); (3) tenure (owning, renting and shared ownership); (4) maintenance and management (participation); (5) moving house (pressure on private space); (6) adjustability (of the estate as a whole); (7) reasons for sharing (social, neighbourly, practical/spatial or sense of control); and, (8) the design value of

[45] Otter.ai software was used for transcribing all interviews. The transcript includes a recording of the call. All participants were made aware of this before starting.

home (social, economic and environmental value). Around each of these topics I prepared a set of questions designed to establish whether the characteristic in question had been material to the participants' decision-making (e.g. design or transaction choices), whether it enhanced their (or others') capabilities, and whether this increased people's ability to control and adjust their housing, relative to their perception of risk and objective needs (as opposed to their subjective wants). The example questions tabulated at Appendix B show the sub-questions under each of these headings, alongside a note on their research purpose and origins in the literature.

The interviews were entirely discursive. However, I used a short set of graphics to illustrate a set of questions about adjustability. These were useful because words alone would have required a complex and inevitably jargon-filled description of the relationship between the private dwelling and shared infrastructure or tenure. Instead, my illustrations were able to communicate the three dimensions of adjustable housing in a way that prompted discussion but tried not to lead. These first showed two private dwellings, the first being a 1-bed/1-person Pocket Living flat (as an example of a price-constrained choice) and the second being a 3-bed/4-person flat that would be more likely to accommodate a wider range of housing needs without reliance on shared amenities.

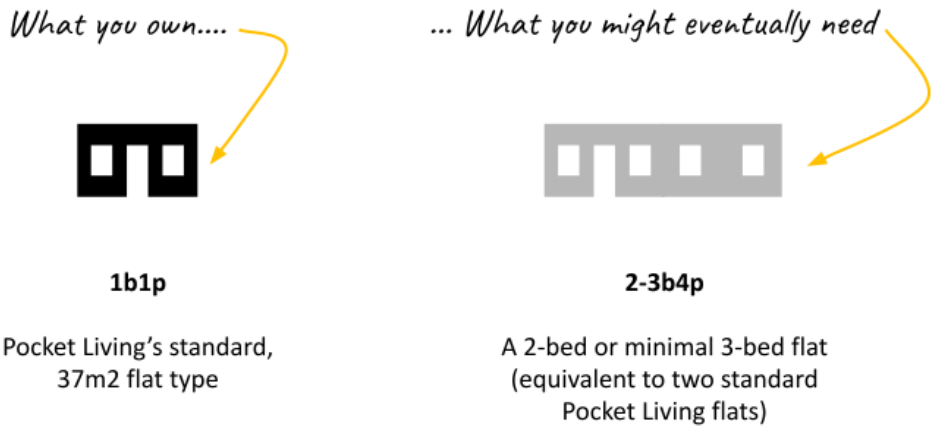
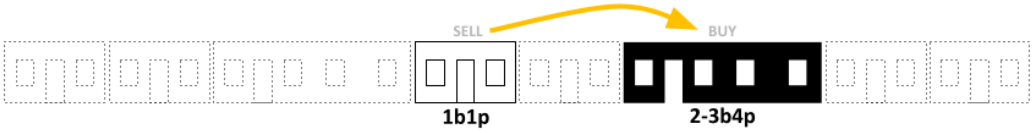


Figure 10: *An introductory slide to explain two flat type scenarios to resident interviewees, used to illustrate a minimal flat type versus something that might be more adjustable to a wider range of housing needs (author).*

The four subsequent slides were intended to help participants understand some of the different ways that changing needs might be supported, without requiring the owner of a small flat to have to leave their community. These were: (1) by trading up using equity growth; (2) by using shared ownership to part-rent and part-own a bigger flat in the first place; (3) by merging (or dividing) adjacent flats; or, (4) by having a greater extent of shared amenities to support activities that spillover from the private home. This illustrative approach was effective in promoting reactions and discussions - regardless of people's experiences or understanding - because each slide was anchored around the familiar, tangible and relatable construct of the private home.

1. Adapt by moving within the same scheme (if your equity grows enough)

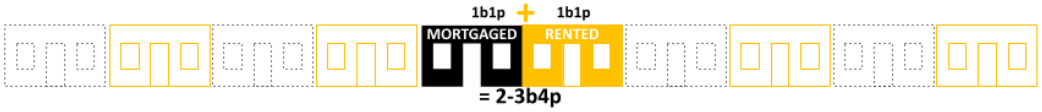


Sell your 1-bed/1-person flat and buy a 2-3 bed/4-person flat
assumes fast-growing property values and a mixed-size development

2. Adapt through part-ownership

Buy a 2-3 bed/4-person flat in the first place
assumes a portion is rented from a shared ownership investor or collective investment fund

3. Adapt by joining flats together



Keep your 1-bed/1-person flat but rent or buy the flat next door and join them to make a 2-3 bed/4-person flat
assumes a scheme made up of similar-size, mixed tenure flats designed to be joined or divided over time

4. Adapt by using shared amenities

Own a compact 2-bed from the outset but use shared amenities as spillover for guests, activities, garden and storage
assumes higher service charges and resident-led management

Figure 11: *Four ways that changing needs might be supported without requiring the owner of a small flat to have to leave their community, as used to prompt discussion during the resident interviews (author).*

6.4. Analysing the data

This section describes the iterative process of thematic analysis, explaining how the codes and headings were developed to produce candidate themes. Before discussing the process of producing theory from the raw interview and survey data, however, it is important to state at the outset that there was a difference between the way the data was *gathered* and how it was ultimately *analysed*. This difference arose because the interview and survey questions required a conceptual focus around the concepts of adjustability and co-management. Thereafter, however, it was important that the process of analysis allowed other themes or sub-themes to emerge, because the aim of the research is to generate a *framework* for describing and implementing adaptable housing, using a body of data whose content was unknowable at the outset. In practical terms, this meant that the emerging concepts of adjustability and co-management were in fact conceptual *tools*, rather than a hypothesis to be tested. The process of analysis therefore needed to be so flexible that these concepts could be expanded or even discarded in the event that other, unexpected ways of supporting longer-term changes in housing need, began to emerge. My methodology for doing this is described below.

6.4.1. The choice of an inductive process

Having identified adjustability as an under-theorised gap in the three areas of literature, the interviews inevitably produced data that was directed towards this broad concept in the first instance. On this basis, it would have been reasonable to have pursued a *deductive* - or top-down - approach, to rigidly filter the data for only the most relevant themes to the original theoretical position (Braun and Clarke, 2006, pp. 83–84). However, being semi-structured, the interviews also allowed for a wider inquiry into the relationships between adjustability and the tenure, management and housing environment. This

produced a rich description of participants' wider motivations that would have been lost had I pursued a deductive approach. For this reason, I found a grounded approach to be preferable (see also 6.1.2, above). This is a process that helps to ensure that substantive but surprising theories can still emerge from the process of analysis, whether or not they had been anticipated at the outset of the empirical work (Glaser and Strauss, 1967, pp. 32–34). For this reason, I chose an *inductive* (or bottom-up) process of thematic analysis to produce theory from the raw interview and survey data, using the methodology described below.

6.4.2. An introduction to thematic analysis

Thematic analysis provides a relatively flexible method of text-based analysis, being a tool for identifying and organising data into separate chunks, according to apparent patterns or 'themes' (Braun and Clarke, 2006, pp. 78–79). Such flexibility is well suited to a grounded approach because it allows the research questions to *evolve* through a bottom-up process, during which the transcript data is systematically decomposed to reveal unexpected patterns (Braun and Clarke, 2006, pp. 84 & 97). This can be illustrated through the way that single chunks of transcript text are often broken into separate themes. A good example is one respondent's statement that "buy-to-let landlords are not a good thing…[but] as it so happens, I am one" (C2.2, 29:16). Had I used only narrative analysis to categorise this statement, the evident contradiction would have been retained for its own sake, whereas the objective of thematic analysis is to seek patterns *across* the data set (Braun and Clarke, 2006, p. 97). Likewise, a deductive analysis - one that screened only for pre-defined notions of adjustability - would have meant overlooking this statement altogether. Instead, using thematic analysis, I was free to break down this phrase to reinforce two quite separate themes: The first concerns the prevalence of surplus housing wealth amongst founding residents ("I am one [a buy-to-let landlord]"); The

second concerns the incompatibility of rented tenure and co-management ("buy-to-let landlords are not a good thing"). In practice, these extracts became emerging themes once the data collection began to reveal that other participants had expressed similar views.

The process of using thematic analysis to generate theory and findings from the data is drawn from widely-cited literature in social science research (Braun and Clarke, 2006, pp. 86–93; Bryman, 2012, pp. 578–581), as well as from online resources (e.g. Schultz, 2012; Ravasi, 2021). These describe subtly different approaches. For example, Braun & Clarke (2006, pp. 87–88) advise tagging or 'coding' each chunk of the data using short segments of the raw transcript, whereas Schultz (2012, pt. 3:45) suggests using keywords or two word descriptions. I chose the latter option for this project but used words or terms that came from participants, wherever these provided enough meaning. Once I had prepared the transcript data, I then followed the analytical steps below, as adopted and adapted from Braun and Clarke (2022, p. 35):

Step 1. **Familiarisation** to produce tentative headings ('open coding');

Step 2. **Coding** the dataset ('closed coding' or 'coding the codes') into data groups;

Step 3. **Generating** initial or 'candidate themes';

Step 4. **Developing** the themes and subthemes to create 'thematic maps';

Step 5. **Refining** the definitions, names and maps (or diagrams) of each theme;

Step 6. **Presenting** the themes with reference to the literature and project aims.

I expand on each of these steps below.

6.4.3. Familiarisation, leading to initial codes or headings

The process of becoming familiar with the data was also a filtering process for each transcript, during which I highlighted the phrases or segments of text that were broadly relevant to adjustability. I then tagged these so that they could be traced back to their source transcripts, using a system that identifies their stakeholder group, the case study, the participant and a timestamp. Using this system, a Producer, Supplier or Consumer would be tagged 'P', 'S' or 'C', whilst the case study that they related to would be tagged 1 or 2 (1 = Marcon Place; 2 = Marmalade Lane). Thus, a phrase tagged 'C2.3, 23:14' would denote a Consumer ('C') from Marmalade Lane ('2'), the third to be interviewed ('.3') at 23 minutes and 14 seconds into the interview ('23:14'). This tagging method also provides some anonymity for the participant[46].

Once I had highlighted and coded the most interesting or relevant phrases, it was 'safe' to copy each chunk of text out to a table of headings. These evolved continuously - as per the grounded process - and proved a useful way of becoming familiar with the data (Braun and Clarke, 2006, pp. 87–88). As expected, the first transcripts were the most time-consuming to analyse but with each subsequent transcript, fewer adjustments to the headings and codes were necessary (Schultz, 2012). The process was made easier by tagging the text according to four main headings. These were: (1) by *housing model* (i.e. co-living > compact living > semi-speculative custom build > cohousing); (2) by *stakeholders* (i.e. producers, suppliers and consumers); (3) by *topic* (e.g. design, amenity, group, incentives, experience, process); and, (4) using *wellbeing* framework headings (i.e. control, health, nature, wonder, movement and belonging), as adopted from the *Quality of Life framework (QoLF)* (Urbed, 2021). Though time-consuming, this process of categorising, rationalising and recasting these headings was also difficult to avoid, being the most rigorous and iterative way of becoming familiar with the richness of the data. I describe the four

[46] See list of participants in the 'Data sources' section found at the back of this thesis.

headings outlined above in more detail at Appendix C.

6.4.4. Coding the dataset

Once I had gathered enough data under the four headings above, I proceeded to code the text around fourteen emerging but still very tentative themes. These were, DESIGN PROCESS, HOUSING MIX, DEMOGRAPHIC, SOCIAL EXPERIENCE, FINANCIAL CONTROL, FINANCIAL SECURITY, TENURE SECURITY, DWELLING DESIGN, ESTATE DESIGN, LOCATION, SHARED INDOOR AMENITY, SHARED OUTDOOR AMENITY, SCENARIOS and MANAGEMENT. From these, a picture began to emerge of the strongest themes, however, I found it difficult to manage the minor differences between some of the codes. Thus, I made another attempt at rationalising or, 'coding the codes' motivated, in part, by the need to reduce them to a more manageable number, and, in part because I had somewhat adopted terms from the wellbeing literature - for example, 'permanence' and 'influence' from the *Quality of Life* framework (Urbed, 2021). I found that these ambiguities and imperfect fits were preventing me from making a more granular contribution.

By breaking down themes of 'permanence' and 'influence', I arrived at a more manageable system of eight different codes. These were, INFLUENCE, REGULATION, IDENTITY, ASPIRATION, REASSURANCE, ENVIRONMENT, AGENCY and TRUST. The table below shows how each of these relates to the first round of coding, as well as to keywords, in the transcript data. This table helps to show how the code, REASSURANCE, came from an amalgamation of tenure security, financial security and financial control; whilst the code, ENVIRONMENT, came from a merging of data relating to both spatial and digital environments.

Table 2: *Recoding the first round of codes to produce a more granular but still tentative list of thematic codes.*

Previous code	Re-code	Purpose
Design process	INFLUENCE	Conceptual control (during briefing) *KEY WORDS: participatory, feel part, briefing, aware, engagement, input, influencing, review, process, conscious, promote, agreement, changed, know, arm's length, consulting, co-design, wanted, sufficed, sacrifice, framework, plan, decisions, concept, brief(ing), idea, design guide, specification, value engineering, client, involved, speculative, develop, surveys,*
Housing mix Scenarios	REGULATION TRUST	Regulatory control (during design and in use) *KEY WORDS: space standards, regulation, planning, planner, permitted development, rights, City Hall, Council, design guide, vision, conform, interest, numbers,*
Demographic	IDENTITY	Demographic similarities that assist control through empathy and trust (during design and use) *KEY WORDS: demographic, age, particular, certain, uniform, suited to, excludes, multi-generational, semi-speculative, diversity, variety, 'people who have the money/previous homes', equity, hard up, socio-economic parameters, partner, transience, new members, kids, child, baby, parent, old, young, families, those who were in the room, group, neighbours, housing circumstances, put off, label, we don't want them, divisions, exclusion, without, degrees, active interest,*
Sociable experience	ASPIRATION	Sufficient alignment of values and vision to support the enduring relationships needed to maintain control (during design and in use) *KEY WORDS: brand, ethos, lifestyle, objectives, desire, love, nice, intent, hope, appealing, want, live like, feeling, need, feel, downsizers, quality, enough, legacy intent, funding, interests, objectives, social objectives, balance, negotiated, consensus, commission, 'skin in the game', doing good, commuted sum, own(ership), equity, rent, invest, sublet, stable, vested interest, rather, bond, want, choice, value(s), ethos, steady income, right reasons*

Financial security Financial control Tenure security	REASSURANCE	Sense of control over the costs and risks of building, transacting or borrowing (point of entry) *KEY WORDS: committing, nervous, worry, secure(d/ity), handhold, decisions, reevaluating, drag, first dibs, certainty, control, protected, risk, exposure, sales risk, diversify, capital, income, situation, savviness, financial burden, on their own, social isolation, loneliness, dislocation, move, moving on, stay longer, early joining, discount(ed), cheaper, show you're serious, expecting, control, restrictions, afford, expensive, viability, if everything goes right, competition, tender, viable, cost, affordability, price, premium, outside finance, development risk, sales risk, developer-led, developer, cost/benefit, access, maintain, sellable, drop out, choice, evicted, permission*
Dwelling design Estate design Location Shared indoor amenity Shared outdoor amenity	ENVIRONMENT	Physical and digital spaces as infrastructure for co-management *KEY WORDS: design, enabled, give power, repurpose, instigator, architecture, designer, quality, building, rooms, performance, flexible, adaptable, retrofit, customisation/able, functions, database, technology, apps, digital, media, Slack, rules, spaces, circulation, access decks, entrance sequence, little eddy, join(able), split, brought together, repetitive, safe, secure; private living space, sense of ownership, private dwelling sizes, shared amenities, common house, aesthetic, streets, eco-friendly, bigger*
Management	AGENCY	Collective control (during use) *KEY WORDS: action, manage(d), influence, involve(ment), intentionality, investing, informally, interested, community, communicate, do it ourselves, communal(ity), committee, commune, cooperation, conversation(s), designation, populated, resident-led, buy-in, join in, agency, power, vote, ownership, empower, represent, do things collectively, get together, meet(ings), collective, management, solve together, other people around, skin in the game, ourselves, social, part of it, human contact, governance, group, evolution, shared, bind, understand, experience, told what to do*

6.4.5. Generating, developing and refining the themes

Despite this refinement of the coding system, I found my analysis allowed too much focus on wellbeing and control, whereas a review of the codes from an adjustability point of view showed that some of the terms were still not granular enough. Text tagged with the code, IDENTITY for example, was premised on the original assumption that identity and the demographic similarities between neighbours is important for social reasons (P2.2, 32:08 & 32:37). From an *adjustability* perspective, however, it appears that some people want their neighbours to have a similar identity to their own, simply because they find it easier to make decisions with people who have similar values or come from similar backgrounds. For example, one Pocket Living resident said, "If I felt like I had the same values as those people, I would probably be a lot more inclined to get involved" (C1.4, 29:37). Likewise, a Marmalade Lane resident said that similar values make it "much easier to get a new initiative off the ground" (C2.5, 32:11). Thus, the tag IDENTITY overlooks the fact that demographics similarities are *socially* important for some people but *strategically* important for others.

Social and strategic differences like these were also evident in data around procurement and design process. Here, the interviews showed that a group with social aspirations could use the early stages of a co-design process to produce extensive formal spaces for socialising and friendship-forming, whereas the resulting cost and identity-forming that went with this process (S2.1, 08:17) appeared to exclude people with more strategic aims to do with adjustability and control. Yet, as the developer at Marmalade Lane points out, "nobody has yet explored how late in the design journey you can bring potential residents in and still get that intentionality" (P2.1, 15:33 & 16:04). In response, I made one final refinement to the codes to produce the nine sub-themes in Table 3 that have shaped the section headings that follow:

Table 3: *Refining the thematic codes into sub-themes*

COMMITMENT	or, perceptions of risk and permanence
INVESTMENT	or, attitudes to financial risk
DEMOGRAPHIC	or, social attitudes to rented tenure
FLOOR SPACE	or, perceptions of how much living space is enough
HOUSING MIX	or, ways of enabling people to move within a scheme
DENSITY	or, ways of adjusting within a fixed development area
LICENCE	or, the bundle of rights and rules
SHARED SPACE	or, formal shared spaces and amenities
OPPORTUNITIES	or, the informal demographic and spatial factors that affect co-management

The thematic map in Figure 11 (overleaf), charts the origins of these nine, tentative sub-themes in a series of refinements from the initial set of codes (or headings) into a smaller pool of candidate themes. This shows how the nine sub-themes were grouped into the three dimensions of adjustable housing that has gone on to form a key contribution of this research. I have found it helpful to visualise the relationship between these themes and my summary conclusions from the literature, with the capabilities approach being the lens through which both problems and solutions are evaluated.

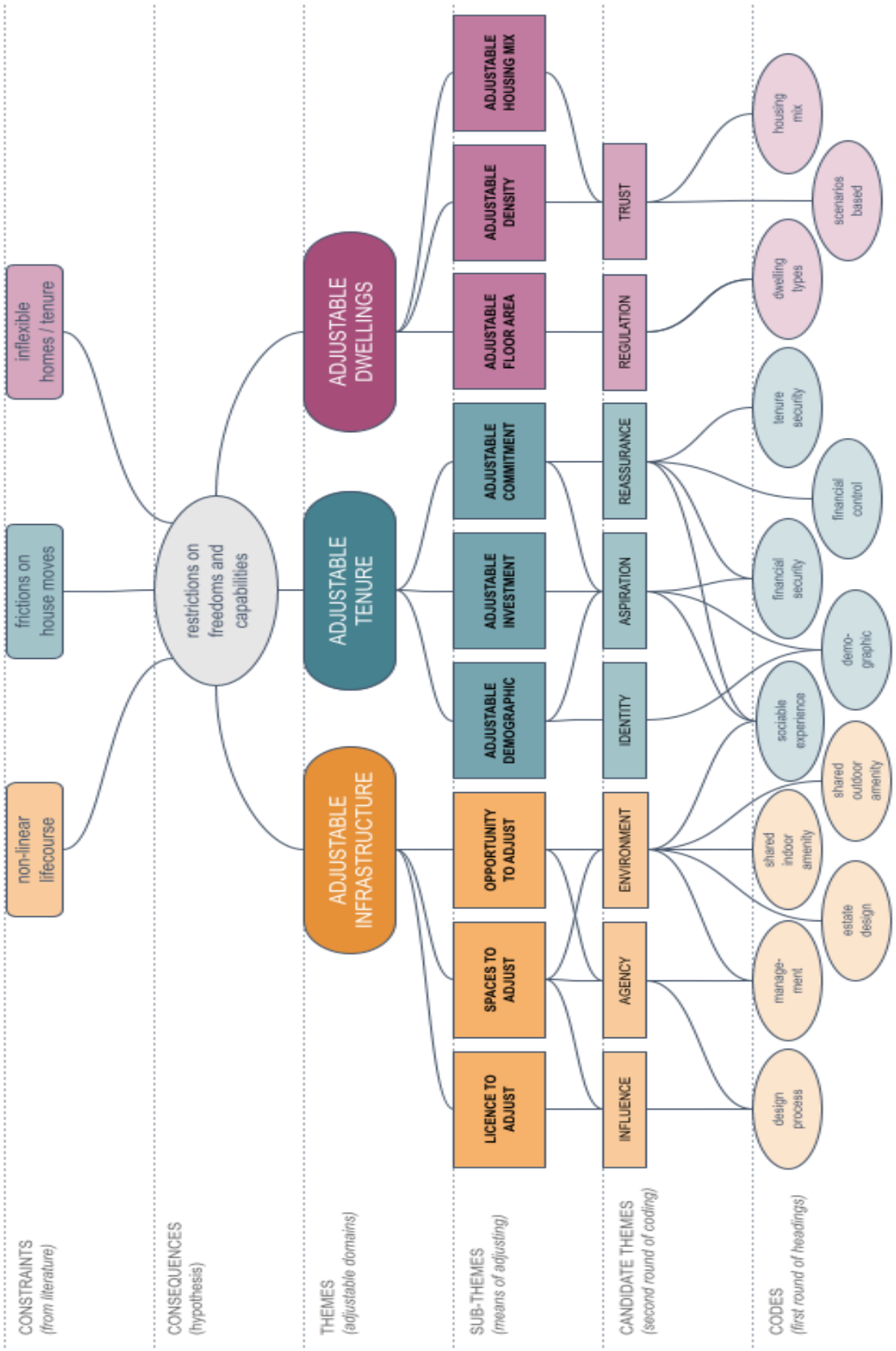


Figure 12: *A thematic map of the thesis, with the deductive process of literature-based hypothesis shown on the top two rows, and the inductive process of producing themes and candidate themes from the coded data shown on the bottom three rows (author).*

Conclusion

In Chapter 6 I have explained how my process of case study selection, interview design and thematic analysis has produced a system of nine thematic codes by which to organise the data. I found these to be more manageable when separated out under the three headings of adjustable tenure, adjustable dwellings and adjustable infrastructure. These are the three dimensions of adjustable housing as described in the introduction and the framework around which my findings chapters are organised. Thus, in Chapter 8 *(Adjustable tenure)* I consider more adjustable ways of holding secure tenure in a home in terms of COMMITMENT, INVESTMENT and DEMOGRAPHICS. Next, in Chapter 9 *(Adjustable dwellings)* I consider ways of adjusting private living spaces in terms of the FLOOR SPACE, HOUSING MIX and DENSITY. Lastly, in Chapter 10 *(Adjustable infrastructure)* I consider the bundle of rules, spaces and demographic factors that enable users to adjust the shared housing environment in terms of the LICENCE to make adjustments, the sorts of SHARED SPACES that may be adjusted, and the OPPORTUNITIES that people need to make decisions together. Before laying out my findings, however, Chapter 7 provides a descriptive overview of the case study housing models, in terms of their main characteristics and intent.

7. **Introduction to the case study models:** adjustability and design value from the supply-side perspective

In Chapter 7, I set out the case study histories from a supply-side perspective, in order to frame my chosen housing models around the developers' original intent and also to give a historical perspective. I have drawn from a combination of desktop research and some findings from the interviews with the supply-side stakeholders - that is, the investors, the landowners and developers, with consideration for ways of enhancing their customers' freedoms or capabilities. This helps to contextualise the developers' position with regards to ways of making adjustable housing more attractive to UK developers (Research Question 2), on the basis that risk-takers (i.e. developers or their investors) are acting reasonably given the market that they operate within. As such, this chapter helps to replace the caricature of the greedy developer with an understanding that as rational agents, risk takers are more likely to extend the budget to include elements that add intrinsic value[47] (such as making a scheme more adjustable) if they fear that their scheme might not sell quickly, easily or at a profitable price. The chapter first tells the story of such trade-offs at Marmalade Lane, and then, more briefly, in the Pocket Living model.

[47] In the financial literature, *intrinsic* refers to characteristics which are valuable for their own sake whereas *extrinsic* (or 'instrumental') value refers to characteristics which are valuable as a means for something else's sake, such as a reward or price uplift ('The Oxford Handbook of Value Theory', 2015, pp. 29–35). For example, an additional width to an access walkway may be *intrinsically* valuable to users because it could double as a balcony (C1.3, 07:03 & 08:25; C2.2, 40:46; C2.4, 17:44; C2.5, 16:23). However, if it adds complexity and cost to the development which might not be recoverable for developer - perhaps due to price constrained buyers or planning rules that only recognise private balconies as as meaningful outdoor space (P1.1, 22:07; P1.3, 10:53) - then the *extrinsic* value to the developer of paying more for wider walkways may be nil or even negative.

7.1. Marmalade Lane: from the supply-side perspective

The following section sets the scene by tracing the incentives behind the four supply-side stakeholders at Marmalade Lane: the investor, the landowner, the facilitator and the developer. Of these, the objectives of the landowner (see Section 7.1.2) and investor (see Section 7.1.4) are gathered from secondary sources - namely, the developer but also the *enablers*. The enablers (see Section 7.1.3) are the consultants who acted on behalf of the landowner to deliver the conceptual feasibility study for the project and thereafter managed the processes of briefing, resident consultation, outline design and ownership structure, up to the point of tender (S2.1, 04:18). It should be emphasised that being an introduction to the models from the *risk-takers*' perspective, the voice of the consumer is notably absent. This is because the original members of the Marmalade Lane community were "fully protected" and therefore took no more risk than to put down deposits with the assurance that if the developer didn't deliver, they would get their money back (P2.1, 41:12). First, however, Section 7.1.1 introduces the scheme at Marmalade Lane in terms of its design, its tenure and its governance.

7.1.1. An introduction to Marmalade Lane

Marmalade Lane is the UK's newest cohousing scheme, completed in 2019 by 'profit-with-purpose' developer, Town (Grylls, 2019; Town, 2019c). It comprises forty-two, mixed-generational dwellings, which range from 1-bedroom flats (n=7), to 1-2-bedroom flats (n=14), to 3-4 bed townhouses (n=21), of which ten of the 2-bed flats and all of the townhouses are designed with some flexibility around the layout (TOWNhus, 2015a). An option to customise three of the house types means there are twenty-seven different internal layout options from open plan living through to more compartmentalised layouts (Wainwright, 2019). These are surrounded by shared facilities including a common house

with guest rooms, work space, and shared laundry, lounge, play and meeting spaces and a kitchen with communal dining facilities (Savills, 2019; Trivselhus, 2019). Elsewhere on the site is a small gym, shared storage, a workshop, communal waste and recycling stores, bike parking, a shared surface, mews-style street and a large, shared garden, around which the homes are gathered (Savills, 2020).

Figure 13: *The site layout at Marmalade Lane, with the shared garden overlooked by the 'Common House' (turquoise) and apartment building, and the shared street visible between the parallel rows of townhouses (Mole Architects).*

The £1.3m final construction value (Town, 2019a) was 100% equity funded by a single member of its supply chain and was steered by a portion of the future resident group (Trivselhus, 2019) that came together in 2013 around values of consensus-led decision-making, collective facilities, shared management and sustainability (Cambridge Cohousing Ltd, 2018a). Alongside the dominant sales message around "an eco-friendly life" and "sustainable living" (Savills, 2019), the design is driven by the idea that a different way of living could simultaneously support families and older households, especially in the absence of nearby family members ('Interview with Miranda at K1 Cohousing', 2015). Following

feasibility design and consultation work, this concept was developed through an open, two-stage, competitive tender process (Trivselhus, 2019). The winning team was appointed in July 2015 and the project received planning approval from South Cambridgeshire District Council in early 2016, going onto site later that year (Trivselhus, 2019; UK Cohousing Network, 2020).

Although there was a planning condition to provide two affordable properties (South Cambridgeshire District Council, 2020, para. 1.1 of Schedule), the decision to make the scheme 100% private sale meant that developer paid the Council to provide affordable housing elsewhere (P2.1, 1648 & C2.4, 08:08-08:18). Aside from the government's Help to Buy equity loan scheme - as advertised on the promotional material (Savills, 2020) - there is no other affordability offer. Nevertheless, the homes are significantly less expensive than newbuild equivalents nearby (Wainwright, 2019). For pre-buyers, there was a reservation cost of around £40,000 that included a 10% deposit (c£37,300 using a 2020 estimated average sale price (Zoopla, 2020)), a reservation fee (£1000), a one-off fee to furnish and equip the common house (£1000), the first year of service charge in advance (£350 - £420 per annum), a membership fee (£250), and leasehold insurance for the flats only (£400 per annum) (Cambridge Cohousing Ltd, 2018b; Trivselhus, 2020).

In return, each household has the right to one directorship of the freeholder company, *Cambridge Cohousing Ltd*, through which they acquire joint ownership of the common parts and the right to set budgets, make management decisions and agree service charges (Savills, 2019, p. 4; Trivselhus, 2020). Members are expected to participate in the management of different aspects of cohousing life through one of several committees and working groups (Trivselhus, 2019). At the outset, the community ranged from ages nine months to 73 years, (Wainwright, 2019) and the current average age of heads of households (or those registered as directors) is 51 (*Companies House*, 2020).

Figure 14: *The main street space at Marmalade Lane, showing the townhouses (author)*

7.1.2. What the landowners wanted

At a simple level, the landowner's interests in transferring the land into private ownership follows an increasingly familiar pattern of 'denationalising' state property (Layard, 2019, p. 4). Indeed, the developer described having "been a bit uncomfortable with the idea that you might be able to wall off access to what are effectively public resources" (i.e. land) (P2.1, 16:48). However, the landowner, Cambridge City Council (CCC), offset these qualms by committing to deliver "a particular kind of environment" and thereby accepted all the additional costs, administration and deferred payments that this would entail (P2.1, 05:24). Indeed the findings suggest that CCC subscribed to a view - shared by a small number of landowners in the UK - that they would rather have just enough of a return with some *certainty* than the most possible with some risk (P2.1, 33:03). Nevertheless, the feasibility consultant believed that in hindsight, a better match for the resident group that eventually formed would have been a

private owner with philanthropic intentions and a particular legacy interest in seeing some good come from their land (S2.1, 1:01:04).

One reason for this difference between the goals of the group and those of the landowner is that for all their ambition, the landowner's priority was ultimately to 'de-risk' the site. This is a well known problem - especially on urban or brownfields sites - because many have to overcome significant physical, planning or title issues before they become feasible propositions and many owners will withhold their land for these reasons (Sayce *et al.*, 2017, p. 57). In the case of Marmalade Lane, however, the landowner needed to dispose of the site but could only do so by overcoming the problem that the expected sale price was based on a plan which did not match what was on the site itself (S2.1, 49:19). This was because the residual value of the site at the time - derived from projected income, minus costs and profit (RICS, 2019, pp. 24–25) - had been based on a scheme that placed car parking in the centre but overlooked some oak trees at the same location but with tree preservation orders (S2.1, 49:19). The error only became apparent, however, when the intended buyer - a housebuilder - withdrew from the sale in the wake of the 2008 financial crisis (Trivselhus, 2019). This left the landowner (CCC) in possession of a developable site on the northern fringe of a growing city, but with neither a viable scheme nor a developer willing to take the risk of buying it (Grylls, 2019, p. 21).

The objective of de-risking the site had added urgency because the post-2008 financial and political environment had forced CCC to find ways of generating capital or revenue income from their substantial land portfolio (S2.1, 58:03). CCC's solution was to bring the site forward themselves (S2.1, 26:23) and in so doing, "made a very good capital receipt on it" - better even than what the offer they had accepted in 2008 (S2.1, 26:23). As the feasibility consultants observed, "bluntly, any sensible landowner, who had an offer, which was as good or better than it was a number of years previously, would probably stay with it" (S2.1, 26:23). However, CCC knew, by the time that they did the deal, that they could

probably have got 10-15% more for the site, just by selling it on the open market, because by the time the replacement scheme had been designed and approved, the sort of crash that originally gave rise to the opportunity to develop the site differently had long gone and "the market was flying again" (P2.1, 33:03). Indeed, the deal - as agreed in 2011 - represented "a pretty big chunk of land at a very, very, very, very, low price" (C2.3, 31:11).

This history of the land transaction raises the question of why CCC would continue to deliver the housing themselves, having de-risked the site to the point of regaining the pre-2008 land value. One answer is that CCC wanted "to deliver the scheme in a non-traditional way" (S2.1, 00:34). However, there is nothing in the findings to suggest that 'non-traditional' would apply to the longer-term adjustability of the housing. Rather, CCC's apparent intent was to bring all parties to the point of establishing the true development value by means of "a fixed set of assumptions around what the capacity of the site is, what the sales value is likely to be, what the fix of tenures is likely to be… [and] the build costs" (P2.1, 33:03).

To secure this price certainty, CCC accepted that they - like the developer - would make "a bit less money" (P2.1, 16:48). They also had to retain ownership of the land until an outline planning approval had been achieved (Cambridge Architectural Research, no date). This meant that CCC continued to own the land whilst an open, two-stage, competitive tender process took place to select a development team (Trivselhus, 2019). Thereafter, once the contract had been awarded, CCC agreed to defer the land payment until the point of sale (Trivselhus, 2019). The mechanism for doing this was what the Dutch would call a 'building group' model (P2.1, 05:24) where a landowner and developer starts the process but thereafter *enables* a non-speculative design and briefing journey that involves potential residents by saying, "We've got a site - who wants to form a group around that site?"' (P2.1, 05:24).

Compared to the typically imbalanced process of land value appraisal (see Section 4.2) that leaves the seller in a weakened position (Crosby and Wyatt, 2019, pp. 378–379), CCC's approach to de-risking the site prioritised quality over price, by asking bidders to demonstrate their design ideas and delivery credentials and only allowing them to reveal their financial offers once they had demonstrated that they could properly translate the residents' brief (Trivselhus, 2019). This had the effect of helping the developer to manage their cash flow position, thereby lowering their risk during development (Trivselhus, 2019). However, whilst a fixed land price is known to improve the longer-term quality of housing outcomes (Muellbauer, 2018, p. R24), CCC's strategy does not appear to have been directed towards design value or the production of more adjustable housing outcomes. Rather, their deferral of the land payment appears to have been to ensure that the scheme was delivered and to the agreed standard (Trivselhus, 2019), in case it should stall - as many schemes do - for reasons of cost, or incase of a speculative, 'gaming strategy' where a buyer withholds construction in anticipation of more favourable market or planning negotiation to come (e.g. Crosby and Wyatt, 2019). This underlying objective also helps to explain CCC's shift away from their original intention to do a self-build scheme where outcomes can vary and take longer to complete than a developer-led cohousing scheme, especially where they have to buy the land in the first place (S2.1, 00:34). Instead, CCC did not retain the freehold or a longer-term interest in the site any longer than it took to develop the site but sold the freehold to *Cambridge Cohousing Ltd* - the company who would, in turn, go on to grant each household a long lease (Trivselhus, 2019; UK Cohousing Network, 2020).

Nevertheless, the landowner's process of de-risking the site by retaining land title for longer, deferring payments and ensuring would-be residents had a say, did have three knock-on effects on the potential adjustability of the scheme. The first was that unlike some resident-funded self-build developments, CCC's deferred payments and procurement process ensured that each buyer got to

the point of completion, without having spent all their savings on buying the land (Wainwright, 2019 quoting CCC Councillor Rod Cantrill). The second was that by using the exceptional nature of the development to negotiate away the initial requirement for 40% affordable housing[48] (Wainwright, 2019), not only has the land price "paid for a hell of a lot of social housing elsewhere" (P2.1, 16:48), but the single tenure, private sale outcome has had a positive effect on the management of shared amenities, as will be shown later (S2.1, 30:36 & C2.3-6). The third advantage of the consultation was that densities were increased beyond what would have been possible in a speculative scheme, because future residents were able to make "some quite conscious decisions being made about space and what you really need" (P2.1, 23:20, 34:33).

Despite the landowner's aims of land disposal and seeing out a satisfactory standard of completion, however, it was not the landowner who drove the process towards these outcomes *per se*. Rather, the briefing and resident engagement processes were driven entirely by an independent consultant - the *facilitator* - working on CCC's behalf. It is to this enabling stakeholder that I turn next.

7.1.3. What the enablers wanted

Stakeholders in the early stages of the Marmalade Lane development described CCC as a landowner who wanted to "deliver the scheme in a non-traditional way" (S2.1, 00:34). Yet, it was in fact an independent consultant team - described here as the 'enabler' - who approached the Council in the first place, and thereafter pulled together a scope to "test their resolve about trying to do something differently" (S2.1, 00:34). Indeed, the fieldwork shows that the project was effectively consultant team-led rather than landowner-led, because it was

[48] This negotiated settlement around affordable housing payments means there are no designated affordable homes on the site - and therefore no involvement from the local council or registered social landlord - but instead, the land receipt paid to CCC "has paid for a hell of a lot of social housing elsewhere" (P2.1, 16:48).

the enabler who marketed it as an idea in the first place, before finding out who was interested (S2.1, 20:03).

The enablers' scope stretched from this first approach to the landowner, through to their appointment to the briefing facilitator role and thereafter, to their responsibility for the design work up to the point of tender (S2.1, 04:18). This continuity and influence was assured because part their initial scope of services was to apply for funding from the Homes and Communities Agency (HCA - now 'Homes England), from which they were able to undertake a more detailed stakeholder engagement service in 2013 (Cambridge Architectural Research, no date; Cambridge Cohousing Ltd, 2018c). The scope of this appointment included the marketing needed to promote the cohousing concept, recruit a 'foundation group' and thereafter, facilitate a series of exploratory workshops designed to turn the concept into a brief and the brief into an outline planning scheme around which a development company, a tender process and a legal and governance framework could be assembled (Instinctively Green, viewed 2020).

This foundation group became the informal cohousing group, Cambridge Cohousing, and was registered as a company limited by guarantee in 2014 (UK Cohousing Network, 2020). Thus, despite all the "mythology" that Cambridge Cohousing existed in one form or another for twenty years and had an eighteen year journey to achieve their dream, is not actually true (P2.1, 15:33). However, the enablers' window of opportunity for leveraging their authority lasted only around nine-months, being the period over which the project had funding to assemble a group who would be interested in procuring the project (S2.1, 02:45 & 04:18). Thereafter, it was the competitive tender process that finally ended the window for any significant resident engagement, being the point where the winning developer could progress the scheme towards full planning permission (P2.2, 09:02).

7.1.4. What the investor wanted

To understand the history of the Marmalade Lane, it is insightful to understand *why* any investor would want to participate financially in a non-standard, co-managed and notionally co-produced scheme with shared amenities. After all, the literature shows that such idiosyncratic schemes are inherently risky investments (e.g. Scanlon and Arrigoitia, 2015, pp. 108–114). Indeed, as the developer admits, "if Covid had come along, we would have been absolutely up a creek without a paddle on probably half of it" (P2.1, 41:12). One explanation is that the housing proposition at Marmalade Lane is a niche product, with little by way of competition in the wider market. This gave the investors the opportunity to extend their market into "that sweet spot around co-production", in which a small but affluent number of buyers exists on a "continuum between groups self-producing their own homes through to someone producing it for them" (P2.1, 12:08). Nevertheless, the developer at Marmalade Lane believes there is untapped potential in this niche to attract development finance at a lower cost, if it can be demonstrated that this is a sector in which doing good can also make new housing more viable to produce (P2.1, 46:22). In other words, some investors associate degrees of co-production with social value and may be prepared to discount the cost of financing a project accordingly.

In Town's case, the first objective has been to expand the nascent community-led housing sector (Town, 2019c) by showing that there is *depth* in what was inevitably a narrow pool of relatively specialist demand (P2.1, 34:33). To do this, a grant from the Housing and Communities Agency (HCA, now Homes England) was used to fund the initial feasibility study at Marmalade Lane as a way of testing the extent of latent demand for a scheme based on cohousing principles (Cambridge Architectural Research, no date; Cambridge Cohousing Ltd, 2018c). It was only thereafter, once some of the risk had been taken out of the project through the feasibility work, that the developer, Town entered into a contract to deliver the project. This was done by means of a joint

venture investment agreement (JV) with timber panel home manufacturer, *Trivselhus UK*, by way of a special purpose vehicle (SPV) - *TOWNhus* - to which Town was effectively a consultant, alongside *Mole Architects* as lead designer (Trivselhus, 2019; UK Cohousing Network, 2020). Trivselhus fully financed the development as 100% equity partner (P2.1, 38:04).

This SPV relationship obliged the developer and design team to use Trivselhus' own, off-site manufactured panel system (Trivselhus, 2019; Town, 2020). As will be shown, this had the effect of tying the scheme to a construction approach which had consequences for future adjustability. Town, however, found this equity relationship to have been helpful in de-risking the scheme because it meant there was "a slightly removed investor, and then a management team working on their behalf" (P2.1, 38:04). As a result, Town considered the delivery model to have been sustainable because their role - and that of the investor - were clear and having little by way of their own balance sheet, they had "didn't have financial skin in the game" (P2.1, 38:04). Further, with the investment risk being managed towards a single, profitable sale, the equity arrangement meant Town was able to innovate more than other, more speculative developers who operate under the "Housebuilder Plc model which puts shareholders' capital… into projects then gets it out again within a year" (P2.1, 38:04). Thus, at Marmalade Lane, there was no need to sustain shareholder confidence by quarterly reporting, as is otherwise normal practice for volume housebuilders whose model is to "build-one-sell-one-build-one sell-one, to keep margins high, keep volume down, never innovate, never do anything different" (P2.1, 38:04).

7.1.5. What the developer wanted

Town is neither a buyer nor a seller of property but instead provides services to enable *others* to develop building projects. They do this by consulting as a development manager, with expertise in land acquisition, planning and finance (Town, 2019c). Importantly, however, Town do not take the risk of buying and

selling land with their own money (P2.1, 12:08) and therefore their model is distinctly different from a speculative, “baseline group of landowners who will… just appoint Savills and flog it to a house builder beginning with B” (P2.1, 31.39 & 36:22). It is also distinctly different from entirely *non*-speculative models such as cohousing, in which intentional communities are defined as being those that are created *by* their residents (UK Cohousing Network, 2021). Instead, Town - on behalf of their investors - secures land at a higher price than their speculative competitors and thereafter, spends more money on the basis that their extra investment will be recovered by adding more design value than their competitors (P2.1, 33:03). They do this by hiring “a proper architect” who they hope will build a “better” scheme (P2.1, 34:33), but also by offering an enabled cohousing service and by giving people opportunities to customise some elements of their new home (Cambridge Architectural Research, no date; Trivselhus, 2019).

Through these enhancements - better design and semi-speculative custombuild - Town aims to attract “people who really, really want to do this” and who are willing to pay a premium to get it, albeit being drawn from a small and specialist pool of buyers (P2.1, 34:33). However, by taking control of the brief and positioning the level of speculation and engagement in this way, Town have no option but to “*own* that control” by accepting that the profits will flow to the equity investor whilst they, as a consultant, will only get paid if that control gives rise to the sort of outcomes that they say it will (P2.1, 38:04). The risk is that even having a steering group of potential buyers, there is no guarantee of easy sales or insulation against market movements and therefore “you're going to be extremely fortunate if you manage to get and keep the right number of people for the right number of dwellings from planning, right the way through” (P2.1, 07:06). Thus, Town - as development consultant - are effectively on commission, because they charge only enough “to keep the lights on” during the development process and then take a profit when the investor does,and even then, only when they've reached a certain threshold (P2.1, 38:04).

It is on this basis of converting design value into higher prices that Town claims to be a “profit with purpose company” (Town, 2019c), describing adjustability as the ability to “accommodate many different household types and lifestyles, and *adapt* over generations to meet changing needs” (Town, 2019b). However, this “inherent *adaptability*” is not defined in any more detail than as houses that are, “light, airy and carefully laid out” (Town, 2019b) suggests an underlying difficulty around producing a definition of adjustability that is sufficiently specific or which others could replicate. This highlights the gap in industry knowledge to which this research aims to contribute through the findings that follow.

7.2. Pocket Living: from the supply-side perspective

The following section traces the incentives at play for the developer, Pocket Living. Once again, this overview is from the *risk-takers'* perspective and therefore the voices of the residents are absent. This is because - unlike at least some of the residents at Marmalade Lane - Pocket Living buyers had no involvement in the design of their homes or the development layout. First, Section 7.2.1 introduces the Pocket Living model in terms of its design approach, the demographic of its buyers, its tenure, its social objectives and its governance, showing how the model has evolved over time to take on some similarities with cohousing. Section 7.2.2 describes three example schemes in more detail. Finally, Section 7.2.3 sets out the developers incentives in relation to design value and adjustability.

7.2.1. An introduction to the Pocket Living model

Pocket Living's mission is to produce "well designed" homes, whose small size helps "city makers at all life stages… to get a foot on the property ladder" (Pocket Living, 2020b). To deliver on this aim, their standard product is a compact, 37m2 one-bedroom, one-person flat that meets space-standards[49], being arranged into three rooms (bedroom, wet room and an open plan living/dining/kitchen), where the relative lack of private living space is complemented by communal amenity spaces, ostensibly to "encourage a sense of community" (*Pocket Design*, 2020). These amenities include shared outdoor spaces in lieu of costly private balconies, thus contributing to the affordability model (P1.1, 22:07). The corollary of these trade-offs between space and price - and between shared and private space - means that Pocket Living can offer new apartments at a 20% discount relative to the local market (Pocket Living, 2020b).

Figure 15: *The Pocket Living model, illustrated by the developer's standard 37m2 1-bed/1-person flat type (credit: Pocket Living) and section through Pocket's development at Varcoe Road, Southwark, showing these flats interspersed with a co-working space on the second floor, a shared living room above and a shared roof terrace on the top floors (credit MacCreanor Lavington architects).*

[49] For comparison, a 1-bed/2-person flat is 50m2, a 2b/3p is 61m2 and a 2b/4p is 70m2 (Department for Levelling Up, Housing and Communities, 2015, p. 5).

To ensure that this discount is not passed on to buy-to-let investors, Pocket requires its buyers to live or work locally and to earn less than the Mayor of London's £90,000 income threshold for affordable housing (Government Digital Service, 2020; Pocket Living, 2020c). It also requires its customers to be first time buyers, although in practice, this only obliges buyers to first sell any property that they already own (Pocket Living, 2020d). Thus, owners of Pocket flats can perhaps more accurately be described as people who are priced out of much of the open market but earn too much to qualify for social housing, yet prefer to own 100% of their home, despite being eligible for shared ownership (Transport for London, October 15, 2018; Pocket Living, 2018b). Indeed, Pocket actively states that "we promote homeownership, not shared ownership" (Pocket Living, 2019, p. 28) for buyers whose average household income was £42,500 even in 2018 (Transport for London, October 15, 2018). This confirms perceptions elsewhere in the industry that "nobody who is living in Pocket is hard up" (P2.1, 25:18) and suggests that Pocket buyers may in fact form their price-space trade-offs around preferences rather than affordability alone.

This bundle of trade-offs appears to be specific to the demographic of Pocket Living buyers. These are typically single people (90%), without families, who are entering owner occupation after an average of eight years in rented accommodation or house shares (P1.2, 21:51, 23.07.20). At an average age of 32 (P1.2, 23.07.20), these buyers broadly match the average age of first-time buyers nationally, but are five years younger than the London average of 37 (English Housing Survey, 2020, p. 13) suggest that the model is successful in its aim of attracting first time buyers earlier than they might otherwise have chosen to enter owner occupation.

However, the developer reports that the average age conceals a range that in fact expands out to about 25 to 45 (P1.2, 25:45). Within this age demographic in London, Pocket's own data shows that 60% will be considering moving house in the coming year but would prefer to move *within* London, whilst at the upper

ends (age 40-45) their customers will have a noticeably higher demand for some enhanced sense of community (Pocket Living, 2021, pp. 26, 29–30). Meanwhile, post-occupancy evaluations of Pocket Living schemes indicate demand for shared amenities to help people absorb any spillover of normally private housing needs. These include extra storage, furniture in communal areas, workshop space for bike repair and shared tools, as well as strong demand (52%) for communal workspace from owners who reported a weekly need to work from home, even before the Covid-19 pandemic (XCO2, 2018).

These examples suggest that within this market segment, there is a commercial opportunity to close the gap between what people want and what they actually choose - especially where research has shown there to be a lag between people's changing housing aspirations and what developers actually build (Crawford and McKee, 2018, p. 194; Preece *et al.*, 2020, p. 101). It is therefore interesting to map the ways in which Pocket Living has responded to changes in housing aspirations over the model's fourteen year evolution. Table 4 (below) shows the 27 completed schemes to date, all in London, revealing a trend towards social and shared goods (Pocket Living, 2022a). A row showing the characteristics of Marmalade Lane, reveals how much closer the Pocket model has shifted towards cohousing principles[50] but without the level of design participation with which cohousing is normally associated.

[50] It should be noted that cohousing and the Pocket Living model are distinctly different from 'co-living', the latter being a rented and fully-managed model where people merely *partake* of the amenities laid on by others (as Schmid *et al.*, 2019, pp. 21–22).

Project Details			Assignable goods									Other 'Club Goods'					Environmental Goods									Social Goods										Control Goods						
			All tenures	Afford-able			Open Market										Low carbon, sustainable living									'Communal hubs' (or shared *outdoor* spaces)			'Common House' (or shared *indoor* amenities)									Co-managed			Customised		Tenure
Project Name	Post code	Completion date	Total dwellings	32m2 (studio)	38m2 (1 bed)	2 bed (size TBC)	1 beds (size TBC)	47-61m2 (1-bed)	66-75m2 (2 bed or 1-2 bed)	80-128m2 (2-5 bed houses)	Managing agent	Parcel store (for over-sized deliveries)	Lockers (e.g. for cycling, etc)	Car parking / club car(s)	Lockable storage	Workshop / Bike repair station	Cycle storage	Thermal efficiency	Renewable energy production	Good daylight (high ceilings & winodws)	Low maintenance costs	Sustainable materials	Allotment / growing areas	Child-friendly / car-free street	Integration of social spaces with circulation	Garden / courtyard / roof terrace	Guest room(s)	Playroom	Workspace / flexible meeting room	Kitchen / dining / events space	Gym / 'wellness room'	Residents' lounge or 'garden room'	Laundry / drying space	Information board	Residents' Man. Comm.	Resident-owned freehold company	Households consulted pre-planning (%)	Custom-built homes (%)	Adaptable internal layouts (%)	Owner occupation
Osier Way, Leyton	E10		196		176	34					1						1	1		1	1	1			?	3	2			13				1						1
Forest Road, Walthamstow	E17		90		90						1						1	1		1	1	1				3			?			?		1						1
Gardner Close, Redbridge	E11		20		20						1						1	1		1	1	1	1			1								1						1
Mapleton Crescent, Wandsworth	SW18	2020	89		53		36				1	1	1			1	1	1		1	1	1			1	1			1			1	1	1						1
West Green Place, Haringey	N17	2020	126		93	5			12	16	1						1	1		1	1	1				2								1						1
Harbard Close, Barking & Dagenham	IG11	2020	78		78						1						1	1		1	1	1	1			1			1			1		1						1
Bolo Lane, Ealing	W4	2020	112		84		28				1	1				2	1			1	1	1				2			2			1		1						1
Addiscombe Grove, Croydon	CR0	2020	112		112						1						1	1		1	1	1				3			1		1	1		1						1
Varcoe Road, Southwark	SE16	2019	57		57						1						1	1		1	1	1			1	2			1	1		1		1						1
Marmalade Lane, Cambridge	CB4	2018	42					11	10	21				1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	79%	79%	50%	1
Gainsford Road, Waltham Forest	E17	2018	45		45						1						1	1		1	1	1				1								1						1
Cowleaze Road, Kingston	KT2	2018	26		21		5				1						1	1		1	1	1			1	3								1						1
Arklow Road, Lewisham	SE14	2018	44		30		14				1						1	1		1	1	1	1		1	2				1		1		1	1					1
Sail Street & Juxton Street, Lambeth	SE11	2017	70		70						1						1	1		1	1	1				2								1						1
Rosina Street, Hackney	E9	2017	41		39		2				1						2	1		1	1	1				1								1						1
Wynne Road, Brixton	NW9	2017	25		25						1						1	1		1	1	1	1			1								1						1
Willingham Terrace, Camden	NW5	2016	18		18						1			1			1	1		1	1	1	1			1								1						1
Marischal Road, Lewisham	SE13	2016	26		25		1				1						1	1		1	1	1				3								1						1
Mountearl, Streatham	SW16	2016	32		32						1						1	1		1	1	1				1								1						1
Western Road, Southall	UB2	2016	36		36						1							1		1	1	1				1								1						1
Oak Grove, Cricklewood	NW2	2015	33		30		3				1							1		1	1	1				1								1						1
Marcon Place, Hackney	E8	2015	33	2	28		3				1						1	1		1	1	1				1								1						1
Apex Court, Ham. & Fulham	W12	2014	30		24		6				1						1	1		1	1	1	1			1								1						1
Star Road, Ham. & Fulham	W12	2012	18	4	14						1						1	1		1	1	1				1								1						1
Fermoy Road, Westminster	W9	2012	32		32						1							1		1	1	1	1			1								1						1
Bath Road, Hounslow	TW4	2009	19		19						1							1		1	1	1				1								1						1
Sudbury Heights, Ealing	UB6	2009	39		39						1							1		1	1	1												1						1
Weeding Road, Camden	NW5	2008	22		22						1						1	1		1	1	1				2								1						1

Table 4: Schedule of shared attributes across all Pocket Living schemes[51]

The pattern in the schemes shows an increasing prevalence of workspaces since 2018, as well as examples of amenities that cohousing schemes might call a 'common house', containing workshops, mixed-use spaces, kitchen/dining facilities and growing space (Pocket Living, 2022a). The presence of these raises the question of whether they exist for social reasons or to enhance people's 'spillover' needs by allowing shared spaces to be adapted in ways that support and augment the utility of the compact living spaces provided by private, Pocket flats.

[51] Table 4 shows all of Pocket Living's schemes to date, in chronological order from the newest to the oldest, with Marmalade Lane in brown for comparison. This reveals a pattern that more recent schemes have included yet more shared characteristics, bringing the Pocket model closer to cohousing in terms of amenities.

7.2.2. Three built examples of the Pocket Living model

From the list of Pocket Living schemes, I explored three examples during the fieldwork. The first is *Marcon Place* in Hackney, East London (E8) which I discussed with residents and the architect. The second is *Varcoe Road* in Southwark, South London (SE16) which I discussed with the developer (though, regrettably, not the residents). The third is *Osier Way*, in Leyton, East London (E10) which, though not yet complete, was discussed with the architect and the developer. These represent three stages of evolution in the Pocket LIving model which reveal an increasing proliferation of shared spaces.

Completed in June 2015, Marcon Place is the seventh of Pocket Living's completed schemes. Comprising 30 compact flats (28no 1-bed flats averaging c38m2 and 2no studios at 32m2) and three open market homes (2no 2-bed and 1no 3-bed), this 33 flat scheme is arranged over four floors (Pocket Living, 2015). Its main shared space is an entrance courtyard with planting, bike parking and built-in seating (Pocket Living, 2015). The total construction value was £3.1m and whilst the design priorities were affordability and density, this did not prevent the architects from pursuing a design ethos around natural materials, a human scale and a generosity of communal outdoor spaces (Waugh Thistleton Architects, no date).

These characteristics are not unusual amongst UK housing developments, however the scheme's relevance to the thesis is not only its compact flats but the ways in which the design anticipates community, co-management and spillover from private to shared spaces. Aside from the shared courtyard garden, this has been largely delivered through wide, open stairways, deep external walkways and wooden screen cladding to control daylight, privacy and views across the courtyard, so that walkways become both places to meet or see neighbours, but also shared, semi-private balconies (Pocket Living, 2022a). These examples of attempts to add design value exist at the intermediate or mesoscale of the development as a whole, and offer devices through which

people can adjust their living environment by means of occupation (with chairs and plants), spillover (for outdoor dining or drying clothes) and co-management (by means of the degree of familiarisation that breeds informal decision-making between neighbours).

Comprising 57no 1-bed flats over 6-8 storeys, my second Pocket case study - Varcoe Road (completed 2020) - is notable because of its extensive, 400m2 of communal spaces. These include a co-working space, a ‘sun room’ for socialising, exercising and other user-defined activities, and communal terraces designed to “encourage togetherness” and to allow residents to socialise outside their private apartments (Pocket Living, 2019, p. 32; Wilson, 2020). This makes it Pocket Living's most extensively communal *built* development and the closest spatial example of a scheme with a high degree of cohousing attributes.

With its 196 flats in five blocks of 6-13 storeys, my third Pocket case study - Osier Way - is a completely different scale to either Marcon Place or Varcoe Road. Nevertheless, the architect organised the scheme to encourage a sense of ownership, with one “local” shared space apportioned to approximately every eighteen flats (P1.3, 13:29). These include thirteen internal communal rooms for home working, socialising, ‘wellness’, making, exercise and other, user-defined activities, as well as three rooftop terraces in lieu of private balconies on the 1-bed flats (148no) that make up the majority of the scheme (LB Waltham Forest, 2020, p. 36). Thus, although not yet complete, its inclusion in the research is primarily to facilitate a discussion around the motivations behind these extensive shared spaces - there being more of these than in any other Pocket Living development to date. Osier Way is also useful as the first example of a scheme where compact 2-bed flats (41no) and 3-bed flats (7no) come with the same discount and eligibility rules as the standard 1-beds (LB Waltham Forest, 2020, p. 36) but give priority to families (Pocket Living, 2020d). These enhancements of both private and shared spaces - as well as around wider demographic attributes - raise the question of whether this scheme was a

design response to changing housing aspirations or simply the result of a planning condition.

7.2.3. What the developer wanted

Pocket Living identifies people's decision to buy a home as an important life stage transition and on this basis, its social aim is to protect the stability of London's communities by providing an affordable way for a group they call *'city makers'* to remain in the area they either live or work within (Pocket Living, 2020a, p. 7). A central objective of the model is therefore to extend the range of the housing stock by means of its core, "single tenure, single-size" flat type (P1.1, 19:45; P1.2, 13:56), whilst distributing the opportunity of homeownership using underutilised, infill plots across London (Pocket Living, 2022b). Smaller plots, however, mean fees and finance costs that are proportionally higher, as well as a planning process which is typically longer than for the 2000+ unit regeneration sites that volume housebuilders prefer (P1.1, 11:26). Further, such small sites attract more competition and are therefore harder to acquire and develop viably, especially whilst ring-fencing a 20% discount (P1.1, 07:39).

Such planning risks and land price competition on smaller plots are known to make developers of affordable or discounted housing more reliant on the power and assets of local authorities (Sayce *et al.*, 2017, pp. 57–58). Thus, part of Pocket Living's development model has been to attract grants in return for maintaining a 20% discount or delivering on funders' requirements to undertake innovations such as using off-site manufactured construction systems. Examples of these are repayable grants from 2017 of £33.5m from Homes England (in partnership with the Greater London Assembly and Lloyds Bank Commercial banking), and £25m from the Mayor (of London) Innovation Fund (Pocket Living, 2018a). Likewise, in 2018, Transport for London (TfL) allowed Pocket Living to develop certain sites on TfL land, but on the condition that it delivers housing that is 100% affordable (Transport for London, October 15,

2018; Pocket Living, 2018c). Nevertheless, Pocket investors are exposed to development and market risks because it trades as a buyer and seller of its own real estate and is 70 percent owned by private equity (*Companies House*, 2019).

These risks mean that design value is key - especially layout, daylight and feel of the space - because sales of Pocket Living flats have to compete with the local resale market where bigger homes can also be cheaper (P1.2, 08:09). One important aspect of this differentiation is the offer to buyers of a chance to co-manage the building through participation in the *Residents' Management Company* and the power to change the managing agent by resident consensus (P1.2, 19:19). Further, up to two owners from each scheme can become directors of the company so that residents' views can be resolved through a Managing Agent who has ultimate responsibility for shared areas, insurance and resale queries (Pocket Living, 2020b). Unusually, however, Pocket maintains a close relationship with their managing agent because it has a vested interest in the residents' wellbeing and how this reflects upon their brand, to the extent that the agent effectively *represents* Pocket (P1.2, 19:19).

The adjustability of Pocket schemes is, however, seemingly affected by the developer's control over the completed schemes. Firstly, this occurs upon completion, when the freehold of each development is typically sold to a third party, with the effect that the residents' power to make significant adjustments (e.g. to the ownership, tenure, spatial and management arrangements) is at the discretion of this third party (P1.2, 19:19). Thereafter, the residents' loss of control extends to resales, where rules prevent homes from being sold within a year of purchase (Pocket Living, 2020d) and ensure that the same eligibility criteria are applied from one owner to the next, so that flats continue to be discounted in perpetuity (P1.2, 25.03.21). Furthermore - and despite Pocket's original social aim of allowing people to stay in their community - the developer's brief accepts that there is a degree of obsolescence that begins at an inevitable "moving out of London stage", as and when owners form a couple

or start to plan a family (P1.2, 10:04 & 21:51). These restrictions and inevitabilities may be explained, however, by the overarching premise of the Pocket Living model. That is, to give people ways of adapting to future needs “because the need is now” (P1.1, 25:14).

Conclusion

In Chapter 7, the histories of the two housing models show that both developers - Town and Pocket Living - need some degree of subsidy, landowner interest or other assistance to manage the higher risk of developing housing for segments of the owner occupied market that are not normally served by volume housebuilders. Both developers also act to manage their risks by promoting a novel set of trade-offs against private living space, marketing these as a lifestyle choice. Trade-offs include a combination of cost savings, shared spaces and enhanced management rights, with Pocket schemes now offering features normally associated with cohousing, such as shared amenities,a growing emphasis on self-determination and a community experience. The key difference however, is that Marmalade Lane is semi-speculative. This is because early joiners can adjust the design to meet their longer-term needs in return for a refundable upfront payment. In contrast, Pocket Living’s fully-speculative approach means there is no opportunity for user involvement and consequently, the investment risks are far smaller. The following findings chapters consider the extent to which these differences make the respective models more or less adjustable over the longer-term, with regards to tenure, private dwellings and shared infrastructure. Alternatively, an abridged reading of this thesis may proceed to Chapters 11 and 12 for a synthesis of these findings, leading to my recommendations and conclusions.

8. **Adjustable tenure:** attitudes to financial risk and social inclusion

In the first of my three chapters on different dimensions of adjustability, Chapter 8 gathers together stakeholders' views on the opportunities for occupiers to adjust their tenure or the equity they hold in their home over time. This concept of *adjustable tenure* - the first axis of the adjustable housing thesis - is developed from the economic literature (see Chapter 2). This described how a part-owned, part-rented or part-shared arrangement could give occupiers more freedom of choice than is offered by the traditional, binary option of either renting or owning (Smith, 2015). Nascent and conceptual examples of such arrangements show how an adjustable tenure could allow buyers to access a secure but 'less-than-whole-home' version of ownership, in which the equity they hold can be continuously adjusted on a sliding scale (Miles, 2015, pp. 28 & 33; Ong ViforJ *et al.*, 2021, p. 2007). From a capabilities perspective, such an approach could help to balance out advantages and disadvantages between occupiers, by allowing them to exchange a lesser economic return for a gain in financial freedom (Sen, 2010, pp. 104 & 236–7).

To evaluate such concepts, three aspects become relevant as ways that tenure could be made more adjustable in ways that could enhance people's freedoms. The first is an adjustable *commitment* - that is, the right to rent or sublet. The second is an adjustable *investment* - that is, ability to adjust an equity stake up or down. The third is an adjustable *demographic* - that is, the ability to accommodate differences in socio-economic identity and needs. These are illustrated in the Venn diagram overleaf.

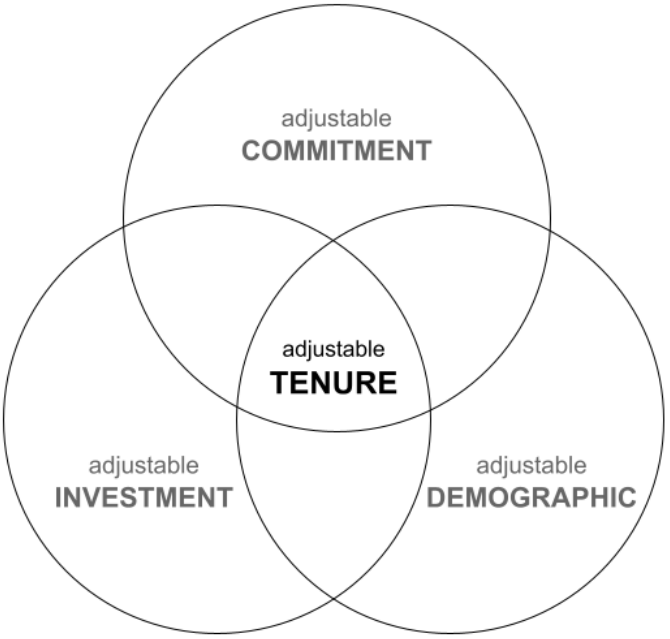


Figure 16: *Venn diagram showing the three aspects of an adjustable tenure (author)*

The sections that follow, present the findings relating to each of these concepts, from the perspective of three stakeholder groups at Marmalade Lane in turn. These are, the *producers* (in this case developer, estate agent and architect); then the *suppliers* (the enabler and planner); and finally, the *consumers*. Each section then turns to the question of tenure at Pocket Living, on the basis that this model and customer base represents a demographic at the edges of owner occupation that was not well represented at Marmalade Lane. The findings are summarised at the end of the chapter.

8.1. Adjustable tenure from the producers' perspective

This section considers the ways that an adjustable tenure could affect development viability. To do this, it gathers findings on tenure from the *producers* in the two development models. At Marmalade Lane, these stakeholders are the developer, the architect and the estate agent. At Pocket Living, these stakeholders are the developer, an architect and the heads of sales and customer experience. Adjustable tenure is considered in the context of the three sub-themes - that is, commitment, investment and demographic inclusivity.

8.1.1. Adjustable commitment at Marmalade Lane

Developing a sale product like Marmalade Lane is risky because it relies on the commitment of buyers. From the developer's perspective, this means "you're basically building a scheme and hoping that the people who were around at the outset are still there" at the point of sale (P2.1, 41:12). Indeed, cohousing projects are known to be particularly exposed to commitment problems. This is because a group can unravel, leaving the developer in the position of having to speculatively market an idiosyncratic way of living, whilst trying to sell homes that are customised to meet the needs and wishes of absent buyers (Scanlon and Arrigoitia, 2015, pp. 113 & 118).

At Marmalade Lane, this risk was amplified because the buyers were fully protected. The developer explained that this was because "they put down deposits, but in the end... if we didn't deliver, they'd get them back" (P2.1, 41:12). This meant that from the developer's perspective, "as long as you've got any owner occupied tenure in there, you're going to be extremely fortunate if you manage to get and keep the right number of people for the right number of dwellings from planning, right the way through" (P2.1, 07:06). This problem of commitment is what the literature describes as 'exchange risk' or 'settlement

risk' and is greatest when buyers feel so little financial or emotional attachment to a project that they could walk away before completion (Sharam, Bryant and Tom Alves, 2015, pp. 473–474). As will be shown in Chapter 9, this was the case at Marmalade Lane because "the reality is that people drop out… so a few [homes] are left at the end" (C2.3, 31.03.21). Indeed, speculative development for sale is seen by the developer as "a mug's game" because developing homes for owner occupation will always carry more risk than developing for other tenures when the buyer is known before construction commences (P2.1, 07:06 & 08:30). This is the case when the customer is a housing association, a build-to-rent provider or a local authority.

When exchange risks are managed, however, developers can borrow more cheaply and, in turn, lower their development costs. For example, when there are ample buyers on a waiting list, lenders feel assured and therefore the cost of borrowing is lower (Sharam, 2020, p. 12). Indeed, as the developer admits, Marmalade Lane would have been more viable if at least a third of pre-buyers were legally signed up to purchase their homes by the point of project inception, and at least half by the start of construction[52] (P2.1, 08:30). The market for cohousing, however is narrow because there are "a lot of people that don't want to do this" (P2.1, 34:33) and those that do, "have normally got to have all of that capital available to make the project happen" (P2.1, 23:20). This means that any obligation on buyers to make a legally binding commitment risks narrowing the pool yet further, with associated risks to sales.

At Marmalade Lane, the developer knew that the stakes were especially high for some buyers because "if they have got money, it's in assets that they're living in" (P2.2, 46:51). This meant that some people were ultimately unable to join the community that they had helped to design, either because they could not sell their home in time (C2.2, 16.03.21) or because they had not taken the personal risk of selling their home and moving into temporary rented accommodation to

[52] With reference to the RIBA Plan of Works, 'inception' means RIBA Stage 0: 'Project definition' and 'start of construction' means RIBA Stage 5: 'Manufacture and construction' (RIBA, 2020)

guarantee their liquidity (P2.1, 41:12; C2.2, 15.03.21; C2.6, 05:04). The danger for the developer is that costs increase if or when leftover homes need to be sold. This is because “people don't want to feel like they're moving into a building site” (P2.1, 42:51). Such was the case at Marmalade Lane and meant that the developer “spent the best part of a million quid on external works, including a load of things that, to be honest, are probably neither here nor there as far as the brief was concerned” (P2.1, 42:51).

Had the exchange risks been mitigated by means of an annuity leaseback, for example, where a third party investor takes a head lease on the scheme (P2.1, 08:30), then the developer “could have done a self-finished landscape and handed over half that money to the group” (P2.1, 42:51). Instead, the costs associated with showing prospective buyers around only added to the already higher costs that had been spent on ‘capturing’ buyers by “hiring a proper architect [and] building a better scheme” (P2.1, 34:33). One consequence was that “a number of families had to drop out because… the price went up too much for them” (C2.4, 06:01).

The corollary of these findings is that if an investment partner were to underwrite a third of sales at project inception and another third before construction, this could mitigate the risk of developing owner occupied housing for buyers that struggle to commit. Thus, from the producers’ perspective, an adjustable tenure could help to prevent pre-purchase agreements (and groups) from unravelling by widening the pool of buyers to include people who cannot commit for reasons of equity, liquidity or timing. This, however, requires a willing and flexible investor to fund the shortfall between what a part-buyer (and their mortgagor) is willing to pay, and what the developer needs in order to deliver the project - a problem which I turn to next.

8.1.2. Adjustable investment at Marmalade Lane

Given the difficulties of making pre-sales legally-binding, another way to manage commitment problems is to avoid owner occupied tenure altogether. Indeed, the option of renting rather than buying a home is the ultimate adjustable tenure because it makes moving house more feasible, even for those whose equity is constrained or tied up elsewhere (Ong ViforJ *et al.*, 2021, p. 1995). Thus, for developers of schemes with more exposure to exchange risks or models that rely more heavily on commitment, there are obvious benefits to bringing in investment finance so that at least some of the homes can be offered for rent or for partial ownership.

At Marmalade Lane such thinking was evident insofar as the developer believes that alternatives to mortgage-financed owner-occupation - such as shared ownership or build-to-rent - could have used institutional investment to enable people to become legally secured in their membership of a scheme earlier on, with the option to buy more equity over time (P2.1, 41:12 & 46:22). Indeed, the developer observed that in another scheme, a shift "from a sales-driven project to a rental-driven project… is actually enabling us to spend money on things that have a social benefit that we might not otherwise have afforded" (P2.1, 09:31). In other words, the involvement of institutional, shared ownership or buy-to-let investors can substantially lower the risks of having to get open market buyers to commit early, whilst allowing the associated costs to be redeployed elsewhere. This suggests that from the developer's perspective at least, a more adjustable tenure would not only mitigate exchange risks but could create an opportunity to align investor interests with the wider social, environmental and design objectives of a scheme (P2.1, 46:22).

In summary, there is a willingness - an appetite even - for developers to use institutional money to buy any leftover homes for rent or part-rent, once a first round of legally-binding pre-sale agreements are in place. For such a mixed tenure approach to be successful, however, a developer has to satisfy

themselves that pre-buyers would not be put off by the prospect of living in and co-managing a development with more demographic variation. This problem is discussed next.

8.1.3. Adjustable demographic at Marmalade Lane

The developer at Marmalade Lane expected that the "the intentional and almost self-forming" demographic of the group would generate a common vision and identity (P2.1, 16:48). They also realised that this could "really collide" with any system that allocated housing on a tenure-blind basis (P2.1, 16:48). One reason for their anxiety is that tenure is bound up in group identity, and can lead to what the literature describes as 'community opposition' between members (Sharam, Bryant and Tom Alves, 2015, p. 480). Such opposition to other tenures was, in the architect's opinion, especially likely in a cohousing project like Marmalade Lane. This is because cohousing buyers typically "come from a background where they've got a bit of equity" and identify as "people who are able to do it themselves" (P2.2, 01:58 & 07:06). The resulting demographic profile can and does lead to community opposition, such as the examples provided by the producers above. These objections and anxieties are cultural, financial and practical in nature, as outlined below.

Cultural opposition to a mixed tenure approach was anticipated by the developer at Marmalade Lane because some members were "a bit worried that there might be people who are either just not a good fit - or worse, just rough - kind of imposed upon them" (P2.1, 16:48). This 'nervousness' was confirmed by the estate agent, who realised that "there was this second stage of the [sales] process" which was about "how much do you want to buy into your neighbours, really, and do they want to buy into you?" (P2.3, 07:47). This meant that "first and foremost, it was the *type* of customer" rather than people's income that was motivating sales (P2.3, 18:00).

Financial opposition was also anticipated by the developers. This was because the established members "are worried about the economics of it" (P2.1, 16:48), having produced a scheme with a "very expensive common house" which they knew other groups could not afford to run (S2.1, 37:25). The developer knew that "if you end up with a lot of affordable housing, it does mean that the base off which to pay for things like common facilities starts to get really narrow" (P2.1, 16:48). In other words, mixed tenure means a scheme with a mixed demographic and variable incomes, with the effect that service charges might not meet the level of shared costs that the original group members envisaged.

A third source of potential opposition was around the *practicality* of mixing tenures in a scheme where there is an expectation of buy-in, co-management and participation. The developer described this as members' "fear" about creating "an intentional community with some people who don't really buy into it or want to be there" (P2.1, 19:33 & P2.2, 01:58). Indeed, from the developer's perspective, it is "very noticeable that it [rented tenure] doesn't bring the intentionality" or committed involvement that is seen as an essential ingredient for management decisions to be made collectively (P2.1, 30:25). This question of contractual tenure security is revisited from the consumers' perspective in 8.3.1 & 8.3.2.1 (below).

Taken together, these three anxieties - cultural, financial and practical - reveal the extent of conflict and complication that tenure and associated demographics create for co-managed schemes like Marmalade Lane. The developer sees this as a "fundamental tension about wanting to be really open, to offer affordable homes... but also wanting to control, to a degree, the nature of your neighbourhood and community" (P2.1, 19:33). Indeed, the estate agent observed that such was the desire for demographic control that during the sales process, representatives of the established Marmalade Lane community wanted to meet with potential buyers, once they had finished their tour with the agent.

This was “to be - not exactly interviewed - but certainly to ensure that anyone that we introduced... was also fully signed up to the concept” (P2.3, 08:56).

Such observations support the developer’s view that whilst “there's no reason why... it [cohousing] couldn't be open to social housing renters, as well as anyone else,” the problem is that “it's self-selected and at the moment, there's a big part of it that’s people who have the money to do it” (P2.2, 01:58). Thus, variations in tenure become associated with variations in the demographic. For developers, this creates a risk that members will leave the scheme before completion because they feel that only a community of homeowners will commit whereas the wrong ‘*type’* of demographic would not (P2.2, 01:58; P2.3, 18:00).

In summary, the developer, architect and estate agent all recognise that mixing tenures makes co-managed housing more risky to develop, because prospective buyers perceive non-owners to be less culturally, financially and practically committed and may, in turn, become less committed themselves. The producers’ concerns about a collision between tenures, plays out in the consumers’ reflections on the relationship between demographics and co-management (see 6.3.3). First, however, it is helpful to consider the question of tenure from the Pocket Living point of view.

8.1.4. Adjustable tenure at Pocket Living: the producers’ perspective

Turning to the producers of Pocket Living schemes, it is clear that Pocket has an advantage over other developers because their sales risk is lower (P1.1, 09:31). One reason for this is their database of around 18,000 registered people gives them a window onto their buyers’ preferences (P1.1, 05:58). This shows them that their buyers come from “a certain, defined demographic” from a tight age cohort (P1.1, 02:24 & 10:25; P1.3, 02:28 & 06:42). Further, the architect believes that Pocket schemes are so “age-specific” that they “would not be appealing to

downsizers" (P1.3, 06:42). With the benefit of this demographic insight, Pocket can produce single tenure, single-size schemes for "a narrow cohort" at less risk than their competitors (P1.1, 05:58; 19:45; P1.2, 13:56). In turn, their ability to accurately predict demand can be expected to lower the exchange risk of developing a specialised product for a specific market segment (Sharam, Bryant and Tom Alves, 2015, p. 474).

However, the Pocket model is not risk-free. This is because its tenure fixity makes it harder for buyers to adjust to (or plan for) economic shocks. For example, the developer observed that the 2020-21 'lockdowns' have caused some Pocket buyers to reevaluate what they want, or what they can afford, in case changes in their income or employment force them to sell at a loss (P1.2, 08:46, 10:04 & 11:23). Furthermore, the threat of redundancy has caused some Pocket buyers to pull out, even during the sales process (P1.2, 11:23). Meanwhile, occupied schemes are experiencing churn because some people will leave after only a year, due to their job situation (P1.2, 08:46). One solution to this evidence of buyer nervousness is for Pocket to offer alternative tenures besides traditional, mortgaged ownership. Indeed, the developer foresees that build-to-rent is "on the cards" (P1.2, 14:32-16:12). The primary motivation for this shift, however, is not to address structural problems for buyers facing uncertainty, but rather to diversify Pocket's investment portfolio (P1.2, 14:32-16:12). On this basis, it is unsurprising to find that Pocket has no plans to go into shared ownership (P1.2, 13:56), despite the opportunities for adjustability and community stability that this might offer.

In summary, Pocket's customer insight means that they have the confidence to develop single tenure, single-size schemes, safe in the knowledge that if one buyer cannot *commit*, there is another on the waiting list ready to take their place. Nevertheless, the developers' preference to diversify their *investment* portfolio means that rented tenure is likely to be offered in the future. Meanwhile, Pocket is aware of a nervousness amongst some of their buyers

because their age-specific buyer *demographic* is increasingly nervous about changes in employment, the housing market or their housing needs.

8.2. Adjustable tenure from the suppliers' perspective

The next section considers the ways that an adjustable tenure could affect the production of the project brief. To do this, it gathers findings from the *suppliers* at Marmalade Lane, with regards to alternatives to traditional, mortgaged owner occupation. This stakeholder group includes the planner and the enablers - that is, the enabling consultants who assembled the resident group and then led them through the briefing process, on behalf of the landowner. Adjustable tenure is again considered in the context of the same three sub-themes addressed previously. These were, commitment, investment and demographic inclusivity. Unlike the previous section, however, there is only a short reference to the Pocket Living perspective because unlike at Marmalade Lane, there was no external supplier of briefing services.

8.2.1. Adjustable commitment at Marmalade Lane

The previous section showed that by the time Marmalade Lane reached completion, some apparently committed buyers were already falling away (see 6.1.1). However, by looking back to the outset of the project, the likelihood of such commitment problems was apparent even at the point of briefing preparation[53]. This is because not everybody who was involved at the outset was in fact committed to actually living there. Rather, some were "committed in terms of the excitement of the process… the ideology, the ethos of it, but wanted to invest in it - effectively buy a property… but to rent it out" (S2.1, 32:36). Yet, the principle of buy-to-let did not have the approval of the

[53] Preparation and briefing is Stage 1 of the RIBA Plan of Works (RIBA, 2020).

community. As will be shown, many opposed it at the time. Nevertheless, there are today, five or six rented homes at Marmalade Lane (C2.3, 21:11) and at least one owner is renting to a family member (S2.1, 33:04). Thus, the question is why the group ultimately agreed to accept some rented tenure in the end.

One reason for this - based on the finding in the previous section (see 8.1.2) - could be simply to ensure that the project is capitalised. The opportunity to invest in property to rent, however, is not the only way of keeping capital committed to a project like Marmalade Lane. Rather, the enablers' view is that the industry needs mechanisms for balancing out disequilibrium between residents' wealth and needs at schemes like Marmalade Lane. For example, one attractive tenure solution, from the enablers' perspective would have been to have provided the group with a way to collectively "own as a company, some of these properties and rent them out at the same rents that a housing association or council will do" (S2.1, 30:36).

Such a facility would have allowed people who preferred to rent or part-rent their home, to do so directly from the freeholder company, rather than renting privately from individual owners therein. This shows that it is theoretically possible to aggregate surplus capital from committed members and to use this to fund other forms of tenure[54]. Indeed, the enablers' believe that such a solution is not only possible but would also have been *feasible* at Marmalade Lane. One reason for this is that there was a "slightly alternative, independent mind at work, who were looking for an alternative even to standard homeownership" (S2.1, 1:01:04). Another reason is that the low interest rates that followed the 2008 financial crisis meant that some of the buyer-members were also looking for "a way of putting their money into something - never mind stocks and shares or pension funds, etc" (S2.1, 1:01:04).

In summary, the enablers' view is that had there been a mechanism for the group to *collectively* own some properties for rent or part-rent, it would have

[54] See, for example, Mutual Home Ownership Societies, as described in Chapter 4.

been an attractive investment opportunity for some members, as well as another way of capitalising the project, besides private sublets. There are, however, more conventional ways of ensuring that a scheme has both the commitment and the investor capital that the developer needs to ensure delivery. It is to these that I turn next.

8.2.2. Adjustable investment at Marmalade Lane

In the planners' opinion, a mixed-tenure approach "is not necessarily a bad thing" (S2.2, 39:34). For the enablers' at Marmalade Lane, however, using outside finance to fund a mix of tenures over the longer-term, creates complexity rather than resilience. First there is the question of "how on earth do you fund that?" and second, there are problems of aligning values and investment objectives between stakeholders (S2.1, 30:36). These are considered in turn, below. A useful starting point is the enablers' suggestion that mixed tenure solutions would be unlocked by involving investors, "who are willing to take long-term steady income from a property" (S2.1, 1:01:59). This aligns with the developer's earlier suggestion that using institutional money could help people commit and even to adjust their equity over time (see 6.1.2). Indeed, in the enablers' view, such an approach could open up a new avenue for delivering housing (S2.1, 1:01:59) and could be especially attractive to investors seeking opportunities to acquire environmentally impactful investments (S2.1, 18:03).

Conflicts can arise, however, because in the enablers' view, such investment would normally only be found by partnering with a traditional housing association, to either buy some of the homes or bring capital subsidy into the project (S2.1, 30:36). The difficulty that this would have presented at Marmalade Lane was that the founding group's investment values were so strongly held that any involvement from an outside provider would have caused some people to drop out (S2.1, 1:01:59). In fact, as the enablers observed, if they had said to the group, "this is all going to be cheaper if it's done by a pension fund,' you'd

have had chaos" (S2.1, 1:01:04). This is surprising, because even the developer observed that there is a need for exactly this sort of long-term, institutional funding to enable projects like Marmalade Lane to focus on social and environment priorities, rather than wasting money on managing development risks (see 6.1.2). Further, the literature in Chapter 1 showed that outside finance can even give people the freedom to vary the equity they hold in their home, over time (Miles, 2015, pp. 28 & 33; Smith, 2015, pp. 76–77). Despite these opportunities, however, the involvement of long-term outside finance at Marmalade Lane was effectively extinguished by the veto power of the founding group. This happened, the enablers' view, because the group that were involved at the time, felt that membership should be restricted to people with the equity and borrowing power to buy a home at open market value (S2.1, 35:01).

Such restriction on tenure naturally excludes people at the margins of homeownership - even those who, for whichever reason, might simply prefer the flexibility of renting to the exposure of owning (Ong ViforJ *et al.*, 2021, p. 1995). Further, restrictions imposed at the outset will persist in perpetuity because, in the enablers' view, a single tenure solution "really restricts the ability to change tenures further down the line" (S2.1, 35:01). Thus, it was of 'disappointment' to the enablers that due to ambivalence around tenure, even the two shared ownership flats that had been intended, were never delivered (S2.1, 33:04). Instead, a commuted sum was paid in lieu of the planning condition (S2.1, 33:04). Yet, despite some residents' resistance to outside finance and mixed-tenure models, the enablers believe that "multi-tenure… is going to be the way forward" on the next generation of cohousing schemes (S2.1, 30:36). This is because there are now innovative investors actively looking for new ways to put money into housing (S2.1, 1:01:59). Thus, from the enablers' perspective, it will soon become necessary to tackle the "control and governance issues" that come with involving an outside finance partner (S2.1, 30:36).

Such issues arise if the outside partner is able to nominate or impose people on the scheme who "may not have the same values" as the owner group (S2.1, 30:36). In the enablers' view, one way to get around these issues is to prioritise *community-building* by, for example, ensuring that permanent residents are the majority group, alongside a smaller group of people of other tenures (S2.2, 39:34). Another way is to choose sites where the landowner is willing to accept a revenue income rather than a capital receipt for their land, in return for a scheme that prioritises community-building (S2.1, 58:03). In the enablers' view, this idea "is an interesting one" because there are landowners who "are so strapped economically that they might want to do it" (S2.1, 58:03). Indeed, Marmalade Lane "only really happened because the City Council [as landowner] was able to transfer the land at a very low value" (S2.1, 35:01). Ordinarily, however, the enablers' opinion is that a partnership with an owner of high value land would require "quite a chunky bit of money" to be structured over, say, the first ten years of occupation whilst the development costs are paid down (S2.1, 58:03).

An alternative to forming a partnership with a landowner - or indeed with a housing association or institutional investor - is to aggregate surplus wealth from the resident group itself (S2.1, 30:36), as discussed above (see 6.2.1). Indeed, of the three ways of capitalising a project with outside finance - an institutional investor, a patient landowner or a resident collective - it is the latter that appears to be the enablers' preference, because it aligns investment objectives and values between stakeholders. There remains, however, "control and the governance issues" that go with a mixed-tenure, mixed-demographic model (S2.1, 30:36 & 35:01).

In summary, a mix of tenures creates complexity rather than resilience because it implies a community with uneven wealth and borrowing power, and requires an investor (or landowner investor with a long-term interest) whose values and objectives are unlikely to align with other stakeholders. Thus, whilst mixed

tenure housing could attract long-term, low cost, environmental impact investment could offer a new way of delivering housing, the opposition of founding members not only serves to ensure 100 percent private sale but in doing so, preclude future adjustments to the tenure. One reason for this opposition is a concern that a mix of tenures will create control and governance issues, whilst making it harder for a group to define and preserve its identity during the briefing process. This is a central obstacle to adjustable tenure, to which I turn next.

8.2.3. Adjustable demographic at Marmalade Lane

Demographic identity appears to be so intrinsically linked to tenure that at Marmalade Lane, alternatives to owner occupied tenure were largely designed out at the briefing stage. An important reason for this, in the enablers' view, is that user-led design tends to attract people who have the time and resources to stay with a project (S2.1, 23:58). In practice, this meant that membership of the group was largely contingent on people's housing circumstances at the time, with the result that the collective identity was dominated by existing homeowners (S2.1, 07:32). Indeed, with the exception of "young professional couples who were thinking about having a family or had a family", the demographic of the group was "either at retirement or post-retirement and often single, but having sold a property" (S2.1, 11:37).

One reason that existing homeownership was so important to the group's identity and core values was that the participants all needed the time and wealth to participate in what the enablers describe as a process "values-based decision making" (S2.1, 08:17). This process was needed because "when you're engaging with people for whom this is not their profession… you've got to get them onto a level playing field… that everybody buys into" (S2.1, 05:28 & 08:17). This consensus-building exercise, however, "didn't just allow the brief for the building, but went a long way to form the common and group values" (S2.1,

08:17). This was so much so, in fact, that rather than the group forming the brief, it was the demographic of the group *itself* that was formed by the process (S2.1, 43:17). The group demographic was free to solidify in this way for two reasons. The first was that the brief was driven by founding group members' "interests, concerns and cares", as well as "who they'd like their neighbours to be" (S2.1, 43:17). The second reason was that some of those whose personal views diverged from the emerging consensus, were treated "quite difficultly" and tended to leave the project (S2.1, 07:32). It is therefore unsurprising that by the end of the process, "95% of those involved had very similar values" (S2.1, 08:17).

The corollary of these identity-forming mechanisms was that the 'value-based decision-making' process turned the briefing document into "a badge of identity" (S2.1, 08:17). This served the primary purpose of enabling the scheme to progress through the briefing stage to the point of outline planning and tender. It also gave the developer the security of knowing they could spend more on a scheme that had interest (if not commitment) from "people who really, really want to do this" (P2.1, 34:33). One consequence, however, was that the group had become determined to do it themselves and on their own terms (C2.2, 35:03; P2.2, 01:58). In the enablers' view, this meant that demographic values - like the investment values discussed previously - were so strongly held that they became a barrier to both outside finance and more adjustable, affordable ways of delivering housing (S2.1, 1:01:59; see 6.2.2).

8.2.4. Adjustable tenure at Pocket Living: the suppliers' perspective

Turning to the briefing stages of Pocket Living schemes, a recurring theme during the interviews was that developments that are "single-tenure, single size [are] quite challenging in planning terms" (P1.1, 19:45; P1.2, 13:56). This is because what the planners really want in new schemes is family social rent (P1.1, 16:39). As discussed later, however, the planners have tended to accept that applications from Pocket Living will be 100% owner-occupied, and therefore other concerns about trade-offs between private and shared space take over the planning negotiations (see Section 10.2.5, below). Thus, the planners' negotiation position is enhanced because their preference is for family social rent and therefore they attach more conditions as the price for accepting the developer's preference to single-tenure private sale.

8.3. Adjustable tenure from the consumers' perspective

The next section asked *consumers* how tenure shapes their lived experience, with regards to what, how, when and why tenure decisions were taken, as well as the way these choices affect (or were affected by) the demographic. This section also shows how rights and responsibilities are distributed between residents of different tenures. Adjustable tenure is, once again, considered in the context of the same three sub-themes as previously - that is, *commitment*, *investment* and *demographic* inclusivity. To capture the views of a consumer group that was largely missing at Marmalade Lane, the last set of findings (Section 8.3.4) revisits these same themes but from the perspective of the community at the Pocket Living case study.

8.3.1. Adjustable commitment at Marmalade Lane

Amongst the community at Marmalade Lane, commitment levels vary. This is because some people feel more committed to the *ideas* of the scheme - inclusivity, co-design and a rejection of housing market economics - than to the prospect of actually living there (C2.2, 29:16; C2.3, 21:11; C2.4, 10:03; P2.1, 07:06). This is particularly amongst members who joined early but also worried about their future housing needs, causing them to feel less committed to the trade-offs that they had helped to author during the co-design process (C2.3, 21:11).

Such dilemmas appear to stem from the fact that for some people, participation was motivated by what they thought housing *ought* to be, rather than by their own housing needs, *per se*. This is the case because in the developer's view, many of those who were involved in the decision-making see "any engagement at all with conventional land economics, as an impurity" (P2.1, 16:48). Yet, as shown in 6.2.3 (above), it is these same members that have "the *time*... [and] *resource* to be able to pay to stay with the project" (S2.1, 23:58). Indeed, some buyers spoke of having come to the scheme "in a fairly strong financial position" because they were able to commit to buying a home using equity in a home that "was already fully paid for" (C2.2, 23:58; C2.4, 06:01). Others were in the yet stronger position of not having to sell their home at all, instead choosing to keep it as a rental investment (C2.6, 05:04).

Nevertheless, many residents "really wanted the cohousing idea and experience to be available to people who couldn't afford to buy" (C2.4, 10:03). Yet, at the same time, they wanted the scheme to be entirely private sale, with no tenants (C2.3, 28:42; C2.4, 10:03). This 'conflicted consumer' characteristic is encapsulated by the admission of one owner that whilst "we as a community have agreed that buy-to-let landlords are not a good thing and we don't want them... as it so happens, I am one" (C2.2, 29:16). Such thinking plays out across the scheme. As another owner explains, of the "five or six rented homes, most

of them are owned by people who were in the first wave of Cambridge Cohousing" (C2.3, 21:11). In other words, amongst the founding group, there were members who "had a commitment to the place but then never wanted to move in - but they bought in anyway" (C2.3, 21:11) - a contradiction to which we return (see 6.3.2 & 6.3.3).

The developer believes there is "some irony" in contradictions such as these (P2.1, 16:48) because "these people usually have plenty of money behind them, to enable them to step out of that system" (P2.1, 16:48). Yet, at the same time, they "don't really want to step off the property ownership ladder themselves, even if they may also feel that the property ownership ladder is a terrible thing" (P2.1, 07:06). There was therefore a conflicted mindset at work amongst a subset of the owner group for whom the opportunity to reject conventional land economics was only possible because of their returns from conventional land economics (i.e. homeownership). Thus, the subletting of homes was originally prohibited for the simple reason that the group's priority was to "exclude people buying them for rent" (P2.2, 51:48).

Although this rule was eventually relaxed to allow some homes to be sublet, it was subject to some "quite strong policy guidelines on whether you can rent your house out" (C2.3, 21:11). The mechanism for this requires owners wishing to sublet to apply to the member-owned, freeholder company, *Cambridge Cohousing Ltd*, although this permission cannot be unreasonably withheld (C2.4, 10:03). In the developer's view, the founding group agreed to make such concessions, "in the spirit of making [the scheme] available to a broad range of people" (P2.2, 51:48). However, the consumer view is that "there's definitely a very clear eye to not letting it get too high", even if there is no figure for how many properties can be rented (C2.3, 21:11).

One way that this is controlled is by granting permissions that not only require justification and the approval of the group but are also time limited[55] (C2.4,

[55] Usually the maximum rental period is 3-5 years (C2.4, 10:03).

10:03). In practice, however, the agreed subletting rules grant owners the right to an adjustable tenure but not the tenants that occasionally take their place, with the effect that the levels of commitment across the community vary between tenures. This happens because owners can let a home "while you go tour Europe," but cannot do so for longer than three years (C2.3, 21:11). Thus, by only offering assured shorthold tenancy contracts (AST), tenants are denied the security of either an automatic right to renew[56], or the option to become part-owners. Further, as shown in 6.2.2, these terms are enshrined in lease terms which, once agreed by the founding group and sold by the developer, cannot easily be made more even in the future (S2.1, 35:01).

Given these problems of uneven commitment between tenures, two questions arise. The first is why the consumer group, in agreeing to allow subletting, did not take steps to ensure that tenants had enough security of tenure to make Marmalade Lane their permanent home. The second is why members were apparently so willing to go against the consensus by granting some people the right to buy a home for the purposes of subletting. One explanation for these is that adjustability and inclusivity were simply not central to the group's tenure decisions - at least, there is no evidence to say it was. Rather, what emerges is a residential property development in the traditional sense, where opportunities of permanence and participation are restricted to those with the money and time to access ownership and the earlier stages of the decision-making process. Another explanation is that within the group, there was an ability - a willingness even - to allow two seemingly opposing ideas to coexist, even where these put some individual preferences before the ideals of the group.

In summary, whilst founding members at Marmalade Lane are both committed to inclusivity and aware of their reliance on their existing housing wealth, they nevertheless chose to deny tenants the level of adjustability and tenure security that owners enjoy. To understand the origins of these seemingly contradictory

[56] See Section 4.1 for a brief overview of tenure options in the UK.

positions, the next two subsections reflect on the logic behind the consumer group's tenure decisions. Thus, Section 8.3.2 *('Adjustable investment')* considers the interplay between tenure, investment and project viability, then, Section 8.3.3 *('Adjustable demographic')* considers the tension between co-management and a mixed tenure demographic.

8.3.2. Adjustable investment at Marmalade Lane

To understand the interplay between tenure and investment at Marmalade Lane, it is helpful to begin by returning to the developer's problem of exchange risk (see 'Adjustable commitment', in 8.1.1, 8.2.1 & 8.3.1). To manage this risk, both the enablers and the developer recommend a mixed tenure approach, for which other sources of capital are needed. One such source is *outside* investors (i.e. housing associations or institutional backers such as pension funds - see 'Adjustable investment, in Sections 8.1.2 & 8.2.2). Another is *inside* investors - that is, surplus wealth from *within* the community (see Section 8.2.1). The section below tries to establish the consumers' attitudes to these two investment solutions. To do this, the findings are organised first around consumers' attitudes to *outside* investment, before turning to the idea of investment coming from *within* the community.

8.3.2.1. Consumers' attitudes to outside investment

Some of the residents at Marmalade Lane believe that the problems of uneven levels of commitment and permanence within the community (see 6.3.1) could have been mitigated by offering a more secure alternative to Assured Shorthold Tenancies[57]. A part-ownership tenure, for example, "probably would have helped", because people would have had the option of owning some equity and renting the rest, without fear of a no-fault eviction (C2.4, 08:18 & 13:19). Indeed,

[57] See Section 4.1 for a brief overview of tenure options in the UK.

had an investor been involved early on at ML, their money would not only have helped the scheme to offer more inclusive tenure solutions but could also have lowered the construction costs (C2.4, 13:19).

The idea of part-ownership was not only a hypothetical way of providing adjustability through tenure but had in fact been an intention at one stage. This is because there had been a commitment that two of the homes at Marmalade Lane would be made "affordable in perpetuity", by means of a shared ownership arrangement where 25 percent of the equity would be "owned permanently by the cohousing company" (C2.4, 08:18). Ultimately, however, the financial backer of the project, Trivselhus, "paid the money to the Council in exchange for those two properties" (C2.4, 08:18) in a decision that "was disappointing" for the enablers (S2.1, 33:04). This happened because "a number of people were dead against it" (C2.4, 10:03) for what appear to be four main reasons. These relate to concerns around the members' sense of control over the *community, complexity, adjustability* and *purpose* of the scheme - concerns which are discussed below.

The first reason that residents opposed a part-ownership solution was their concern for the implications for the *community* of having an investor on board. This was because of "the dual and sometimes conflicting requirements" with which some people associate third party involvement (C2.4, 08:18). For example, had the Council been involved as an investor or backer, they would have applied their own criteria for housing people, whereas the group's priority was "to maintain our community" (C2.4, 08:18). In other words, with investment comes control over the community membership and this was not something that the founding members wished to relinquish.

Another reason for the group's opposition was *complexity*. This was because some people considered the involvement of a third party as a risk, because this registered provider, institutional funder or a rent-to-buy investor would bring another voice to the table and "start to make this cohousing scheme feel almost

unmanageable" (C2.3, 28:42). In other words, it was challenging enough to manage the preferences of multiple owners without adding an extra, veto-wielding stakeholder to the mix.

A third reason that the community appeared to object to shared ownership at Marmalade Lane was that they foresaw that any investment would need to be genuinely *adjustable*. This is because the community felt that it has to be possible for a renter or part-owner "to buy out the investor and become a full owner, otherwise [they] don't really have any financial security in the long run" (C2.4, 08:18). In other words, whereas a landlord prices for a binary owner/renter relationship and a mortgagor prices for a loan that amortises over time, an adjustable, part-ownership arrangement requires a specialist investor who can price for continuous adjustments to meet the needs of the occupier, on the basis that some will 'staircase out' to become full owners, whilst others will prefer to rent or part-own indefinitely.

The fourth and last reason for members' opposition was the risk that an investor's control over the social, environmental and governance *purpose* would not align with those of the community. This was evident because some people said they would only have been happy if they knew that any investor "was doing it for the right, long-term reasons" (C2.2, 43:58), or was already involved with "giving or loaning money to ethical and ecological projects" (C2.6, 34:53). However, given that such 'impact investors' are known to exist, it is likely that the problem of aligning purpose between investor and community is not insurmountable.

In summary, the community was opposed to the idea of funding rented or part-rented homes using *outside* investment, because their priority was to retain control over their community, avoid complexity, provide some adjustability and ensure the alignment of stakeholders' objectives. These objections do not, however, preclude using private wealth - or *inside* investment - from within the community to fund more adjustable tenures at Marmalade Lane. It is to these

opportunities that I turn next.

8.3.2.2. Consumers' attitudes to inside investment

Section 8.3.1 (above) showed that some homes were bought by members of the founding group as second homes and have since been rented privately, despite buy-to-let having been originally ruled out. This section tries to establish *why* the group was prepared to allow some group members to use their own wealth to fund private sublets.

The architect's view was that the group decided that some degree of subletting "would be not only OK, but possibly be a good idea, because there were people who wanted to be a part of the community but couldn't be owners and were happy to rent" (P2.2, 51:48). This implies that the informal sublet arrangements that occur across the scheme are motivated by members' desire for inclusivity. However, one founding member "sold up in London - so they have enough money to buy two [homes]" (C2.3, 25:22), whilst others were able to liquidise existing housing wealth in time to take advantage of the investment opportunities that were available to them as founding members (C2.2, 15.03.2; C2.3, 00:41; C2.5, 09:27; C2.6, 05:04). This *investment*-seeking characteristic can be explained by the socio-economic context at the time. As the enablers observed, for people with surplus wealth, "there is no other place that's sensible and secure to put it" aside from property (S2.1, 1:01:59).

This evident appetite for investment may, however, mask another characteristic of the housing demand at Marmalade Lane. That is that some buyers were seeking *insurance* against changing needs. For example, one founding member who was in their 60s at the time, "bought one house [that] they expect to live here for the rest of their life" but decided that they also "need to have a flat available for when they can't cope with a house any longer" (C2.3, 24:58). Similarly, the existence of "quite a lot of lodgers'' at Marmalade Lane is seen as a

sign that some people choose to buy space to expand into over the longer-term but need help with mortgage payments over the shorter term (C2.3, 21:11).

In summary, these pathways suggest that *inside* investment was acceptable because some people in the early decision-making group were keen to take advantage of the opportunity to acquire a property investment as well as some insurance against changing needs. Thus, inclusivity - by means of the various, informal, mixed tenure arrangements that occur across the scheme - may be merely a by-product. The findings suggest that the opportunity to acquire these was greater for those who were there at the right time and who had the means to do so, thus explaining why the group decided to accept investment from community members. However, the decision to allow subletting has demographic consequences that appear in the community's view on the managed experience. These are discussed next, again from the consumers' point of view.

8.3.2.3. Adjustable demographic at Marmalade Lane

In Section 8.1.3 (above), it was shown that the producers were cautious about mixing tenures at Marmalade Lane. They warned that whilst "it would have worked to have had a percentage of the houses being rented" this was only "as long as the people renting bought into the ethos of the community" and "want to be there" (P2.1, 19:33; P2.2, 01:58 & 51:48 - see Section 8.1.3). The section below shows the consumers' perspective on the demographic consequences of this ambivalence around tenure - that is, the consequences for the group's identity and for the managed experience. These two areas of concern are discussed in turn.

8.3.2.4. Group identity

The earlier findings have shown that the community at Marmalade Lane "really wanted the cohousing idea and experience to be available to people who couldn't afford to buy" (C2.4, 10:03 - see 6.3.1). Yet, members of the founding cohort now recognise that "some things that we did try to get right - like the demographic - we actually got wrong" (C2.4, 06:01). This has meant that people in their 30s are underrepresented and young couples in their 20s are missing altogether (C2.4, 06:01; C2.6, 19:22). Indeed, some owners reflect that it is only because of the government's 'Help to Buy' scheme[58], and the fact that "a few houses that are rented out, [that] we have people in that demographic here" at all (C2.5, 05:53 & 06:57; C2.6, 19:22).

This shift from inclusive ideals to a demographically skewed outcome cannot be explained entirely by the split views on private rental that existed within the community. Rather, the evidence suggests that one reason that there was not a more inclusive mix of tenures at Marmalade Lane was that the process of 'values-based decision-making' *itself* made it likely that the scheme would be less demographically adjustable. This is because the idea that the brief was in fact a 'badge of identity' appears to have cemented a shared set of values that made it harder to accommodate views or needs that diverged from those of the founding group (see 8.2.3). These shared values appear to be political (C2.2, 16:36), occupational (C2.2, 09:56) and educational (C2.2, 11:34; C2.3, 19:57; C2.6, 12:45), rather than income-based. They are also linked to age and life stage, with most of those who were able to participate in the briefing and co-design process being over 40 years old (C2.1, Q9).

Three patterns in the evidence from the owners' perspective provide clues as to why and how the demographic at Marmalade Lane became so fixed. The first is that the opportunity to shape the identity of the group during the co-design

[58] *'Help to Buy'* is the UK's largest shared equity scheme by far, and uses a mix of publicly funded equity loans and traditional mortgage funding to reduce the buyer's deposit, repayments and exposure to investment risk (Whitehead and Williams, 2020, p. 10)

process was *exclusive* to the views of members who had the time and means to participate. For example, one respondent recalled telling a prospective member that Marmalade Lane would be "like a village without any Tories, which is basically what it has proved to be, so it's a good place" (C2.2, 16:36). In contrast, the speculative buyers who bought later "weren't there to tell us their views" (C2.4, 06:01).

The second reason is that established members had the opportunity to make *justifications* that exempted them from some of the rules they helped to set in the first place. One such justification was that the right to buy a property to let was a reward for members' "prior involvement before the policy was set" (C2.3, 21:11). Another example is that it became justifiable for older members to buy a flat to rent as well as a house to live in, for the option of moving to their flat in older age (C2.3, 21:11). These exemptions relate to the reframing of buy-to-let as a legitimate way to insure against infirmity or as an incentive to join early (see Section 8.3.2).

The third reason that the demographic became so fixed is that renters appear to be seen as others or outsiders. For example, "*renters* don't tend to engage with the community" (C2.6, 16:35); "*ours* [renters] are more likely to be involved in the social life than the management" (C2.5, 28:24); "*they* haven't made such a big financial commitment"; "*they* can move if they want to"; "*they* see it as less their community"; "*they* might not care about… decisions" (C2.4, 11:27 & 12:24). Such distinctions between tenures would seem to support the view in the literature that the status quo surrounding UK housing policy still serves to valorise ownership as a mainstream ideal, whilst marginalising renting as 'other' (Smith, 2015, p. 62). Further, it is noticeable that despite the fact that "a lot of people were very opposed to purely rented properties" (C2.4, 10:03) and thought "buy-to-let landlords are not a good thing" (C2.2, 29:16), not one of the interviewees expressed resentment towards those that became landlords or who had agreed to allow subletting in the first place. This is surprising in light of

the problems of engagement and management, to which I turn next.

8.3.2.5. Management

It is true that “a lot of people were very opposed to purely rented properties” (C2.4, 10:03). This, however, cannot be attributed only to the identity reasons discussed above. One other reason is that members of the founding group “were very scared that tenants would not become part of the community, would not have the same ethos and desire to contribute or participate actively in the community” (C2.4, 10:03). Such concerns are important because co-management was so central to the ideas behind Marmalade Lane (see Section 7.1.1 for management structure). They have also been borne out in the lived experience, where owners observe that tenants are “more likely to be involved in the social life than in the management behind the scenes” (C2.5, 28:24). Indeed, several owners hold the view that “the community is carried by those who are owning their properties” (C2.5, 28:10).

An example of situations where tenants are seen to disengage with the otherwise shared managed experience includes the fortnightly meeting of the Management Committee. This is a session to which all tenants are invited and encouraged to attend, but which few attend (C2.3, 26:31). Instead, tenants are seen to be happy to “use the shared facilities and… join the conversations” but “almost never come to meetings and have been less involved in the community, generally” (C2.4, 11:27 & 12:24). One owner went further, suggesting that “renters don't tend to engage with the community - we've only got about three or four houses like that and it's a shame” (C2.6, 16:35).

Disengagement, however, is not a one-way process: There are also situations where owners disengage with tenants, such as the way in which service charges are agreed. For example, some owners feel “there is something quite personally inclusive” about including residents in the process of agreeing expenditure, because the objective is “to keep our service charge low, for people of varying

means" (C2.5, 24:39). It is therefore incongruous to find that something as inclusive as agreeing the level and allocation of service charges expressly *excludes* renters from voting (C2.5, 24:39). This happens because "each house has one director [of Cambridge Cohousing Ltd] and it is the owner" - not the tenant - even in the rented houses (C2.3, 26:31). Members of all tenures "are welcome to come to meetings but only directors or alternates can vote at those meetings, so a tenant, unless they were made an alternate by the property owner, would not have any rights to vote" (C2.4, 11:27). "When it comes to the crunch, that's how it would go" (C2.3, 26:31). Nevertheless, the owners appear to accept such an uneven distribution of rights. This is on the basis that tenants "might not care about the service charge decisions" and that anyway, their service charge payments will "just be rolled into their rent by the landlord" (C2.4, 12:24).

From the tenants' perspective, however (and although no tenants came forward for interview) there appear to be three reasons why tenants might choose to disengage from management. The first is that tenants can move house more quickly and with fewer costs or frictions than mortgaged owners, leaving them with a sense of *impermanence* (C2.4, 12:24). The second reason is that tenants face *inequalities* in their voting rights, unless they are made an alternate by their landlord (C2.4, 11:27). The third reason is a lack of *buy-in* (as also predicted by the developer - see Section 8.1.3). This is because renters "may see it [the scheme] as less like their community... having been involved for less time" (C2.4, 12:24) and because "people who are not owners... haven't made such a big financial commitment" (C2.4, 12:24). These three reasons - impermanence, inequality and a lack of buy-in - may explain why the tenants at Marmalade Lane might choose to engage less with the work of management.

Given these uneven levels of engagement, it is curious that the founding group agreed lease terms that neither ruled out subletting nor ensured that the stability, security and agency offered to tenants was similar to that of owners.

One explanation for this decision is that the group was in fact responding to what one resident described as, “the Wave”, during which “the houses become completed and the developer is desperate to sell them and not sit on them losing money for a year or 18 months” (C2.3, 25:22). This was a critical moment for all stakeholders because a balance needs to be struck “between the developer just wanting to get them sold and the cohousing group wanting to get people who want to live in cohousing buying them” (C2.3, 31.03.21). Further, these competing aims had to be resolved in a short timeframe because the market for cohousing is small (P2.1, 34:33) and the product “doesn't suit a lot of people” (C2.6, 44:55). Thus, the onus appears to have been on the group to shift from the ideal, homogeneous demographic that they had tried to guarantee during the values-based decision-making process. This meant allowing some people to sublet or allowing the developer “to sell to anyone who wants to buy them” (C2.3, 25:22). In the context of sales pressure and the determination to keep control of the group’s ‘badge of identity’, it is perhaps unsurprising that the resident group chose to allow existing members to buy second homes to rent to people of their choice.

In summary, Section 8.3.3 shows that the process of ‘values-based decision-making’ cemented a shared set of political, occupational and educational values that made it harder to accommodate views or needs that diverged from those of the founding group. This meant that when faced with the choice between allowing the developer to sell on the open market or allowing some members to become landlords, they chose the latter as a way of keeping control over the group demographic. The lease terms, however, exclude renters from the sense of permanence and buy-in afforded to owners, with the effect that tenants engage less than owners and there is resentment because the work of management, maintenance and decision-making is unevenly distributed.

8.3.3. Adjustable tenure at Pocket Living: the consumers' perspective

A salient characteristic amongst Pocket Living's target demographic is that many see both renting and ownership as risky. On the one hand, they see rented tenure as insecure and for that reason, are keen to escape, whilst on the other hand, they worry about the financial exposure of committing to the property market and the risk of owning what they know will not be their 'forever home'. This tension between commitment and investment risk is helpful as a frame for understanding - through the Pocket Living experience - how the demographic at Marmalade Lane might have been different, had it met the tenure needs of this typically younger segment of the homebuyer market. Thus, the findings concerning the residents' views on commitment, investment and demographic are considered in turn.

8.3.3.1. Commitment

Turning first to the question of *commitment*, Pocket owners see both insecurity and opportunity in the private rental sector. For example, some owners are "just very grateful to be in a situation of having stable accommodation after many years living in shared housing and renting" (C1.2, 13:17). At the same time, owners reflect that "the great thing about renting is theoretically, at the end of the year, you can just do whatever you want" (C1.3, 23:32). On the basis of these statements, it appears that the revealed preference of Pocket buyers is the security of owning rather than the flexibility of renting - as would be expected, given their decision to transact.

Yet, the Pocket residents also describe a sense of vulnerability, suggesting that they are not as committed to becoming homeowners as it appears. This is because some owners' worry that factors such as job security and Brexit could cause them to fall out of owner occupation and become renters again if their needs or circumstances changed, "because it feels like suddenly you're

precarious and if anything goes wrong, you could end up losing your own home" (C1.4, 25:15, 32:15, 38:04). As one resident pointed out, this is a justifiable concern because people will not be able to trade up unless they have access to the same combination of discounts and credit that they had when they bought their Pocket flat in the first place (C1.3, 29:00 & 29:45; C1.4, 25:15). In other words, their options for trading up are restricted because the opportunity that Pocket gave them is unlikely to come around again.

8.3.3.2. Investment risk

Pocket owners appear similarly torn around their decision to *invest* in property. On the one hand, they feel that owning "still probably puts you out in front over paying rent" (C1.2, 30:22; C1.5, 20:07). On the other hand, they worry about the financial risks of housing market volatility (C1.5, 20:07). This is of particular concern because owners tend to recognise that in choosing to buy, they have made a financial commitment to a place and a size of dwelling that would be costly to change (C1.3, 23:32 & 24:53). As one owner explains, "I knew I'd need to move from that flat when I bought it... [but] probably it doesn't make sense to sell within five years because of all the tax" (C1.3, 24:53).

Owners' concern for the risk of ownership appears to outweigh any expectation or desire for capital gains. This is to the extent that buyers say they would have been receptive to *any* percentage of part-ownership, had this been available, regardless of the fact that this would have handed a slice of any value uplift to a third party investor (C1.2, 36:51; C1.3, 19:07). Thus, unlike many owners of UK property, Pocket buyers' do not appear to be motivated by the prospect of investment gains. Nevertheless, whilst some owners would be happy to be less exposed to housing market volatility - and accept the gains would be smaller as a consequence - there is evidence of reticence amongst the owner group around shared ownership. For some, this reticence is because a traditional, mortgaged home purchase through a bank or building society will always be

preferable to an outside investor, these being the simplest and most *familiar* options (C1.5, 24:56). For others, it is "the idea of still having to pay extra in basically *rent* for the share that I don't have" (i.e. own) (C1.5, 24:56). On top of these is the problem of *trust*, especially amongst those who researched shared ownership alternatives at the time of buying and found them to be "a really bad deal" (C1.3, 30:22 & 30:57).

Pocket owners also appear to hold anxieties that they might lose *control* if they were to enter into a part-ownership arrangement with an outside investor. Part of this is control over finances, because shared ownership means sharing equity with an unknown third party whose values and objectives may be different from the occupier's (C1.3, 30:57). Another part is control over their own home and home environment, because as a mortgaged owner, "you can, within certain bounds, do what you want with it, compared to having a rented place" (C1.4, 38:24). Thus, the consensus of participants appears to be that owning "is much better than shared ownership because I get to own it all" (C1.5, 23:47). This confirms a view in the literature that outside finance is not gaining traction, even amongst groups on the edges of owner occupation (Whitehead and Williams, 2020).

8.3.3.3. Demographic

These views on risk and control suggest that the *demographic* of Pocket Living schemes is not as 'age-specific' as was assumed by either the developer or the architect (see Section 8.1.4). Rather, one owner describes the demographic as, "more like a kind of thirty-something, forty-something, very urban population really, where you have a mixture of couples and single people… one person who is maybe over fifty" and at least one baby (C1.4, 00:47; C1.5, 00:42 & 01:36). Indeed, the resident survey shows that there is a spread of ages, with a third of respondents being under 30 years old, another third aged 31-40 and a third over 40 (C2.1, Q1 & Q2). One explanation for this is that 75 percent of

respondents were original purchasers, and are now therefore six years older than they were when they bought their Pocket flat (C2.1, Q1 & Q2). There are, however, newcomers that include at least one 'older' resident whose decision to buy a Pocket flat has been formed by a combination of affordability and "lifestyle change" (C1.3, 05:17 & 06:18). These observations help to show that the Pocket demographic can, in fact, be characterised as much by people who "want to go for the lower risk option" (C1.4, 26:20), and for whom a Pocket flat is a way of accessing the security of owner occupied tenure but with the minimum of financial exposure (C1.2, 25:57; C1.3, 30:57; C1.4, 24.03.21). In this context, Pocket's offer of a limited right to sublet in the event of life course change (P1.2, 11:23) (Pocket Living, 2020d), seems valuable.

In summary, Section 8.3.5.1 *(Commitment)* showed that despite having been motivated by the security of homeownership, Pocket buyers still reflect on the flexibility they had when they were tenants and worry that despite having committed to homeownership, trading up will be harder than moving back into rented accommodation in the event that their circumstances were to change. Section 8.3.5.2 *(Investment)* showed, however, that whilst Pocket buyers would be receptive to part-ownership as a way of trading-up - and would even accept a smaller capital gain as this was anyway not their motivation for buying in the first place - they remain circumspect about any alternative to mortgaged ownership for reasons of trust, control and familiarity. This is because, as shown in Section 8.3.5.3 *('Demographic'),* the defining characteristic of Pocket owners is not age but lifestyle change and preference for familiar, but lower risk, ways of accessing a tenure that is secure and stable but also financially sustainable over the longer-term.

8.4. Adjustable tenure: a summary

In Chapter 8, I gathered together stakeholders' views on the implications and opportunities of *adjustable tenure* - that is, mechanisms for adjusting tenure or equity over time. This - the first of the three dimensions of the adjustable housing thesis - can be conceptualised as 'less-than-whole-home' ownership (Miles, 2015, pp. 28 & 33; Ong ViforJ *et al.*, 2021, p. 2007) and could help to balance out advantages and disadvantages between tenures, by allowing occupiers to exchange a lesser economic return for a gain in financial freedom (Sen, 2010, pp. 104 & 236–7). To evaluate this concept, I considered adjustable housing in terms of three criteria: adjustable *commitment* - that is, the right to rent or sublet; adjustable *investment* - that is, ability to adjust an equity stake up or down; and, adjustable *demographic* - that is, the ability to accommodate differences in values, identity and needs.

First, in Section 8.1, I considered the producers' perspective on the need for adjustable tenure. In Section 8.1.1 *('Adjustable commitment'),* I showed that from the developer's perspective, the substantial risk of developing private sale housing for buyers who are not contractually committed can only be managed if a third of sales are contractually committed at project inception and another third before construction. Section 8.1.2 *(Adjustable investment')* showed that from the developer's perspective, a commitment from an outside investor (e.g. an institutional buy-to-rent partner) to buy a third of homes at project inception and another third before construction, would not only have substantially lowered the development risks at Marmalade Lane but make the wider social, environmental and design objectives more achievable. However, Section 8.1.3 *('Adjustable demographic')* showed that from the developer's perspective, a mixed tenure solution at Marmalade Lane would have created new risks, because owners perceive tenants to be less culturally, financially and practically committed which, in turn, can risk making prospective buyers less committed to a project themselves.

Turning to Pocket Living, Section 8.1.4 showed that the developer's insight into their customers means they have the confidence to develop single tenure, single-size schemes, safe in the knowledge that if one buyer cannot *commit*, there is another on the waiting list ready to take their place. Nevertheless, Pocket is likely to offer some rented tenure flats in the future as a way of diversifying their *investment* portfolio. Meanwhile, Pocket Living is aware that their age-specific buyer *demographic* is increasingly nervous about changes in employment, the housing market or their housing needs. Thus, there is a growing awareness of a need for more flexibility around tenure to meet changes in economic circumstances, market sentiment and consumer aspirations.

Turning to the planners' and enablers' perspective on tenure, Section 8.2.1 *('Adjustable commitment')* showed that had there been a mechanism for the group to *collectively* own some properties at Marmalade Lane for the purposes of renting or part-renting them, it would have offered an attractive investment opportunity for some members, as well as another way of capitalising the project besides private sublets. However, Section 8.2.2 *('Adjustable investment')* showed that the founding members wanted Marmalade Lane to be an entirely - and permanently - private sale scheme, because mixed tenure housing is perceived as bringing complexity and a misalignment of purpose, especially if funded by a housing association or build-to-rent investor. Section 8.2.3 *('Adjustable demographic')* showed that this happened because the process of "values-based decision making" at Marmalade Lane allowed people who had the time and housing wealth to stay involved with the project to decide who they wanted their neighbours to be, thus producing a membership where 95% of members had such similar values that they saw the brief as a "badge of identity". Section 8.2.4 showed that Pocket's single-size, single-tenure, private sale schemes attract more planning conditions because the planners' preference is for family social rent.

Lastly, turning to the consumers' perspective on tenure, Section 8.3.1 *('Adjustable commitment')* showed that although the founding members at Marmalade Lane are committed to inclusivity and aware that their involvement excludes people without existing housing wealth, they nevertheless acted in a way that has denied tenants the level of adjustability and tenure security that owners enjoy. Section 8.3.2 *('Adjustable investment')* showed that one reason for this is that the group's priorities were to invest in property and insure against changes in their own housing needs, and therefore they were willing to allow members to buy second homes to privately sublet on their own terms. These appear to have precluded some residents' preference for a non-binary tenure solution that allows renters the option to buy or part-buy their home over time. Section 8.3.3 *('Adjustable demographic')* showed that another reason that the founding group allowed their members to buy second homes to sublet was that the *values-based decision-making* process at Marmalade Lane had cemented some shared political, occupational and educational values that would have been threatened had the developer sold the unbought homes on the open market.

For comparison, Section 8.3.4 considered the consumers' view on a more adjustable tenure at the Pocket Living case study. Section 8.3.4.1 *('Commitment')* showed that despite having been motivated by the security of homeownership, Pocket buyers still reflect on the flexibility they had when they were tenants and worry that a move back into rented accommodation may be more financially realistic than trading up, were their circumstances to change. Section 8.3.4.2 *('Investment')*, however, showed that whilst Pocket owners did not buy with any expectation of a capital gain - and would therefore be willing to divide any future gain with a shared ownership provider if it enabled them to trade-up - they remain circumspect about any alternative to mortgaged ownership for reasons of trust, control and familiarity. Section 8.3.4.3 *('Demographic')* shows that an important reason that Pocket owners seek trust, control and familiarity is that their common characteristic is not age *per se*, but a desire for lower risk

ways of accessing a tenure that is not only stable and secure, but also financially sustainable over the longer-term.

A synthesis of the findings from Chapter 8 and recommendations for ways of delivering a tenure arrangement that makes housing more adjustable over the longer-term, are developed in Section 11.1 (below). First, however, in Chapter 9, I turn to the potential for individual dwellings to support changing housing needs without altering either the external envelope or the total floor area of a development.

9. Adjustable dwellings: attitudes to private space

Chapter 9 gathers together stakeholders' views on the implications of more adjustable *dwellings* as a way of providing owners with longer-term adjustability against housing needs that can and will change over the longer-term. Adjustable dwellings comprise the second axis of the adjustable housing thesis presented here. This concept - the second axis of the adjustable housing thesis - is developed from the architectural literature in Chapter 3. Here I showed that an adjustable dwelling is distinct from a flexible dwelling, because it infers a design that is passively adaptable to the extent that alterations may be made with little or no physical change to the building fabric (Groak, 2002, p. 15). Thus, whereas a flexible dwelling might be extended over time to create a net increase in the development area, the variables in a scheme made up of *adjustable* dwellings would be the number of dwellings or bed spaces. In other words, whereas the development density (i.e. dwellings per hectare or number of residents) can vary, the total floor area and the physical building envelope remains unchanged.

The literature described three ways in which a dwelling might become adjustable. Of these, the most passive is to make rooms and total floor area big enough that they can be adapted internally, so that the layout, room uses or number of bed spaces can be varied by the user. This is referred to below as *adjustable floor space.* Alternatively, a scheme can contain a variety of dwelling sizes so that - with some upheaval and contractual agreement - households can make house swaps from time to time. This is referred to below as an *adjustable housing mix.* A third - and yet more active solution - is to allow some variation in the number and size of dwellings. This requires flats that can be merged or divided to meet changes in demand, and is referred to below as *adjustable density*. These are illustrated in the Venn diagram below.

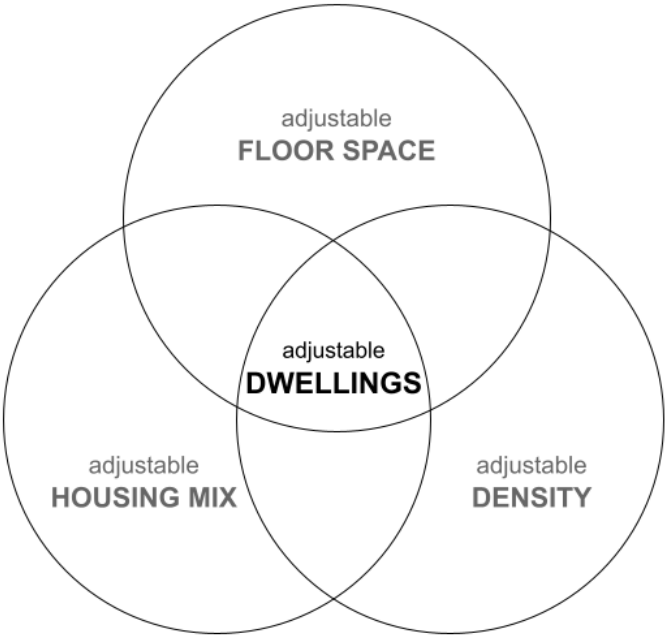


Figure 17: *Venn diagram showing the three aspects of adjustable dwellings (author)*

To evaluate these, this chapter follows the same pattern as Chapter 8, by presenting the findings related to the three different approaches from the perspective of each stakeholder group. These are, the producers (i.e. developer, architect and estate agent), the suppliers (i.e planners and the enablers of the briefing process), and lastly, the consumers at Marmalade Lane. Each section then concludes with the views of the equivalent stakeholder group at Pocket Living with the findings from both case studies summarised at the end of the chapter.

9.1. Adjustable dwellings from the producers' perspective

In this section I look at adjustable dwellings from the point of view of the producers - that is, the architects, the developers and the estate agent at Marmalade Lane and Pocket Living. Section 9.1.1-9.1.3 concern Marmalade Lane

only, where Section 9.1.1 *(Adjustable floor space)* considers dwelling space and the costs and benefits of a custom build approach; Section 9.1.2 *(Adjustable housing mix)* turns to the housing mix and the ways that this can both empower and exclude; and, Section 9.1.3 *(Adjustable density)* looks at how dividing or joining dwellings are affected by the design, size and construction system. In Section 9.1.4, I revisit each of these same three themes but with regards to the planning and space standards legislation, as applied to Pocket Living developments.

9.1.1. Adjustable floor space at Marmalade Lane

As shown in Section 8.1.1, the developer's priority at Marmalade Lane was to manage their risks. The previous chapter described how this can be achieved using alternatives to mortgaged ownership, such as shared ownership. This section continues this theme by showing that the developer can also manage their risks by increasing the housing density and thereby potentially increasing the development value. At Marmalade Lane, the density of the site increased from 38 homes to 42 homes, in the outline and then full permissions respectively (Baird, 2016). This increase in density allowed the developer to secure a higher profit margin as a buffer against their risks but more importantly, enabled them to outbid their competitors when agreeing the land price (P2.1, 33:03).

The developer's advantage appears to have been secured by means of four different strategies. The first was to target a very *different market* from their competitors. This was possible because "cohousing people come from a background where they've got a bit of equity and want to live in a particular way" (P2.1 07:06). The developer's second advantage was that they chose to "hire a proper architect" and do "good *design*" (P2.1, 34:33). This enabled Town to achieve a higher density than their competitors because typologically, volume house builders "are not interested in anything other than private space" (P2.1,

34:33). The developer's third advantage was in their facility to consult users when writing the brief. This gave Town the assurance of knowing that their target buyers would be more likely to accept a much smaller home than they otherwise could have bought (P2.1, 23:20), on the condition that any loss of private space is compensated for by the provision of other amenities (storage or washing machines, for example), somewhere else on the same site (P2.1, 34:33). Finally, the developer's fourth advantage was to build-in a series of customisable options into a standard house type (P2.2, 13:49). In the sales agent's view, this meant that the project was not only cohousing but also *custombuild*, rolled into one (P2.3, 01:31) which, in the architect's view, helped to make the compact homes more appealing to a wider pool of buyers (P2.2, 13:49).

Put together, these four advantages show the strategic role that floor space and density can play in capturing buyers who are willing to pay "a bit of a price premium" so that even a narrow and specialist market still has the depth to offset the developer's risks (P2.1, 34:33). They also explain how Town is able to claim to have minimised their exposure to the sorts of planning and sales risks that are normally associated with speculative house building (Town, 2019c). Nevertheless, each of these opportunities also brings other risks. For example, to capture the right buyers at the right price, the developer needs to pay more to employ "a proper architect" and build "a better scheme" (P2.1, 34:33). Likewise, trade-offs between private and shared space mean that whilst the price per dwelling was "middle of the road for Cambridge" (P2.3, 19:44), buyers had to be willing to pay more per *square metre* than local equivalents (P2.1, 25:18). Thus, the developer's risk of pursuing density was that they might fail to find people willing to pay more for less private living space.

In this context, the adjustability of the floor space appears to be an important way of adding both value and attracting sales. This is because, from an architectural point of view, "building in a series of options into a standard house type" means the scheme will "appeal more specifically to a wider number of

people" (P2.2, 13:49). On top of these, from the sales agent's perspective, there is added value in homes that are designed to have enough "functionality to adapt as people's needs grow or if they get a slightly bigger budget" (P2.3, 04:32). From the architect's point of view, this is "a realistic version of adaptability over time," because it gives people the option, for example, of buying attic space to convert when future needs and finances align (P2.2, 38:39) - an approach described as "expanding within" (Schneider and Till, 2007, p. 140).

The value of unfinished space, however, is small This is because whether finished or not, it will still be costed into the value of the land and therefore the sales price (P2.2, 13:49, 21:53, 25:34, 38:39). Instead, the value of customisable floor space is that it enables people to "feel like they were a part of a process" (P2.1, 26:39) and thereby adds depth to a shallow market (P2.1, 34:33). The literature describes this strategy as a way of making people so emotionally attached to their future home that they become less likely to walk away (Sharam, 2020, p. 13). In contrast, too many options adds complexity without making people any more attached to their future home. Thus, with the benefit of hindsight, the architect believes they "could have cut down the number of options by five... and probably it would have been equally successful" (P2.2, 29:46). Indeed, the sales agent goes further, believing it "would have driven higher value" had the developer simply handed over the homes without leaving unfinished space to expand into (P2.3, 01:31).

Given that the objective of the custombuild approach was seemingly to provide enough optionality to ensure buyer attachment, it is perhaps unsurprising to hear from the architect that the homes were only designed to be "adaptable at the outset" (P2.1, 26:39). This was because adjustability "wasn't part of the model... even though," as the architect reflects, "I know from working for years and years on family houses that that's inevitably what people want to do" (P2.2, 38:39). One reason for this is that, in reality, "it's very difficult to buy space that you don't need and then not have to pay for it" and therefore, the design team

“didn't really think about the future or significant change to the property, and how that was going to work” (P2.2, 38:39).

In summary, Section 9.1.1 has shown that the main benefit of the custombuild approach at Marmalade Lane was that it helped to mitigate the developer’s risk by improving buyer attachment and market absorption. From an architectural and sales perspective however, unfinished, customisable space for *expanding within*, did not add value and was only designed to be adjustable at the outset.

9.1.2. Adjustable housing mix at Marmalade Lane

A second way to enable adjustability over time is by creating a *mix* of dwelling sizes so that people are free to buy the home they can afford and then make house swaps over time. By offering buyers a range of price and size options, this approach has the potential to avoid the problems of buying unfinished space and making one-off adaptations that were raised above (see Section 9.1.1). Such was the intention at Marmalade Lane, where the developer believes that within the scheme, “you absolutely can have people who go, in theory, from a one-bed flat to a five-bed house and back again over their life, without leaving” (P2.1, 28:36).

In the developer’s view, this approach is simply “a different form of adjustability” and offers a “lifetime view” that adds development value (P2.1, 28:36 & 29:35). From the architect’s perspective, it has the added social benefit of making people more likely to stay in the community because when homes become available, the rules say that existing residents should have first refusal (P2.2, 28:27). Further, the developer observes that a mix of dwelling sizes is one reason that the scheme is “genuinely multi-generational, in a way that I don't often see in other cohousing groups” (P2.1, 23:20).

However, the opportunity to fix the housing mix is also a way of *excluding* certain user groups. This can be inferred from the sales agent’s advice to limit

the number of smaller units, on the basis that too many of these “would attract first time buyers [and] singles as well, probably” (P2.3, 26:06). This was on the basis that cohousing is specifically to “suit couples, young families or families even at a slightly advanced age, and then perhaps couples whose grown-up kids have flown the nest and they just want to be involved” (P2.3, 26:06). Thus, from a sales perspective, control over the housing mix is one way of ensuring a demographic outcome that is “family housing-led,” and alongside, designs “the smaller units for down-sizers rather than up-sizers” (P2.3, 26:06).

In summary, a mix of dwelling types and sizes does, in theory, empower residents by allowing them to adjust their housing by making house swaps from time to time. This can support the changing needs of both expanding and contracting households and importantly, does not force people to leave the community when their needs change. However, the sales advice appears to have directed the mix towards a fixed set of spaces to suit a demographic that “would help the concept” (P2.3, 26:06). Ultimately, this fixed approach to the housing mix appears to have limited the adjustability of the scheme by ensuring the exclusion of certain groups or needs over the longer-term.

9.1.3. Adjustable density at Marmalade Lane

A third way to enable adjustability over time is to enable dwellings (or parts thereof) to be divided or joined to the neighbouring unit from time to time. This would have the inevitable effect of changing the overall density of the development as, for example, two 1-beds merge to become a 3-bed or a house splits into two separate flats. At Marmalade Lane, however, the idea of making the unit sizes adjustable “was not something that came up” (P2.2, 29:46).

From the developer’s point of view, this was because “the idea of adaptability through time, doesn't sit well with the idea of homes now being well made, and well engineered” (P2.1, 26:39). One reason for this is that technical performance

and offsite manufacture were priorities, and especially so, given that Trivselhus - the 100% equity partner at Marmalade Lane - required the project to be manufactured using their own, highly energy efficient, factory-made, timber panelised system (Trivselhus, 2019; UK Cohousing Network, 2020). This has produced homes that are "generally pretty finely balanced machines that you play with at your peril" (P2.1, 28:36).

From the architect's point of view, however, the problem is not one of construction *per se*, but of dwelling size. This was because "there are not any small, one-bed apartments that you would have been able to make into double the size and make it a three-bed" (P2.2, 29:46) - perhaps as a consequence of the sales agent's advice that the scheme be "family housing-led" (P2.3, 26:06). As a result, the agent's view is that the homes are too large to be joined but too "modest in scale" to be divided into separate flats (P2.3, 06:17). On top of this question of scale, the sales agent also saw problems of *layout*, because, in their view, a divisible dwelling would need around 1600 sq ft (150m2) on each floor to work well, whereas the dominant townhouse typology at Marmalade Lane only has c300-400 sq ft (c30-40m2) per floor (P2.3, 06:17).

Nevertheless, the developer is interested in exploring "how late in the design journey you can bring potential residents in and still get that intentionality" (P2.1, 15:33 & 16:04). This is an ambition which requires a scheme to be as adjustable as possible until as late as possible. On this basis, a mix of dwellings that are too big to be joined or too well engineered to be divided, appears to make a scheme harder to adjust to the needs of later buyers. Given that "you're going to be extremely fortunate if you manage to get and keep the right number of people for the right number of dwellings from planning, right the way through" (P2.1, 07:06 & 08:30), such inflexibility would appear to increase the sales risk, as well as limit adjustability for future users.

In summary, the divisible and joinable dwellings could mitigate sales risks and make a scheme adjustable into the future. However, adjustable density was not

considered at Marmalade Lane and was anyway precluded because the flats were too big to be joined, the townhouses were too small and the construction system was too inflexible. Pocket Living on the other hand, contains smaller units and is therefore a typology that naturally avoids the architectural problem of over-large units. The next section considers this and other strategies for improving adjustability but for a demographic that was absent at Marmalade Lane.

9.1.4. Adjustable dwellings at Pocket Living: the producers' perspective

In terms of the private dwellings and development density, Pocket Living is not considered to be an adjustable product by either the architect of the case study or the developer themselves. From the architect's perspective, "adaptability doesn't really come up… it's just not really on the agenda" (P1.3, 33:05). From the developer's point of view, this is simply because when flats are "designed to maximise every inch of space" (P1.1, 00:10) it "just doesn't give you that flexibility" (P1.1, 25:14).

Nevertheless, Pocket aims to exceed regulatory minimum using what they call, "intelligent design" (Pocket Living, 2020d) that includes enhancements such as higher floor-to-ceiling heights (P1.1, 00:10; P1.2, 08:09). Design benefits like these help Pocket to compete against larger and cheaper resells in the local area (P1.1, 00:10). They also offer a sense of space in lieu of a more compact floor area, "which enables us to build more homes on a development than traditional developers" and thereby maximise both densities and development value (Pocket Living, 2020d). However, there is no evidence that Pocket's *intelligent design* approach includes enhancements that could improve the adjustability of the scheme over the longer-term.

Likewise, Pocket's affordability model requires flats to be "specifically designed… for first time buyers and then, in perpetuity, to be passed on to the next one" (P1.3, 33:05). Therefore, as far as the architect's brief is concerned, "the layouts are never going to change" (P1.3, 33:05). Indeed, in the developer's opinion, such inflexibility is essential because "none of them [flats] will be for people to have a spare room for something that might happen in the future because the need is now" (P1.1, 25:14). Instead, the first priority for the design of Pocket flats is that they are "100% affordable" to buy and therefore, "like yacht design… each flat is designed to maximise every inch of space" (P1.1, 00:10).

One consequence of this approach is that, from the architect's point of view, "very sensible" ideas like joinable flats are "not really on the agenda" because "adaptability doesn't really come up" (P1.3, 33:05). From the developer's point of view, there seem to be five reasons for this. The first is *legal*, because joinable/divisible flats - though they "sound like a good idea" - would create complex leases (P1.2, 16:43 & 17:08). The second reason is *logistical*, because flat layouts (e.g. kitchens) would have to be moved around at each joining/dividing event (P1.2, 16:43 & 17:08). The third is *commercial*, because, in the developer's view, "there'd be a very small number of people that would go for that option" and therefore it "wouldn't represent good value" (P1.2, 16:43 & 17:08). The fourth is a *void risk*, in a scenario where owners had the option of renting an adjoining flat to join onto (P1.1, 33:56). The fifth reason is *technical* and is important because Pocket uses a combination of repetition, uniformity and modular construction to ensure that their flats are both affordable and viable to build (P1.1, 07:39).

The corollary of these barriers to adjustable dwellings and density is that Pocket flats are - by the developer's admission - only suitable for "a certain, defined demographic" from a tight age cohort, whereas families or even downsizers "would be highly problematic", despite both being "a big part of the market" in urban areas (P1.1, 02:24, 10:25 & 27:13). Likewise, from the architect's

perspective, their small size makes them “age specific” and only suitable for a certain “younger demographic” that is out a lot and is very urban (P1.3, 02:28, 05:49 & 06:42). Further, it is designed in such a way as to make it unappealing to older downsizers, even though the model could be readily adapted to include this group (P1.3, 06:42).

In summary, it appears that neither an adjustable floor space nor an adjustable housing mix are financially viable because Pocket’s affordability model relies on the efficiency of repetitive, modular, off-site construction wherever possible. Meanwhile, an adjustable density - by means of joinable/divisible flats - is commercially untested, creates legal, technically and logistically challenges, and could create void risks.

9.2. Adjustable dwellings from the suppliers’ perspective

In Section 9.2, I look at adjustable dwellings from the point of view of the suppliers - that is, the suppliers of planning policy (i.e. the planners) and, at Marmalade Lane, the suppliers of developable land (i.e. the enablers who worked with the founding resident group on behalf of the landowner to develop a brief that would unlock the site). The findings from both Marmalade Lane and Pocket Living reveal a 'tug-of-war' relationship between the planners and those writing the brief. Sections 9.2.1-9.2.3 below consider Marmalade Lane, with regards to the same three themes that were discussed in the previous section - that is, *adjustable floor space, adjustable housing mix,* and *adjustable density*. In Section 9.2.4, I revisit each of these same three themes but with regards to the planning and space standards legislation, as applied to Pocket Living developments.

9.2.1. Adjustable floor space at Marmalade Lane

Turning first to the planning advice that was applicable at Marmalade Lane, the only mention of adjustability is in the planning guidance, as found in the local sustainable development policy. This requires new housing to "achieve *adaptable*, compact forms of development through the use of higher densities" (South Cambridgeshire District Council, 2011, para. DP1.c). On this basis, it was reasonable that the enabler should have steered the resident group towards solutions which prioritised the "short-term flexibility and long-term adaptability of the buildings" (S2.1, 11:37).

To achieve these aims - and to meet the relevant planning guidance - the enabler presented adjustability to the user group as an outcome that could be realised within the dwelling envelope itself, rather than relying on extensions. In the first iterations of the design, this was to be achieved by reconfigurable, three-storey terraced houses with unfinished voids "so that the buildings could be extended into the attic" or into "garages on the ground floor" (S2.1, 11:37-16:49). This approach aligned with the planner's aspirations for a scheme with "bigger plots and bigger houses [which] allow for adaptation of use in different ways" (S2.2, 15:07), representing an approach that the literature describes as "expanding within", in which more space is considered to make a dwelling more adjustable (Schneider and Till, 2007, p. 136).

Alongside this strategy, a complementary aspect of the enablers' adjustable design approach was to seek permitted development rights so that the member-owned freeholder company (Cambridge Cohousing Ltd) would have the power to permit future building alterations without needing further approvals from the planning authority (S2.1, 06.04.21). Taken together, the combined strategy of *expanding within* and permitted development rights supported the enablers' briefing goal of ensuring "flexibility or long-term adaptability" (S2.1, 16:49). Indeed, the planner's recommendation is that schemes like Marmalade Lane should "seek permission for the lot" by using

design codes to show how one expands or contracts the buildings using permitted development rights (S2.2, 11:49) that could even anticipate radical changes like the conversion of shared amenities into residential uses or vice versa (S2.2, 27:37).

In practice, however - and despite “early steps to engage the planners… [from] the very first workshop” (S2.1, 55:03) - the planners “wouldn’t counter any future variations” (P2.2, 07.04.21). This was because the enabler-led co-design process had produced “quite a rigid framework, [that] clashed very heavily with the local design guide” (S2.1, 46:37) but as a result, the planning process at Marmalade Lane became “so, so heavily locked” (S2.1, 55:03). This was to the extent that the original planning application had to be written to anticipate “things that we knew were not going to be built immediately (e.g. dormer windows) so they had permission for future conversion” (P2.2, 07.04.21).

Such preemptive design coding was necessary because the planners “didn't know how to write it in a planning permission” (S2.1, 53:35). In taking this approach, however, the priorities of the enabler appear to have shifted from an ambition to make the scheme adjustable in the longer-term, to a more limited goal of securing a planning approval that allowed scope for pre-determined customisation in the shorter term. This was further complicated by the requirement to anticipate the needs of a group that was only partially formed at the time and expected to change substantially before the project could be built (S2.1, 08:17).

Despite the more limited scope of the custombuild approach, the ‘tug-of-war’ between planners and enablers persisted into the stages where the design codes were actually applied. This is apparent from the planners’ “tendency to stick to [their own] design guide very religiously until it proved to be impossible” to reconcile the Council’s vision with the group’s ambition (S2.1, 51:51). For example, even though there was an approved design code that gave buyers the freedom to choose the colour and bricks on their home from an agreed colour

palette, the planners would not accept the possibility that every buyer might make the same choice (S2.1, 53:35).

Such differences persisted even once the scheme was completed and in use. Indeed, despite the enablers' ambition to give the group freedom and control over their housing during use, the planning officer's recommendation was ultimately "to remove permitted development rights… to protect the visual amenity of the area" (Christodoulides, 2016, para. 49). Thus, the conditions of planning approval denied the resident community the right to adjust the external appearance of their homes in the future, stating that any alterations would need to be "expressly authorised by planning permission" (Baird, 2016, p. 4 Condition 14). As a result, applications for *unforeseen* changes to the external envelope such as window changes to improve attic conversions, have been rejected by the planners on the grounds that they "would ruin the composition" (P2.2, 07.04.21).

In summary, the enabler-led codesign approach produced a framework that was so rigid that the planners - seemingly for lack of trust - denied the resident community the permitted development rights that had initially been integral to the shared goal of ensuring adjustability by means of reconfigurable dwellings. This picture of mistrust between users and planners - each claiming to represent the needs of future users - is an important theme to emerge from the research that I develop in Sections 9.2.2-3.

9.2.2. Adjustable housing mix at Marmalade Lane

Whilst the adjustability of the dwellings themselves was evidently restricted by planning rules (see 9.2.1, above), there remains the alternative approach of creating a *mix* of dwellings. The design of the mix is important not only for inclusivity, but also as an infrastructure for supporting occasional house swaps over time - as was one of the developer's original ambitions (P2.1, 28:36 - see

also 9.1.2, above). To understand whether inclusivity and house swaps were motivations for the early brief - and to establish where the authority for these decisions lay - this section looks at the enabler-led briefing process.

The origins of the housing mix decision lies in the early stages of the *values-based decision-making* process itself (S2.1, 08:17). This was a process that was shaped by the enablers' "six key requirements", of which "short-term flexibility; and, long-term adaptability of the buildings" were two[59] (S2.1, 11:37). However, rather than focussing on these requirements and the opportunity to make the scheme more adjustable for future users (S2.1, 45:15), the enablers reflect that in hindsight, their approach was too "focused on the points that were needed in order to allow that group to move forward" (S2.1, 45:15). This happened because the purpose of the values-based decision-making process was to educate the group, at the same time as preparing them for any 'value engineering' or cost-cutting that could come (S2.1, 38:27). One consequence of this was that decision-making was "very much driven by those who were in the room" at the time (S2.1, 43:17), so that the small, "non-professional client" group could be manoeuvred "to a point where they were happy" and therefore less likely to walk away before the scheme could be delivered (S2.1, 45:15). In other words, the decision-making process was directed towards group cohesion rather than the intended adjustability of the housing.

Another reason that group cohesion was seemingly paramount was that the members needed to be seen to carry authority in the eyes of the planning officers. Thus, the onus was on the enablers (and thereafter, the developer) to sustain the claim that the group - under the guise of "Cambridge Cohousing - had existed in one form or another for 20 years" (P2.1, 15:33). In the developer's view, however, this claim "isn't actually true" (P2.1, 15:33). Rather, the enablers

[59] The others were: participatory design process; consensus-based decision making; spaces and buildings designed to encourage social interaction; environmentally designed homes to reduce the impact on climate change and carbon footprints; and, the provision for productive gardens and creative spaces.

had to promote the cohousing concept at the outset, just to attract a 'foundation group' and test the feasibility of designing with an embryonic community (Instinctively Green, viewed 2020). Thus, in reality, Cambridge Cohousing "didn't have 40 families at the time - or however the final number of dwellings were - there were about 12", and that was a cohort that "was going to change" (S2.1, 08:17).

Nevertheless, in the absence of a more representative resident group, the values-based decision-making process meant this minority group had the opportunity to decide both the design vision and the housing mix, on behalf of future members at Marmalade Lane (S2.1, 11:37; C2.4, 06:01). Importantly, however, the demographic of this executive group was "either at retirement or post-retirement and often single, but having sold a property", or else "young professional couples who were thinking about having a family or had a family" (S2.1, 11:37 - see also 6.2.3, above). This meant there were gaps in the decision-making demographic that were exposed when the group identified "the middle group… [the] 40s and 50s with teenagers," as who they would most like their neighbours to be, yet it was that same demographic that was also missing from the decision-making process (S2.1, 11:37).

This story of a decision-making process led by an executive group with demographic gaps, is counter to the "mythology" of inclusion, consultation, participation and engagement that is often projected around cohousing (P2.1, 15:33). Such a self-selected process, however, is a known phenomenon in cohousing projects and can become self-reinforcing once members with similar wealth, values and education begin to regard each other - and others like them - as 'dependable' buyers (Hamiduddin and Gallent, 2016, p. 375). Nevertheless, the group's authority to propose a housing mix was still recognised in the outline and later the full planning permissions[60] (Baird, 2016).

[60] These permissions approved first 38 homes and then 42 homes, once it was demonstrated that higher densities could be achieved.

The rationale for the Council's decision to adopt the group's proposed housing mix was that it was seen to support "the need of the proposed residents forming part of the Co-Housing Group" (Christodoulides, 2016, para. 42). However, the group's proposal also had the good fortune of being broadly compliant with the local development framework (LDF, Policy HG/2). This is important because alignment between stakeholders' interests and their own, allowed the Council to claim to be "safeguarding future residents from unscrupulous developers" (S2.1, 46:37 & 56:42). Thus, the mix of 1-bed (n=7), 2-bed flats (n=14) and 2-4 bed homes (n=21) that were built at Marmalade Lane (TOWNhus, 2015b, p. 39) was the result of a consensus between planning policy, planning officers and a steering group - each making a best guess at what the eventual needs of the actual community would be.

In summary, despite adjustability being one of the key briefing requirements, the priority of the values-based decision-making process appears to have been to keep the self-selected residents' group together - and in turn, give the impression of a democratic, user-led scheme - by agreeing a housing mix that challenged neither the community nor the Council to accommodate the needs of the majority of members who were yet to join.

9.2.3. Adjustable density at Marmalade Lane

This section continues to gather evidence concerning planning and process at Marmalade Lane. Again, the findings are presented from the suppliers' perspective - that is, the planners and the briefing stage enablers. In this case, however, attention is turned to the ability to divide or join dwellings in ways that could allow variations in housing density over time by adjusting *unit sizes.* This is as opposed to delivering larger, more adjustable dwelling layouts or a varied housing mix for adjusting through house swaps, as discussed in Sections 9.2.1 and 9.2.2 (above).

The findings show that in the original design brief, the enablers aspired to deliver “a bit more granularity in terms of possible design solutions” (S2.1, 16:49) as part of the overall project aim of delivering “long-term adaptability of the buildings” (S2.1, 11:37). Such ‘granularity’ went beyond the strategy of ‘expanding within’ (see Section 9.2.1, above) by proposing that houses should be adaptable into one- and two-story apartments (S2.1, 11:37). This was “so that in the long-term, they could be split or brought together, or adapted in order to accommodate changing families” (S2.1, 11:37). Thus, the ability to vary the housing density over time by variously joining and dividing the dwellings was evidently very much part of the design strategy at the outset of the briefing process.

Despite this evident ambition, however, the enablers’ ability to make joinable/divisible dwellings at Marmalade Lane was obstructed by a statutory requirement to fix the housing density at planning. In the view of the planning officer, this restriction is linked to three underlying planning objectives. The first is that fixed densities give the Council the certainty of knowing that the approved mix will meet the planning formula - both for local housing needs and for the development’s impact on the local area - for example, as affects car parking, school places, healthcare, etc (S2.2, 30:38). The second objective is to push back against what the planner describes as a UK-specific phenomenon, where both industry and policymakers excuse “ever shrinking house sizes and plot depths… with the constant reason being we need to densify our urban areas” (S2.2, 15:07). The planners’ third objective is to retain their authority over “a common understanding of what *good* placemaking is” (S2.2, 42:43).

These three objectives allow the planners to “provide *certainty* that a model will produce better results than would otherwise be produced by volume housebuilders” (S2.2, 45:29), without allowing that model to undermine the statutory authority to act as defenders of people’s right to hold “different perceptions on what 'good places' actually means” (S2.2, 2:43 & 24:22). This

authority is drawn from the local council's position as representatives of the community "beyond the site and beyond the ownership boundary", and is applied on the basis that even a group whose "aims and goals are great… cannot be seen as a democratic voice for the bigger and wider area" (S2.2, 24:22). Thus, even in the face of an ostensibly bottom-up scheme like Marmalade Lane, the planning position is to use their powers of legislation to deliver a housing density that not only meets local housing needs but which also drives space standards towards outcomes that are "more strict or larger, and some kind of regulation that protects the space… for the people that come after" (S2.2, 55:57).

In practice, however, the planner acknowledges that the housing needs data upon which their density criteria are based, "might be a little bit too old by the time the development reaches the stage where it actually gets built" (S2.2, 35:03). Yet, as has already been shown, the desire to protect future users by fixing the housing density, only increases the developer's risk and therefore costs (see Section 9.1.3, above). This is despite the evidence that resident freeholder companies like *Cambridge Cohousing Limited* could offer planning authorities not only another way of appraising housing needs, but a system (using permitted development rights) for adjusting the housing density around changing needs in real time (S2.1, 06.04.21). Thus, while it might appear that the planning position protects the public interest and the interests of future residents, it also puts local authorities in direct opposition to developers whose priority is to manage their risks, whilst giving no quarter to the stated and revealed preference of freeholders.

These observations give rise to the question of why there should be so little flexibility around housing density, given the uncertainty behind the data and the fact that a fixed density creates commercial risks and costs that are likely to make a scheme less affordable. One answer, arising from the planner interview, is that a local authority needs complete *assurance* around development

densities because there is a prevailing climate of “mistrust… between communities and the Council or the communities and the developer” (S2.2, 41:05). According to the planner at Marmalade Lane, this comes from a fear that user-led housing “could be exploited by the volume house building industry themselves, in ways that we haven't thought through” (S2.2, 11:49 & 47:26). For example, any dispensation for user-led housing could become a loophole for a developer to exploit by “marketing places before a planning permission is achieved” and “getting a group to sign up to an existing product that the builders build, that would be termed as self-build and custom-build”, thereby, falsely claiming any privileges that come with that (S2.2, 47:26). Thus, from the planners’ perspective, the risk is that any statutory differentiation between speculative and user-led housing could undermine “democratic accountability… [to] wider community interests… beyond the ownership boundary” (S2.2, 24:22).

Proving accountability by demanding a fixed housing density, however, has consequences for the process of planning approval itself. Firstly, inflexibility means there are “conflicts that arise between planning committees and specialist officers or design teams” (S2.2, 41:05). Secondly, the planning system can become locked when both the planners and the user group have different views on housing needs whilst both claiming “to safeguard future residents from unscrupulous developers” (S2.1, 46:37, 55:03 & 56:42). Thus, the resulting enforcement of a fixed housing mix at Marmalade Lane - and with no permitted development rights to make adjustments during use - was, in the enablers’ opinion, counter to the “spirit of the original intentions” (S2.1, 06.04.21).

Despite this environment of mistrust and fear of exploitation, the planner at Marmalade Lane nevertheless sees that a more adjustable approach to housing density could be both beneficial and achievable. Indeed, the planner makes two recommendations for achieving this end. The first is to recognise that housing needs data - as well as the local register of interest in self-build and

custom-build[61] - should be viewed "with a bit of scepticism" (S2.2, 35:03) because "there needs to be a refresh or update… more regularly, to understand the true nature of what the housing need for the area really is" (S2.2, 35:03). The second is to use the planning process "to understand the overall implications and impact of the maximum scenario of the development" on parking, schools, streetscape and local amenity provisions (S2.2, 30:38).

Taking this impact-led approach, the planner's view is that an agreed maximum and minimum number of people - informed but not determined by local housing need data - could become an acceptable, scenario-based framework approving a development (S2.2, 30:38). On this basis, the planner's view was that "we probably need to move towards approving floor space, rather than approving density on the site", so that the specific housing mix is decided through "a slightly more open conversation around a built form that is more known and fixed" (S2.2, 30:38).

In summary, Section 9.2.3 shows that from the planner's perspective, whilst the uncertainty of an adjustable density presents a risk to their statutory authority, their fear of exploitation and reliance on out-of-date housing needs assessments - which in turn caused conflict with the enablers during the briefing process - could be mitigated by a *scenario-based approval framework* based on agreed maximum and minimum dwelling numbers.

9.2.4. Adjustable dwellings at Pocket Living: the suppliers' perspective

Pocket Living offers a useful comparison against Marmalade Lane not only because the schemes represent a demographic that is mostly absent at Marmalade Lane, but also because their standard dwellings are smaller and more repetitive. These characteristics make it more likely that adjustability will

[61] As required of local authorities by law since the introduction of the UK's 'Self-build and Custom Housebuilding Act', 2015 (*Self-Build and Custom Housebuilding Act 2015*, 2015)

be critical to the longer-term success of the architecture, especially over the longer-term. To understand how the brief and planning position respond to this need, the following sections address the same themes as above - that is, adjustable floor space and adjustable housing mix, but without a commentary on joinable/divisible units, due to a lack of planning insight in this regard.

Turning first to the private floor space, the Pocket model provides an unusual insight into the function of planning legislation in limiting adjustability, even when there is evidence to support an alternative approach. This is because, in 2014, Pocket supported design research to find ways of addressing the specific adjustability needs of buyers "whose lives change and their homes should change to fit them, not the other way around" (Fulcher, 2015 quoting Mikhail Riches Architects). Working with a number of UK architects, this research demonstrates that a c40% increase in floor area can produce "a robust flexibility catering to different households and ownership models" (Fulcher, 2015, pp. 22–27). Having a floor area of 51-58m2, this two-bed/two-person flat type is demonstrably capable of being continuously adjusted to meet the needs of couples, flat sharers, young families or downsizers with occasional guests (Fulcher, 2015, pp. 22–27) and, for these reasons, the architect's view is that the model is "incredibly interesting" (P1.3, 33:05). Yet, despite the evidence, the legislative position makes no allowance for two-bed/two-person arrangements and instead forces a step up to 61m2 for a two-bed/three-person flat or 70m2 for a space standards-compliant two-bed/four-person flat (Department for Levelling Up, Housing and Communities, 2015)).

Meanwhile, Just as there are barriers to giving owners space to adapt, so too are there legislative barriers to creating a *mix* of dwelling sizes to suit a known user group. For example, despite the fact that Pocket has access to relatively complete customer information, by virtue of the "18,000 people that are registered" on its database (P1.1, 05:58 & 09:31), the mix at Pocket schemes "has been planner driven rather than Pocket driven" (P1.3, 10:53, 24:52 & 35:00). This

means that despite knowing that their first buyers will come from “such a narrow cohort” (P1.1, 05:58) and will be sold according to income and locational criteria (P1.3, 35:00), Pocket’s single-size, single-tenure model is “not what a lot of planning officers and councillors would want” and therefore “quite challenging in planning terms” (P1.1, 19:45; P1.2, 13:56; P1.3, 45:06).

The corollary of this legislative environment is that whilst Pocket’s preference is a more adjustable, two-bed/two-person model, space standards makes this legislatively impossible (P1.3, 33:05), whilst their alternative - a harder-to-adjust one-bed/one-person typology - creates conflict at planning because a lot of planning officers and councillors still see this as being smaller than they would want (P1.3, 45:06). As a result, there is not a model that is simultaneously adjustable and financially viable at the price that Pocket buyers can afford - particularly on smaller sites, where viability is more critical (P1.1, 19:45). Instead, Pocket expects to do more two-bed, affordable units on future schemes, but there will be fewer of these than would have been possible at 51-58m2 (P1.1, 19:45; P1.2, 17:28).

In summary, the findings of Section 9.2.4 show that Pocket’s preference is to develop an affordable, two-bed/two-person flat type with an *adjustable floor space* (51-58m2) that is legislatively impossible because space standards define two-beds as being 61-70m2. As a result, the combination of legislation and planning resistance to the sort of single-size schemes that make smaller sites financially viable to develop, means Pocket’s *housing mix* will continue to be dominated by one-bed flats that are hard to adjust (at 37m2), accompanied by a small number of two-beds whose compliance makes them less affordable for people at the edges of home ownership.

9.3. Adjustable dwellings from the consumers' perspective

In Section 9.3, I look at adjustable dwellings from the point of view of the consumers. The findings reveal that despite technical challenges, an adjustable density using smaller but joinable dwellings, is seen as a potentially valuable way of enabling *continuous* adjustability, rather than the one-way solution that was provided at Marmalade Lane. The discussion follows the pattern of previous sections, where Sections 9.3.1-9.3.3 consider Marmalade Lane only, with regards to the themes of *adjustable floor space, adjustable housing mix*, and *adjustable density*, respectively. In Section 9.3.4, I revisit each of these same three themes but with regards to the planning and space standards legislation, as applied to Pocket Living developments.

9.3.1. Adjustable floor space at Marmalade Lane

There are three areas in which the consumer perspective on the private living spaces at Marmalade Lane is insightful. The first concerns the adjustability of the building *fabric*, the second relates to the adjustability of the *layout*, and the third considers the users' *rights* to make adjustments to their home. The findings concerning these three areas are discussed below, before reflecting on what these mean for affordability, diversity and adjustability over the longer-term.

Turning first to the adjustability of the building *fabric*, there is a recurring view that the dwellings at Marmalade Lane have been designed specifically to suit a predefined demographic and therefore alterations are more likely, both now and in the future (P1.1, 02:24, 10:25 & 27:13; P2.2, 13:49; C2.4, 06:01). The consumer view, however, is that the off-site manufactured construction system has made the homes "really hard to retrofit - basically impossible" (C2.4, 42:45).

This is to the extent that “it's very hard to run new wiring or piping around the property” or make other alterations without specialist trades (C2.4, 39:09). A second limitation is the internal *layouts,* which, in one resident’s opinion, means “you could basically change a bedroom into an office and that's about it” (C2.4, 40:12). The third limitation on adjustability is that users’ *rights* to make even minor building alterations are significantly constrained by the removal of permitted development rights (see Section 9.2.1). For example, one owner bought a townhouse with loft space into which they hoped to expand, only to find that because of the planning view that window positions are fixed, “we'll be lucky if we get something as good as the other properties, but likely it will be worse” (C2.4, 40:12). Thus, they have “come to regret living in an award winning scheme… because the Council… have basically resisted any changes to the appearance of properties at all” (C2.4, 29:06).

The corollary of these limitations on adjustability, from the users’ perspective, is that whilst “some simple things could have been done to make properties more customisable”, Marmalade Lane was “probably not very adventurous in terms of adaptability” (C2.4, 39:09 & 43:56). This has had three notable consequences. The first is that by “taking away almost all the permitted development rights and fighting applications to put in loft conversion windows”, the planners have made it almost impossible to correct some of the things that were not right in the first place (C2.4, 29:06). The second is that by giving buyers unfinished loft space to expand into, the design approach in fact enables a one-way process that is unlikely ever to be reversed and therefore only really benefits the first owner (C2.5, 38:19-39:33). This third consequence is that “once all those [lofts] are converted, we'll have even fewer smaller properties… [which] probably stands to affect the affordability, and the diversity, and the multi-generational aspect of the community” in the future (C2.5, 38:19-39:33). In other words - as the developer feared - the scheme is “adaptable at the outset… [but] not massively adaptable in the future” (P2.1, 26:39).

In summary, Section 9.3.1 shows that a combination of modular construction, inflexible floor plans, the withdrawal of permitted development rights and designs that suit a predefined demographic, mean the dwellings are not only more likely to need alteration but are harder to adjust, except through the one-way process of converting loft space which benefits the first owners at the expense of future users.

9.3.2. Adjustable housing mix at Marmalade Lane

Turning next to the housing mix, it is helpful to begin by recalling that whilst the developer at Marmalade Lane believed that a mix of dwelling sizes could enable house swaps from time to time, the actual mix and sizes of those dwellings is, in fact, a reflection of the small and unrepresentative cohort that was 'in the room' during the briefing workshops (see 7.2.2., above). This is important to consumer satisfaction at Marmalade Lane, because the demographic mix proved to have been "wrong" upon completion (C2.4, 06:01). Indeed, the fixed mix of sizes led to what the consumer group saw as some deficit in diversity (C2.6, 32:04) where first-time buyers and people in their 30s were substantially underrepresented in the owner cohort, whilst people in their 20s are absent except as tenants (C2.4, 06:01-07:42; C2.6, 19:22).

The findings suggest that this happened because of "the wave" - that is, the moment when a scheme becomes complete but not all of the homes are sold (C2.3, 25:22). "At that point, it's very hard for the cohousing community not to allow the developer to sell to anyone who wants to buy them" and, for that reason, a tension arises "between the developer just wanting to get them sold, and the cohousing group wanting to get people who want to live in cohousing to buy them" (C2.3, 25:22 & 31.03.21). This predicament shows that as well as excess risk for the developer, the fixed housing mix also meant a loss of control for the user group as they faced the prospect that the market - rather than their members - might determine who would join their community (see also 6.3.3b).

These consequences raise the question of why, after so much engagement with planners, sales advisors and end users, should such a mismatch have arisen between the housing mix that the founding group thought were needed, and the revealed preferences of the actual buyers when the scheme went to market. One answer is that “interest in… apartments was massively more than the number built”, whereas “the big houses took forever to sell” (C2.4, 06:01), and therefore because “there were too many houses… the mix wasn't quite right” (C2.6, 29:50). The second reason is that within the apartment mix itself, there is an imbalance of sizes. This is to the extent that even if there had been 20-30 more flats (as opposed to homes), these might have attracted a bigger share of older buyers, because “older people tend to have more resources, and the apartments met their needs” (C2.4, 06:01 & C2.6, 29:50). The third answer, however, is that the founding group of barely a quarter of the final cohort, “just scaled up from the membership we had at the time” to produce a mix which ”took forever to sell” (C2.4, 06:01). In other words, what was built reflected the preferences and financial means of the minority executive that made up the founding group, rather than the reality of the housing demand in the local area. This meant the housing mix was skewed towards “older people [who] tend to have more resources” but “simply didn’t manage to attract any young couples without children” (C2.4, 06:01).

These consequences of decisions taken during briefing had not only cost consequences for the developer and therefore the buyers (see 6.1.1), but the skew towards older buyers (C2.4, 06:01) appears to have diminished the original diversity and inclusivity objectives of Marmalade Lane. This is because some owners feel that “more old people… isn't necessarily a good thing” (C2.6, 29:50) and that a better approach would have been to have provided younger buyers with apartments of a size that they could afford (C2.4, 06:01). To do this, one owner’s suggestion for an improved model is a scheme comprising smaller, more affordable homes, with more extensive shared spaces so that the needs of parents, children and teenagers can “spill out” (C2.5, 40:12 & 41:17 - see also

8.3.2). Had such variations been realised, the consumer view is that a greater share of one-bedroom flats would have produced “a different mix of people… [with] more first time buyers… [and] a bit more diversity” (C2.2, 43:10 & C2.6, 32:04). This may also have avoided the problem for the developer of losing money over a period of 12-18 months whilst they waited ‘desperately’ for the remaining townhouses to sell (C2.3, 25:22).

To summarise, Section 9.3.2 shows the founding group scaled up from the needs of their own members to produce too many homes to suit older people with more resources, but not enough *smaller*, more affordable flats, as might have attracted the missing demographic of younger couples without children.

9.3.3. Adjustable density at Marmalade Lane

Returning to the idea of an adjustable density, it is helpful - before turning to the consumers' view - to recall that whilst the enablers at Marmalade Lane promoted the idea of making dwellings that could be joined or divided and the planner saw policy benefits (see 9.2.3, above), the views of the architect, developer and sales agent are more equivocal (see 9.1.3, above). Nevertheless, from the consumers’ perspective the idea of joinable/divisible dwellings appears to represent value (C2.2. 44:40; C2.4, 27:11-27:39; C2.5, 38:19-39:33 & 06.04.21; C2.6, 38:39). Their reasons are discussed below.

One reason for the consumers’ broad support for adjustable density is that some now recognise - with the benefit of owning a townhouse with loft space to expand into - that the level of adjustability offered at Marmalade Lane, in fact only enables a “one-way direction towards bigger” that “is really great for those first families“ but not useful when people then want to downsize (C2.5, 38:19-39:33; C2.6, 38:39; see also 7.3.1). In contrast, residents appear to “like the idea that homes could increase and decrease in size” (C2.5, 06.04.21) because any offer of smaller, joinable flats would have provided a more affordable

option for “financial outliers” in a community where “not everybody is comfortably off” (C2.5, 28:24). Likewise, divisible dwellings could enable some residents’ to plan for a time when they need to accommodate “a carer who is going to live in and look after all of us” (C2.6, 28:44). Indeed, there is an awareness amongst community members that the need for adjustable density will soon become more pressing because “it's inevitable that people who were involved in design will gradually leave or die, so you will end up with most of the members - or all of the members - having not been involved in the design” at all (C2.4, 19:52).

The consumer group nevertheless identified five barriers. The first is that the *physical,* because the construction system has proven difficult to repair or retrofit and is therefore seen to be too inflexible to join or divide (C2.4. 06:01). The second is *typological*, because people expect that subdividing a townhouse - as opposed to a flat - will require a bigger property overall, so that stairs and access routes can be shared or separated from the private living spaces, as necessary (C2.4, 27:39). The third problem is *cultural*, because many homebuyers prefer to buy a house if they can, even if they recognise that a flat would be easier to subdivide (C2.4, 27:11). The fourth barrier is *tenurial,* because joining/dividing a flat (and likewise making a house swap) makes it harder to legally define individual ownership boundaries (C2.5, 06.04.21). The fifth barrier is *awareness,* because non-expert homeowners “find it difficult to envisage how it would work in practice” (C2.2. 44:40) so whilst some are aware that models such as mutual home ownership might overcome the typological and tenurial barriers (C2.5, 06.04.21), the precedents for this way of collectivising equity can appear radical and utopian (e.g. Chatterton, 2013, p. 1664).

In summary, Section 9.3.3 shows that whilst residents recognise that joinable/divisible dwellings could enable *continuous* adjustments around affordability and care needs - something which one-way loft expansions do not - such a strategy would need to overcome physical, typological, cultural, tenurial

and awareness barriers. Pocket Living, however, represents a model where the flatted typology is culturally normal and where flats are small enough to be joined - an opportunity to which I turn next.

9.3.4. Adjustable dwellings at Pocket Living: the consumers' perspective

There is a broad agreement between Pocket Living the developer, Pocket flat owners and the case study architect to say that the mono-sized development of compact flats can lead to transience and produces an age-specific demographic that is off-putting to older buyers (P1.1-1.3 & C1.2-1.5). Nevertheless, existing owners say that even though they would "definitely" like to move to a flat with more floor space but within the same development, they would only be able to do so as a two-income household, because as a single buyer, this would have been too much of a financial burden at the time they bought their flat (C1.2, 25:57; C1.3, 29:00). This confirms that even if Pocket offered a mix of sizes - or even unfinished space to expand into - their single earner buyers would simply not be able to afford the extra floor space. This is unsurprising, given that around 40% of Pocket owners are key workers, with associated price constraints (P1.1, 02:24 & 10:25).

Despite these affordability problems, however, there are other ways in which Pocket could make their dwellings more adjustable. It is therefore useful to consider the consumers' views on these alternatives, whilst also bearing in mind the viability, construction efficiency and space standards problems raised by the developer, earlier in this chapter (see Section 9.1.4 & 9.2.4, above). One such alternative is to design the floor plan with the space and flexibility to accommodate different layouts. Indeed, there is a consumer view that this level of adjustability is already a successful part of Pocket's standard, one-bedroom product (C1.3, 29:52), being "quite adaptable" to different functions, because there are enough windowless walls to enable various furniture arrangements

(C1.2, 02:52 & 26:56). Indeed, two thirds of survey respondents list daylight as being 'very important' to their decision to buy (C1.1, Q4), suggesting that windowless walls are providing adjustable layouts without compromising the occupiers' sense of light and space.

Nevertheless, the residents also see what is a restricted living space as being a constraint on their freedom to do certain things (C1.5, 29:18). For example, one person said because there is no available space for a desk, they had to use the kitchen table for home working, thus making the 2020-21 Covid lockdowns "a bit harder" (C1.5, 30:26). It is therefore unsurprising that most owners referred to their compact living space as the most important factor that would make them want to move house (C1.1, Q6). Indeed, several said that the lack of space would make them move after a shorter period than they would have otherwise chosen (C1.3, 24:53 & C1.5, 07:51).

In contrast, the idea of making dwellings divisible and joinable appears to have broad support amongst the consumer group. Indeed, the idea of joinable apartments is seen by several owners as "attractive" (C1.3, 33:36) and "amazing from a design and efficiency point of view" (C1.2, 33:32), being "a good, practical idea to have as an option" (C1.5, 23:24) that could work "really quite nicely" in case of changing needs (C1.3, 32:44). Others see the idea as quite ordinary, being "no different from the way that Victorian and Edwardian houses were" designed and adapted (C1.2, 33:59). Others still, recognise that having formed a couple, the option of combining two flats "would probably be more attractive" than moving (C1.3, 33:36) because there is reassurance in having "the option to just save up to buy the one next door" (C1.4, 40:20).

The interviews also offered examples of how owners imagine joinable/divisible dwellings could work in practice. For example, one Pocket owner has first hand experience from their childhood, when their parents joined two semi-detached houses together at the point of starting a family: "It was actually the best thing ever [because] we didn't have to move anywhere, the garden suddenly got

huge, and we could grow into that space" (C1.3, 31:58). Furthermore, the same respondent pointed out that being now that their parents no longer have family living at home, they "might do the opposite now" and downsize, or else "just pop back into one half and sell the other half and actually live on some of that money" (C1.3, 31:58).

In summary, Pocket owners feel at risk of having to move house after a shorter period than they would otherwise have chosen, because their compact *floor space* leaves them with no other way of adjusting their home to meet changing needs. Yet, even a *housing mix* that includes bigger flats would not have helped single people because at the point of entering homeownership, such buyers would need two incomes to afford the extra bedroom or living space. Instead, the idea of an *adjustable density* - or, joinable/divisible flats - is seen by existing owners as an ordinary, achievable and valuable way of adjusting around changing needs and means, but without having to deviate from the standard compact flat typology that makes Pocket Living affordable to single buyers.

9.4. Adjustable dwellings: a summary

By gathering together a brief summary of each of the sections in Chapter 9, a picture emerges of the different stakeholder's views with regards to ways of making dwellings more adjustable. Firstly, in Section 9.1, I considered the implications of adjustable dwellings from the producers' perspective, starting with Marmalade Lane. Of these, Section 9.1.1 *('Adjustable floor space')* showed that whilst custombuild helped to mitigate the developer's risk by improving both buyer attachment and market absorption, the unfinished loft space for *expanding within,* did not add value and was only adjustable at the outset. Meanwhile, Section 9.1.2 *('Adjustable housing mix')* showed that although the mix of dwelling types and sizes are designed to enable house swaps - and thereby enable continuous adjustments and a stable, intergenerational community - the

housing mix also excluded certain groups and needs. Instead, Section 9.1.3 *('Adjustable density')* showed that divisible and joinable dwellings could allow the density of a scheme to adjust around changes in the market or future need, however this opportunity was not pursued at Marmalade Lane. This is because the flats are too big to join together (from the architect's perspective); the floor plans of the townhouses are too small to be divided (from the sales agent's perspective), and the building fabric is too well-engineered to be altered (from the developer's perspective).

At Pocket Living, by comparison, Section 9.1.4 showed that an adjustable *floor space* is not financially viable because their affordability model must maximise every inch of space and therefore cannot cater for future needs. Likewise, a more adjustable *housing mix* risks compromising the cost efficiency that Pocket achieves from using repetitive, modular, off-site construction systems wherever possible (see also Section 9.1.4). Meanwhile, an adjustable *density* - by means of joinable/divisible flats - is commercially untested, creates legal, technically and logistically challenges, and could create void risks.

Turning to the suppliers' perspective on adjustable dwelling design, Section 9.2.1 *('Adjustable floor space')* showed that despite adjustability being an aspiration for both the planners and enablers, the values-based decision-making process at Marmalade Lane in fact produced a framework that was so rigid that it undermined the planners' trust. This contributed to their decision to withhold permitted development rights. Further, Section 9.2.2 *('Adjustable housing mix')* showed that the approved housing mix reflected the preferences of the members at the time, but not the needs of the majority of members who were yet to join. This happened because the priority of the values-based decision-making process was to keep the self-selected residents' group together and thereby, give the local authority the impression that the scheme was led by users. However, in Section 9.2.3 *('Adjustable density')* I show that from the planner's perspective, a *scenarios-based approval framework* -

based on agreed maximum and minimum dwelling numbers - would make permissions less reliant on out-of-date housing needs assessments but without undermining the local authority in the way that an adjustable density might do.

Meanwhile, Section 9.2.4 shows that Pocket's preference to develop an adjustable *floor space* by means of an affordable, two-bed/two-person flat type (51-58m2) is made legislatively impossible because space standards define two-beds as being 61-70m2. As a result, the combination of space standards legislation and planning resistance to the sort of single-size schemes that make smaller sites financially viable to develop, means Pocket's *housing mix* will continue to be dominated by two types of dwelling. These are, hard-to-adjust one-bed flats (at 37m2) and a small number of two-beds whose compliance makes them less affordable for people at the edges of homeownership.

Turning lastly to the consumers' perspective, Section 9.3.1 *('Adjustable floor space')* shows that a combination of modular construction, inflexible floor plans, the withdrawal of permitted development rights and designs that suit a predefined demographic, mean the dwellings at Marmalade Lane are not only more likely to need alteration but are harder to adjust. This is except through the one-way process of converting loft space which benefits the first owners at the expense of future users. Meanwhile, Section 9.3.2 *('Adjustable housing mix)* shows the founding group scaled up from the needs of their own members to produce too many homes to suit older people with more resources, but not enough *smaller*, more affordable flats, as might have attracted the missing demographic of younger couples without children. However, Section 9.3.3 *('Adjustable density')* shows that whilst residents recognise that joinable/divisible dwellings could enable *continuous* adjustments around affordability and care needs in a way that one-way loft expansions do not, such a strategy would need to overcome physical, typological, cultural, tenurial and awareness barriers.

In comparison, Section 9.3.4 shows that Pocket flat owners feel at risk of having to move house after a shorter period than they would otherwise have chosen,

because the compact *floor space* leaves them with no other way of adjusting their home to meet changing needs. Yet, even if the *housing mix* included bigger flats, it would not have helped single people at the point of entering homeownership. This is because such buyers would need two incomes to afford the extra bedroom or living space. Instead, the idea of an *adjustable density* - or joinable/divisible flats - is seen by existing owners as an ordinary, achievable and valuable way of giving people the capability to expand their home, but without having to deviate from the standard compact flat typology that makes Pocket Living affordable to single buyers.

A synthesis of the findings from this chapter and recommendations for delivering dwellings that are more adjustable over the longer-term, is at Section 11.2 (below). First, however, I turn to the role of shared rights, rules, spaces and demographic factors that make the shared infrastructure or housing environment more adjustable through collective decision-making.

10. Adjustable infrastructure: an environment for co-management

In Chapter 10, I gather together stakeholders' views on whether adjustable housing *infrastructure* could viably provide owners with longer-term adjustability against needs that can or will change over the longer-term. An adjustable infrastructure (as described in the cohousing and real estate literature in Chapter 4) can be thought of as a shared bundle of rights, services or spaces that aggregate to provide supporting environment for private dwellings within an apartment building or small estate (Schneider and Till, 2007, pp. 148–149; Lehavi, 2008, p. 139; Ostrom, 2015). The function of such adaptive spaces and systems is to encourage the formation of durable relationships between neighbours (Smith and Price, 1973; Axelrod, 1984; Friedman, 1998, pp. 16–17). *Adjustable infrastructure* comprises the third axis of the adjustable housing thesis.

Conceptually, a shared housing infrastructure may be thought of as private infrastructure which members pay for, in exchange for collective benefits from which the public are excluded. Such 'excludable services' can be described as 'club goods' and sit within the 'theory of cooperative membership' that some economists find to be missing from the neoclassical market model (Buchanan, 1965, pp. 1–2; Manzi and Smith-Bowers, 2005, pp. 347 & 356–7). Cooperative membership - where club goods are collectively owned and financed for mutual benefits - can provide beneficiaries of all tenures with a hybrid way of accessing housing services that are otherwise scarce (Manzi and Smith-Bowers, 2005, p. 348). Scarcity in this context means amenities that are not readily available or affordable, either in the local area or within the private dwellings in the scheme.

For the housing infrastructure to be adjustable on the terms of this research, three qualifying criteria must be satisfied. The first is that the available club

goods allow the private dwellings to be smaller than would otherwise have been the case. The second is that *all* members must have access to *all* goods, so that everybody's capabilities are, *de facto*, enhanced, even if some people choose not make use of what is available to them (see, Sen, 2010, p. 229; also, Clapham and Foye, 2019, p. 276). The third criteria is that legal power to influence rules and rights, falls to the users, as opposed to being retained or sold on by developers, as is often the case (Blandy, Dixon and Dupuis, 2006).

To evaluate such infrastructure in terms of adjustability, three types of housing systems become relevant to the research. The first is the *licence* to adjust - that is, the bundle of rights by which members can adjust the housing infrastructure (e.g. legal title or a say in management decisions). The second is the *space* to adjust - that is, the availability of formal or bookable spaces which members can use in ways that helps them to meet needs that they cannot satisfy within their own, private home (e.g. guest room, laundry, workshop, storage, deskspace, garden or growing space). The third is the *opportunities* to adjust - that is, the incidental spaces and demographic circumstances that help neighbours to informally agree to ways of adjusting their shared infrastructure (e.g. the design of circulation and spaces adjacent to homes, the scale of the development, or commonality between neighbours). These three aspects of an adjustable infrastructure are illustrated in the Venn diagram overleaf.

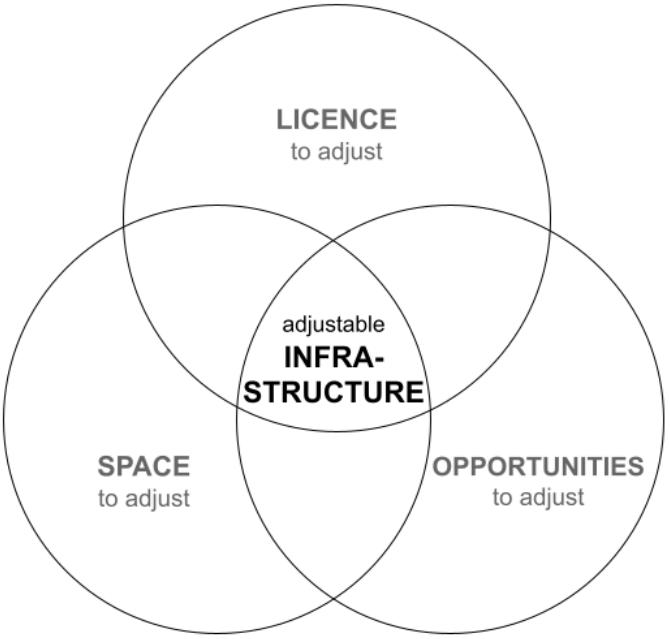


Figure 18: *Venn diagram showing the three aspects of an adjustable infrastructure (author)*

To evaluate these, this chapter follows the same pattern as Chapters 8 and 9, by presenting the findings as related to the three different housing systems from the perspective of each of the three stakeholder groups at the two case studies. As previously, these stakeholders are, the producers (i.e. developer, architect and sales person), the suppliers (i.e planners and the enablers of the briefing process), and lastly, the consumers. The findings from each section are summarised at the end of the chapter.

10.1. Adjustable infrastructure from the producers' perspective

In order to develop a scheme for "people who want to live in a real community" (Town, 2019b), the developer, Town, was gambling that enough buyers would not only "accept a much smaller home than they otherwise... could have bought, because they wanted community" (P2.1, 23:20), but that they would also pay more per square metre for the privilege (P2.1, 34:33). This was on the basis that at Marmalade Lane, "you're trading private space for something public and communal" (P2.1, 25:18). For a "profit with purpose company" like Town (Town, 2019c), this gamble that people would pay for social value is an explicit part of the brand. Thus, by producing a housing environment that can "accommodate many different household types and lifestyles" (Town, 2019b), Town was delivering on their social purpose whilst also taking a loose fit approach as a way to manage their significant sales risks (P2.1, 41:12). The term 'social value' is, however, poorly defined and difficult to measure (Samuel, 2020b, p. 7). It is therefore helpful to establish whether their apportionment of the rights, spaces and opportunities to adjust the housing infrastructure have social value and if so, why.

10.1.1. Licence to adjust the infrastructure at Marmalade Lane

The first set of rights that the group of would-be users acquired at Marmalade Lane was the licence or powers to adjust their future housing infrastructure during the co-design process. It is interesting, then, to find that both the architect and the developer consider co-design as having played only a *minor* role in empowering users. For example, the architects observed that "the degree to which they [the group] could affect the actual design was really limited" (P2.2, 50:19). This was the case because only one formal feedback session was permitted under the rules of the competitive tender process (P2.2, 50:19). As a result, the architect reports that they "weren't pushed around at all"

to the extent that “what you see on the ground… was pretty accurately what [was] pitched for the competition” (P2.2, 09:02).

Such limitations, however, do not appear to have caused a material loss of control for the users. This is because ‘intentionality’ - in the architect’s view - is not spatial or architectural but “an idea you carry with you… when you decide that you *will* know your neighbours” (P2.2, 32:08 & 32:37). In other words, a group cannot be empowered by a design or a designer alone because “it is all about agency” and therefore, down to the intentionality of the users themselves (P2.2, 35:32 & 32:37). On this basis, the architect did not feel that the semi-speculative nature of the design had watered down the capacity for the scheme to empower because it is quite possible to “provide spaces that would work well for cohousing groups… without this being intended at the point it was designed” (P2.2, 13:49 & 35:32). Thus, theoretically, a well designed scheme is one that is adjustable enough to anticipate the needs of an unknown group of users.

Nevertheless, the agent's view is that it is still essential to find “a hard core of people that really want it to happen and really want to set the ground rules, set the structure, set the co-op [and] the committees” (P2.3, 08:56). This required a longer marketing process than the agent expected because without market materials to make up for a lack of awareness amongst consumers, there was “more of an education involved” to explain to customers that “they weren't buying a commune” but rather, a place where the idea of community is established even before the scheme is occupied (P2.3, 08:56, 35:35 & 36:18). This required distinctions to be made against the standard, speculative housing model where people have no option but to buy a home on a new estate in the hope that a sense of community will “happen organically” (P2.3, 08:56).

The sales agent recognised, however, that there are practical issues with relying on user-led design to generate the sort of community that the producers aspired to deliver. This is because “some people just didn't want to sign up to

everything that went with that cohousing concept" (P2.3, 08:56), whilst for others, an environment with "so many rules might be off-putting" (P2.3, 34:36). On top of these, the sales advisor also noticed that some of the later joiners "weren't quite so in love with it all, or confident enough" (P2.3, 08:56). Thus, it appears that neither the architect nor the agent believe that simply ceding design control to the users will guarantee an empowering, community outcome.

Instead, both the architect and the developer offer other ways of empowering users, outside of a formal co-design process. For example, in the developer's opinion, a similar sense of community empowerment could probably be achieved if residents were involved much later in the design journey (P2.1, 15:33 & 16:04). Likewise, in the architect's opinion, the design aim is less to do with the co-design experience or even the design *per se*, but rather to make people "feel like they are a part of a process [and] have a greater sense of ownership" (P2.2, 13:49). In summary, these views suggest that a delayed approach to co-design - one that consults rather than involving users - would produce a shared infrastructure that is less specific yet creates a similar *feeling* of ownership amongst the community.

10.1.2. Space to adjust the infrastructure at Marmalade Lane

Alongside the (limited) offer of co-design and customisation at Marmalade Lane, one of the defining characteristics is its common house and the associated mix of formal or bookable spaces for users to adjust according to their needs. Together with the shared garden and growing areas, these spaces comprise the shared infrastructure to the private dwellings. Such infrastructure, however, requires the developer to commit "a significant chunk" of the construction budget to non-private uses (P2.2, 40:56), on the basis that these will bring enough added value to offset their capital costs (P2.1, 33:03). To understand this gamble, this section seeks to establish the value of shared infrastructure from the producers' perspective.

In committing to shared space of any sort, the developer was in fact making two gambles. The first was that they would find buyers willing to make "conscious decisions… about space and what you really *need*" (P2.1, 23:20). The second was that these buyers would also be able to *pay* a premium for their private living space (P2.1, 34:33). This meant that the scheme had to be designed in a way that would appeal to "people for whom this [cohousing] will really, really resonate" (P2.1, 34:33). Indeed, just to secure the land in the first place, the developer had to bet on winning "the density argument" by means of trade-offs between shared and private spaces (P2.1, 34:33; P2.2, 21:53).

To manage their risks, the developer's view of the ideal buyer was somebody who "wanted community" and to get it, was willing to accept a much smaller home than they otherwise could have afforded (P2.1, 23:20). Their buyers' desire for a sense of community is also an important demand characteristic from the architect's perspective. This is because, in the architect's view, the target buyer is somebody who is attracted by "a wonderful big kitchen to do shared cooking" and "the opportunity to be able to eat together in a space that's big enough to contain a reasonable percentage of the population" (P2.2, 40:56). Indeed, the developer was drawn to the site at Orchard Park, in part, because the expected return on investments into such shared social facilities is higher at such out-of-town locations where there is less connectivity and *place amenity* (i.e. fewer pubs, cafes, libraries, etc) (P2.1, 25:18).

In practice, however, both the developer and the architect recognise that 'community' is not the only reason that people are willing to pay more for less private space. For example, the architect sees shared spaces as functional opportunities that are "a massive bonus" for people with smaller budgets (P2.2, 26:19). They also offer "an extension to your home" (P2.2, 42.11) and therefore to people's capabilities, insofar as they theoretically help residents to do and *be* all that they have reason to value (Sen, 2010, pp. 231–8). Thus, to use one of the architect's examples, "the idea of the guest apartment or room… is of massive

value" at Marmalade Lane because everybody has the capability to have overnight visitors, not just those with bigger houses (P2.2, 26:19 & 42:11).

Another way of describing capabilities is in terms of the opportunities that arise from a living environment (Sen, 2010, p. 233). In this regard, the developer recognises that homes can be smaller and therefore *cheaper*, if storage and a washing machine are placed outside of the home (P2.1, 23:20 & 34:33). Thus, together with more minor day-to-day savings such as a workshop with shared tools (P2.2, 42:11), affordability - and the associated resilience (Meen and Whitehead, 2020b, pp. 30–38) - shows that capabilities are at least as important as sociability. Nevertheless, the architect's view is that the demographic at schemes like Marmalade Lane can in fact make cohousing *less* accessible to price constrained groups. This is because the ideal buyer usually has the time and money to do it themselves and for that reason, are typically of an older demographic that have different desires and aspirations from younger people (P2.2, 01:58). Indeed, space for socialising (i.e. shared dining) that tends to be associated with cohousing schemes is seen as excessive by housing associations (HAs) (P2.2, 40:56). This is to the extent that HAs will cap shared spaces at only 5% of their cost model, compared to the 7% of gross internal area (GIA) that was delivered at Marmalade Lane (P2.2, 40:56).

These observations suggest that so long as cohousing communities are "self-selected" on the basis of wealth, then the inevitable demographic imbalance will only increase demand for more spending on shared, *social* spaces (P2.2, 01:58). It follows, therefore, that people closer to the edges of homeownership will be excluded. This is, in part, because the price premium for schemes like Marmalade Lane will include lifestyle amenities that have less value to people whose capabilities or housing needs are not fully met. On the basis of this observation, it could be expected that the quantum of social space in the design brief would have been restrained by the founding group's desire for demographic inclusivity. Yet, the agent's advice was that young, single

people would not be at the right lifestage for the scheme (P2.3, 26:06). This is on the basis that first time buyers are unsuited to a cohousing environment because they would be "working long hours" and "out and about in town", rather than "focusing their social life around the development… and looking out for one another" (P2.3, 26:06 & 29:06). Thus, it appears that the sales agent - like the founding group itself (see Sections 9.1.2 & 9.3.2) - had the influence to steer the scheme towards a solution that suited specific life stages.

It is perhaps unsurprising therefore, that some of the shared spaces that were in the original brief are now being adjusted to meet changing needs, through resident action. For example, a canoe store that was originally required to meet the recreational needs of a founding member, became a food store to help the community to buy in bulk during the 2020-21 Covid lockdowns when that member failed to join the scheme (P2.2, 04:47). Likewise, the parking provision has been adjusted to make room for shared bikes, cars and play equipment, because the original brief anticipated more cars than were needed by the people that eventually joined the scheme as residents (P2.3, 13:31-15:51).

To summarise, such adaptations to the original spaces show that whilst shared spaces are evidently designed to serve the specific interests and life stages of the founding group, their primary objective is to offer a social experience. This is intended to attract a specific type of buyer and thereby ensure a sufficient return on investment to cover the higher price paid for the land. Nevertheless, some of the resulting spaces are adjustable enough to support capabilities that are not met within people's private homes and gardens. Such adjustments, however, are subject to residents exercising their right to vote as owner/directors of *Cambridge Cohousing Limited* (C2.3, 26:31). For example, as the sales agent noted, "I've never heard of parking being re-planned into trampolining space!" (P2.3, 13:31-15:51). People's ability to make such adjustments, depends not only on having the space or even the *licence* to do so, but also on the *opportunities* provided for them by the shared housing

infrastructure. It is to these *opportunities* to adjust that I turn next.

10.1.3. Opportunities to adjust the infrastructure at Marmalade Lane

The architect and sales agent at Marmalade Lane appear to have different ways of evaluating the opportunities that the shared housing infrastructure creates. On the one hand, the sales agent holds a more commercial view that value is a way of *feeling* - that is, a feeling of trust and a return to "the good old days [of] being able to leave front doors open" (P2.3, 13:31). The architect, on the other hand, values the shared infrastructure as a way of *being*. This means, *being* safe and secure, having the opportunity to play freely in the outdoor play space, for example (P2.2, 42:11) or "being in a place... where there are other people around", in the case of new parents (P2.2, 45:08).

Of these two ways of evaluating shared housing infrastructure - feeling versus being - the *feeling* that a scheme gives people is less useful as a way of evaluating housing outcomes from a capabilities perspective. This is because the evaluation of a feeling appears reliant on comparisons against other housing norms, making it a relative rather than absolute measure of value. For example, the agent's feeling is that Marmalade Lane is successful because it creates "a sort of 1950s utopia of people looking out for one another" (P2.3, 13:31). This claim, however, can only be substantiated when the scheme is compared to typical, newly built housing where "no one is really there first and there's no community built up - no one's popping around and being welcoming because they're kind of all new" (P2.3, 11:56). Likewise, it was important to the developer for Marmalade Lane to stand out as a place that feels distinctly different to schemes by volume housebuilders, of whom most are seen as "not interested in anything other than private space" (P2.1, 33:34 & 38:04).

The reason for these distinctions between Marmalade Lane and typical housing is, in the agent's view, that the shared design process enabled an "instant

community" to form, even before the scheme was fully occupied (P2.3, 11:56). This opportunity of community was evidently important for sales (P2.3, 23:42). However, the sales agent also attributes the early formation of the community to the digital housing infrastructure - social media for example - could also have helped the community to settle in quickly (P2.3, 11:56). This suggests that a feeling of community can be manufactured, marketed or simulated for as long as it takes to sell the homes.

Ways of *being*, by contrast, are used by the architect to evaluate outcomes in terms of the tangible opportunities they create. For example, shared housing infrastructure provides a "common ground" where the community can interact "in a way that's unenforced or unselfconscious" (P2.2, 42:11). In the architect's view, the value of such a passive or neutral environment is that it makes "room for people to join in as much or as little as they want" (P2.2, 54:09), whereas more formal, shared spaces are "fantastic things if you can possibly collectively manage it" but are not so "easy and uplifting" as informal spaces (P2.2, 42:11). Thus, a passive environment appears to be more valuable than spaces with rules and restrictions attached because they create tangible opportunities to *be* in control and to collectively adjust the shared housing infrastructure. Scale is one determinant of these opportunities because, in the sales agent's view, "if there were too many [dwellings], it wouldn't work" (P2.3, 23:42).

To summarise Section 10.1.3, the agent's view is that a successful shared housing environment is one where the *feeling* of an 'instant community' or 'utopia' boosts sales and allows distinctions to be drawn against more typical, volume housebuilder products. In contrast, the architect's view is that opportunities for *being* in control come from spaces that promote 'unenforced or unselfconscious' interactions. In the agent's view, scale is also important.

10.1.4. Adjustable infrastructure at Pocket Living: the producers' perspective

Pocket Living's claim to "have a social conscience" comes from its commitment to provide a route into homeownership for people who would otherwise continue to rent (Pocket Living, 2020b). Central to this purpose is a more generous approach to common spaces and an explicit brand association with its architects (Pocket Living, 2020a). It is not clear, however, whether such a design approach to the housing infrastructure - and the means of controlling it - are led by risk, brand, data, sales or design value. To explore this, the Pocket Living sections below, look at the same themes that emerged from the Marmalade Lane fieldwork - namely, the *licence* to adjust (i.e. the bundle of rights), the *space* to adjust (i.e. the provision of shared amenities) and the *opportunities* to adjust (i.e. incidental spaces). This section considers these three themes from the producers' perspective.

10.1.4.1. Licence to adjust shared infrastructure at Pocket Living

The architect interviewed for this research, describes Pocket Living as a model which allows people to "make *trade-offs* between a lack of private amenity and shared alternatives" (P1.3, 31:47). Yet, rather than giving potential residents licence to decide trade-offs themselves, Pocket aggregates data from would-be buyers and existing owners. These insights are drawn from their management app, their database of 18,000 potential buyer profiles and some post-occupancy surveys (P1.2, 02:38, 02:55, 03:59 & 08:46). These sources give the developer the confidence of knowing it can repeat a similar product from one site to the next, safe in the knowledge that its sales risks are relatively low and that its customers come from "such a narrow cohort" (P1.1, 05:58, 07:39 & 09:31).

The architect's view is that despite the proven robustness of the Pocket Living model, it would still be beneficial if the design appointment were to include post-occupancy evaluation (POE) (P1.3, 38:25). Further, the architect's

preference would be to *involve* Pocket residents and potential buyers in what they describe as a "briefing review process" (P1.3, 38:25). This is because even a limited scope of consultation would, in the architect's opinion, "really help strengthen Pocket's particular concept" by helping them to sell, get planning permission and start to develop a more identifiable "Pocket typology" (P1.3, 09:30, 38:25 & 40:12).

Instead, whilst Pocket does involve its architects in some aspects of the briefing conversation (P1.3, 09:30, 21:55 & 23:15), the architect feels "at arm's length" from the briefing process and in the position of designing around a marketing vision (P1.3, 16:26 & 38:25). From the architect's perspective, this is a missed opportunity because Pocket "has the *facility* to identify a cohort" of residents to consult with, thanks to its database of potential customers (P1.3, 40:12). Meanwhile, the architect sees the management app - from which Pocket draws some of its customer insight - as "more of a marketing thing" (P1.3, 16:26).

Yet, from Pocket's sales team's perspective, the management app is more than 'marketing'. Rather, it "provides a platform for the residents to communicate with each other", set up clubs and foster a sense of community (P1.2, 03:59 & 27:01). It also "empowers residents to manage the booking system and the use of those [shared] spaces" (P1.3, 26:17 & 41:03). Indeed, the platform has helped Pocket to define its core typology using data that shows how shared amenities are being used, what residents want, and how their community works (P1.3, 24:17 & 42:26). This insight from the developer shows that the design brief does come from users, but only indirectly, via their uploaded profiles and interactions with the management app. The interviews did not discuss the reliability of these tools - for example, the honesty or granularity of people's database profiles, or, in reality, how much neighbourly activity happens outside of the app. Nevertheless, they show a learning and listening development model which has assembled the tools to consult indirectly.

Central to these tools, however, is not the spatial needs of Pocket buyers, as these are fixed by viability, space standards and the need for repetition (see Sections 9.1.4 & 9.2.4). Rather, design decisions are driven by Pocket's concern for the complete user experience of its customers, from the buying process (the 'My Pocket' dashboard'), to community-forming launch events, building management (Residents' Management Committee), space sharing (Pocket's management app) and even sales ('Pocket Resale') (P1.2, 19:19 & 26.03.21). Indeed, this is an important part of Pocket's "brand image" because people - especially "the millennial demographic" - will buy into that relationship and are keen to *feel* part of that experience (P1.2, 24:11). On this basis, Pocket could be said to take a service design - or management-led - design approach. For example, the developer feels the need to "handhold people" through the buying process because many of their buyers come from flatshares where they've had "a landlord doing an awful lot for them" and therefore, the journey into homeownership is "a bit of a growing up experience" (P1.2, 21:51, 24:11 & 27:01). Thereafter, Pocket provides their app, in part, to "kick-start" the community in a new scheme on behalf of their buyers, because new owners "might not know how to start it or who's going to start it" (P1.3, 16:26). During use, the same managing agent is then used at every scheme and represents the developer (P1.2, 19:19). Finally, when an owner decides to move on, Pocket provides a service to make the process less confusing for the seller, by cutting out the need for an external sales agent to be involved (P1.2, 26.03.21).

Pocket's range of 'hand-holding' services do not, however, strip their buyers of the power to adjust and manage their own home. Rather, the model provides mechanisms whereby the community can take on more control if they wish to. For example, Pocket helps buyers to set up a 'Residents' Management Committee', allows 1-2 owners to become company directors (Pocket Living, 2020d) and gives residents the licence to change the managing agent (P1.2, 19:19). This level of control extends to the right to agree service charges (P1.1, 32:37) and repurpose amenity rooms (P1.1, 20:33). Indeed, the sales support for

owners who decide to move on, is provided primarily to give residents “the ability to control and refine the process” (P1.2, 26.03.21).

There are, however, limitations to this feeling of control that comes with a Pocket Living home. The right to make physical changes - for example to a shared amenity room - “would be quite tricky… because they'd have to get the approval of the freeholder” (P1.2, 19:19) and show that any changes are what the residents want (P1.1, 20:33). In practice, such adjustments are out of the hands of apartment owners because Pocket “tends to sell the freehold within a year or two after completing the build” and thereafter, cannot approve any changes (P1.2, 19:19). This means that building users are restricted to making only informal and non-physical changes to room uses (P1.2 19:19, 20:34 & 20:55) and therefore it is not clear whether Pocket’s hand-holding services and virtual environment amount to an infrastructure for *being* in control or merely a *feeling* of being so.

10.1.4.2. Space to adjust shared infrastructure at Pocket Living

Pocket is clear that despite the limitations on resident power, “the community aspects of a Pocket development… are very much part of the brand” (P1.2, 07:03). Likewise, the architect feels that Pocket has “embraced” shared space more than other developers and will voluntarily propose things like guest rooms because “it’s baked into their model” (P1.3, 23:15 & 31:47). Cost, however, is also an important driver of the shared space provision, not least because around 40 percent of Pocket buyers are key workers (P1.1, 02:24 & 10:25). It is therefore important to establish whether cost, lifestyle or future adjustability are drivers of these shared spaces.

Cost constraints drive the *extent* of shared amenity that Pocket provides. This is because people don’t want “expensive things to run that are going to be a drag on the service charge” (P1.1, 21:17). Likewise, the developer describes the lack of private balconies, as a justification for providing communal space in lieu. This

is “because that's the ethos, but also [because] the balconies add considerably to cost” (P1.1, 22:07). From the architect’s point of view, these illustrate Pocket's objective to design schemes which offer “trade-offs between a lack of private amenity and the offer of shared alternatives” (P1.3, 31:47). However, as the architect observes, there is no need for ‘shared alternatives’ to be social spaces. This is because a high degree of amenity comes from the *area,* making Pocket an “urban specific” housing typology (P1.3, 06:42).

To understand the role of shared space, it is helpful to see it mapped over the gestation of the Pocket Living since the first project in 2008 (see table of schemes at Section 7.2.1). Having had the experience of three projects, the architect describes this as a “journey” that began with design briefs that “encourage and embrace that idea of people or a community”, then with increasing consideration for the challenges of “living close to each other and sharing space”, and eventually to “a more established way” of ensuring “the provision of communal amenity” (P1.3, 41:03). This journey plays out over the 23 completed Pocket schemes (Pocket Living, 2022a), where some blocks have no shared spaces at all, whereas others, like Varcoe Road in Southwark, are much closer to cohousing, in terms of space, scale and organisation. As the developer explains, it “is very generous in terms of amenity space for the number of homes”, having “only got 57 units but a huge social space and then a huge, really well designed, working from home space and both are really well utilised” (P1.2, 05:41 & 06:24). Indeed, in another (upcoming) scheme in Walthamstow, the brief is for a ratio of one communal space for approximately every 18 apartments (P1.3, 13:29).

This journey illustrates a learning process for all producers. This is evidenced by a design approach that sees shared spaces not only as ‘trade-offs’ and cost savings but as a deliberate attempt to give buyers spaces that they can adjust and thereby feel a sense of control over. From the architect’s point of view, the value of common spaces is that they are “something that you might feel you had

some ownership over or was sort of your local amenity space" (P1.3, 13:29). Likewise, Pocket's decision to make "quite hybrid spaces" is consistent with the developer's commitment to giving users that sense of ownership, rather than being "Big Brother" (P1.2, 03:59 & 05:09), or overly managing and marketing amenity, as might be the case in co-living models (P1.1, 03:58). Indeed, such hybridity - or adjustability - is now part of the design brief, and Pocket are aware of the benefits of changeable spaces (P1.3, 27:32). As a result, schemes are tendered with "a reasonably open, flexible brief... with the power and the drainage to allow them to be various different things" (P1.3, 27:32). Indeed, the developer points to the resilience that this approach has provided, where before the pandemic, residents were using shared spaces predominantly for social events such as potluck dinners, celebrations or having families gatherings, whereas Covid restrictions have since changed the emphasis towards functions that support people working from home (P1.2, 03:59). Thus, the architect accepts that whilst "there's not a lot of variety of space", the shared spaces are nevertheless designed to give people the capability to do things for which their smaller private home was ill-suited, such as communal dining, home working, exercise and yoga studios, table tennis or practical and craft activities (P1.3, 11:43, 27:32 & 43:27).

At one level, these descriptions of shared spaces suggest trade-offs in lieu of private space are being made for cost and lifestyle reasons (P1.1, 22:07). These are tailored to the needs of what the developer describes as "the millennial demographic" (P1.2, 24:11) and which the architect associates with "that younger demographic... [who] are out a lot, rather than being at home" (P1.3, 05:49). Over time, however, these trade-offs have become an increasingly important part of the Pocket *'brand',* rather than simply a cost compromise (P1.2, 24:11). Further, they have been accompanied by a design philosophy that anticipates change (P1.2, 05:09; P1.3, 11:43, 27:32 & 43:27). This suggests that the producers are aware of an overriding purpose to help buyers whose capabilities are constrained more by price than by space. Without day-to-day

management, however, it is unclear how users can collectively gain a sense of ownership, manage the hybridity of their shared spaces and ensure that their changing capabilities are met in aggregate. One theory to emerge from the findings is that the housing infrastructure plays an important but overlooked role in giving people the *opportunities* they need to manage this need for continuous adjustment. It is to this question that we turn next.

10.1.4.3. Opportunities to adjust shared infrastructure at Pocket Living

In the developer's view, the Pocket model is a decisively "*sociable,* rather than co-living" solution, because each flat has "a proper kitchen and a separate bedroom" (P1.1, 00:10). The antithesis, in the developer's view, is "a *Collective*-type experience[62] where there is a very small personal space, and then lots of communal space" (P1.1, 00:10). The important difference is that Pocket's customers are buyers not renters, and as such, have licence to decide how shared spaces and services are used, adjusted and paid for, over time. Given the developer's determination to express these differences, the question is whether Pocket schemes are typologically distinct from other models (e.g. co-living) because of the way they support neighbourly self-governance. To answer this question, it is useful to start with Pocket's characterisation of its customers. They describe their buyers as people who are "coming from flat shares or family homes so have never lived on their own before and they want a community" (P1.2, 27:01). It is from this context that Pocket has developed a "vested interest in keeping those residents happy" (P1.2, 19:19) by providing a 'hand-holding' service and initiatives (e.g. events and an app, as described above) to 'kickstart' the community (P1.2, 16:26, 21:51, 24:11 & 27:01).

These developer-led initiatives, however, are seemingly considered only through the eyes of the first cohort of buyers, and over their first period of occupation. It

[62] The Collective is a fully rented, highly serviced, micro-living product in London, where shared spaces are akin to a hotel offer, but with activities and lifestyle services provided as well (see https://www.thecollective.com/ for more details).

is perhaps for this reason that the architect is “not really aware of the mechanics” of how the management works over the longer-term (P1.3, 28:32). Likewise, they are unaware that residents can become directors, assuming instead that all management is taken care of by a managing agent (P1.3, 26:17, 28:32). Indeed, it is only more recently (and through other channels) that the architect has gathered that a managing agent can be replaced through “resident power”, as happened at Marcon Place (P1.3, 26:17). It appears, therefore, that there is a gap in awareness or knowledge concerning the ways that the architecture might create opportunities for self-governance.

Nevertheless, the design brief does mandate some aspects of community interaction. For example, the architect notes that Pocket’s design briefs have always prioritised “a kind of entrance sequence” with a bank of postboxes, a bench and a pinboard, because “they want people to interact and leave messages” (P1.3, 16:26). There is therefore a visible and *marketable* characteristic that could be said to define a Pocket typology. The design brief, however, is less explicit about other, more *incidental* ways of supporting neighbourly interactions. These include opportunities which the architect intuitively believes to have ‘design value’ but which could only be justified through their other benefits. There are two examples of this in practice, both occurring at the case study scheme, Marcon Place.

The first example is a site planning move, designed “to encourage a bit of communality… where residents can look inward, across that shared courtyard and actually see each other when they're coming out of their flats” (P1.3, 04:23). The case for the courtyard arrangement had to be made, however, on the basis that it would “make the scheme feel spacious and light and airy” (P1.3, 04:23). In other words, despite the architect’s expectation that this strategy could create opportunities for neighbours to get to know each other, the development value was in the potential for the physical benefits of this arrangement to be capitalised into the value of private living space.

The second example is in the architect's belief that external deck access walkways (as opposed to internal corridors) could "add to the quantum of external space" and in fact, create extra "space that people would use" (P1.3, 02:28). Having made this argument, the architect's further recommendation was to "add to that space a little bit", even where it is not necessary for circulation purposes (P1.3, 02:28). For instance, one piece of advice was to allow "the access decks to extend past the last front door where they don't strictly need to" (P1.3, 02:28). Another was to create "a little eddy where someone could potentially put a pot plant or something" (P1.3, 02:28).

The architect felt that each of these ideas for walkways with extensions and 'eddies' "was a good opportunity" and could "encourage a bit of communality" (P1.3, 02:28 & 04:23). Indeed, Pocket's design manager accepted that "that idea of slightly enlarged circulation space" amounted to "literally a couple of square metres on four floors" and for this reason, "was on board with that concept" (P1.3, 07:41). Yet, in schemes subsequent to Marcon Place, the architect has found that similar enhancements could only be justified when they brought other benefits as a byproduct. For example, at Pocket's scheme at Rosina Street two years later (also in Hackney, London), it helped to promote the idea by saying that the access decks were officially enlarged to cater for cycle storage (P1.3, 07:41), rather than because the space itself had social value.

10.1.4.4. Summary: adjustable infrastructure at Pocket Living from the producers' perspective

Section 10.1.4.1 (*Licence to adjust*) shows that the ability to make trade-offs between private living space and shared amenity is a growing part of Pocket's brand. The briefing process relies on an aggregated picture of demand, gathered from Pocket's management app and customer database. This has produced a whole-system approach to housing that is designed to make people *feel* part of an experience that includes a 'hand-holding service' for people who have previously had a landlord doing a lot for them. Yet, the sense of actually

being in control is limited because the freehold is sold to a third party. Further, there is no direct consultation with existing or potential users, despite the architect's recommendation that this would not only be feasible but might also add value.

Section 10.1.4.2 (*Space to adjust*) shows that the extent of shared amenity in a Pocket scheme is driven by cost constraints as well as an ethos around community, shared amenity, the challenges of living close to each other and assumptions about the needs and lifestyle of *the millennial demographic.* To the architect, however, there is more value in common spaces that people have a sense of ownership, whereas social functions are less important. For this reason, shared spaces are typically tendered with a reasonably open, flexible brief to allow people to adjust in ways that support their smaller private home.

Section 8.1.4.3 (*Opportunities to adjust*) shows that the Pocket model is seen by the developer as a *sociable* rather than co-living solution. This is because it offers conventional, self-contained flats for people who have never lived on their own before. The findings, however, show the brief is directed towards the first buyer cohort rather than future users and therefore prioritises the garden and entrance sequence as ways of kickstarting the community. In contrast, the design brief is less explicit about how the schemes will be managed, as well as about creating incidental opportunities for supporting neighbourly interactions, such as enlargements and eddies in the circulation space.

10.2. Adjustable infrastructure from the suppliers' perspective

This section gathers findings to show how the housing infrastructure is conceptualised from the suppliers' perspective - that is, from the point of view of the planners and the enablers of the briefing process. The discussion begins by considering how much licence the residents really had over the briefing process, before showing that once established, community power over maintenance and upkeep can have a measurable public benefit. The discussion then turns from the *licence* to adjust to the *space* to adjust, showing that concern for sustainability can have unintended consequences for the production of shared space. The last of the short sections on Marmalade Lane then identifies permanence and informal space as key to creating the necessary *opportunities* for co-management to thrive between neighbours. The final section considers the value of shared spaces from a planning perspective, in this case, at Pocket Living.

10.2.1. Licence to adjust the infrastructure at Marmalade Lane

The architectural literature claims that residents' at Marmalade Lane "entrusted ordinary residents to make decisions about the space they wanted to live in" (Grylls, 2019, p. 26). The evidence suggests, however, that far from devolving the power to adjust the housing design to an *existing* group with their own ideas, the feasibility process was in fact an opportunity for the enablers "to make decisions that weren't going to be bad for the people in front of me" (S2.1, 08:17). In other words, the licence and authority to adjust the emerging design remained largely with the enablers, rather than the user group itself.

From the enablers' perspective, this lopsided distribution of power was necessary for three reasons. First, because "when you're engaging with people for whom this is not their profession, they just want something really good at

the end of it, so bluntly, you've got to get them onto a level playing field... that everybody buys into" (S2.1, 05:28). Thus, the group was "led to a point where they were happy" but in retrospect, as the enablers accept, "we kind of focused on the points that were needed in order to allow that group to move forward" (S2.1, 45:15). The second reason that residents did not have as much licence as is claimed, is that the membership of the group was expected to change over time. Indeed, those members who were present at the time represented only a small minority of the future community (S2.1, 08:17). Thus, the developer recognises that the claim that "Cambridge Cohousing [the resident group] existed in one form or another for 20 years... isn't actually true" (P2.1, 15:33).

The third reason that licence mostly sat with the enabler was that their funding gave them only nine-months "to assemble a group who would be interested in procuring the project" (S2.1, 02:45 & 04:18). Thus, to produce an outline brief in such a short window and from a changeable minority of potential residents, required the tightly controlled process of values-based decision making (see Sections 8.2.3, 8.3.2 & 8.4). This process was designed to establish "a hierarchy of decisions", rather than handing design control to the group (S2.1, 08:17 & 16:49). This was, however, enough for the participants' to inform decisions around substituting some private space for shared facilities (Cambridge Architectural Research, no date; UK Cohousing Network, 2020), as well as helping to establish "adjacencies and functions and areas, and.... put them in order of what was most important" (S2.1, 38:27).

Despite their relative powerlessness, the involvement of the resident group was timely. This is because the scope for further design changes became increasingly narrow from 2014 onwards, once the planners engaged in the outline approval process. Indeed, there were gaps between "what the planners were trying to do - or were used to doing - compared to what the group who are actually going to be living there wanted" (S2.1, 46:37). Thus, the proposed

scheme “clashed very heavily with the local design guide” and planning risks became the priority (S2.1, 46:37).

The differences between the members’ wishes and the planners’ requirements are documented in Chapter 9 (*‘Adjustable dwellings’*). Here it was concluded that the planners protected their authority by withholding permitted development rights from the group (Christodoulides, 2016, para. 49). This has meant that residents do not have licence to adjust the housing density mix of sizes (see Sections 9.2.2 & 9.2.3). Nevertheless, the planning officer places a high value on giving licence to community control. This is because upkeep and management happen more quickly and “to a much higher standard than otherwise would be the case” when users (e.g. a parish council) have the power to “invest their time and energy… take various risks and get involved in the area and the people” (S2.2, 10:09 & 15:07). In contrast, places become transient, from the planners’ point of view, “if you give people a home as if it’s a car and say, “Here are the keys, now go and live there” (S2.2, 15:07). Thus, from the planning perspective, there is a cost and quality benefit to giving communities - rather than councils - licence to adjust their own housing infrastructure.

In summary, this short history of the distribution of power amongst the supplier stakeholder group (planners and enablers), shows that the ‘foundation group’ had limited licence to adjust the housing outcome. This was, in part, because the enablers had to closely guide the founding members because they were a non-professional and inexperienced minority that were expected to change. Nevertheless, the planning preference is that communities should have the licence to manage their own housing environment because this produces better management and maintenance outcomes.

10.2.2. Space to adjust the infrastructure at Marmalade Lane

The extensive shared *social* space at Marmalade Lane had costs and may also have had demographic consequences (P2.2, 01:58 & 40:56). Section 10.1.2 showed that this was a result of allowing a self-selected group to tilt the balance of shared space towards social rather than functional uses. By going back to the briefing stages, this section shows that another reason that the shared social space was so extensive was that *sustainability* was a central part of the early briefing framework (S2.1, 18:03).

The centrality of sustainability to the scheme appears to come from three interconnected ways that it acquired value during the briefing process. The first was that homes that are "environmentally very friendly and efficient" have lower energy use and therefore offer cost savings (S2.1, 18:03). The second is that an infrastructure for sharing means people need fewer resources, for example, they "do not need 36 screwdrivers… just need one very good one" (S2.1, 18:03). The third way is that sharing allows a smaller land take, because owners "sacrifice some of their [private] space - whether its internal or external… - and put that into common facilities" (S2.1, 28:24). Reflecting on these interconnected value judgments, the sales agent describes a sense that sharing resources - such as energy, tools, bikes, space or costs - became the ethos of Marmalade Lane (P2.3, 13:31-15:51). Likewise, the planner recognises that "sustainable living is something that I think, generally the community is getting more behind" (S2.2, 37:19). The enablers, meanwhile, identify sustainability as a driver for people who need their homes to be cheaper to run (S2.1, 18:03).

The enablers, however, also identify a risk in having allowed the sustainable living agenda to have become such a central part of the brief. This is because its importance to the founding group was established so early on (S2.1, 40:52) that over time, it became conflated with the shared social experience, including "sharing a kitchen, cooking together, and being involved in community gardening" (S2.2, 37:19). Thus, whereas sustainability was just one of "six key

requirements[63] that were set out right at the beginning" of the briefing process (S2.1, 11:37), it became obvious that the group "would have given up some of the ancillary space - such as guest rooms and laundries - if the scheme needed to flex" (S2.1, 37:25). It is perhaps for this reason that Marmalade Lane now "has an extremely large, very functional, very big and very expensive common house… [that] a lot of other groups are really not able to afford" (S2.1, 37:25). In the planners' view, however, this agenda divides opinions and excludes some participants. This is because, in their view, "there might be certain groups of people that are interested in doing it, but there will be other groups that might not" (S2.2, 37:19). Aware of this risk, the enablers' tried to steer the brief towards making the shared spaces more adjustable beyond completion and occupation. This approach forced the group to understand that whilst their wishes for particular space were "priority one", each space also had to have the flexibility to support other uses, so that they would not "become a glorified cupboard" (S2.1, 40:14 & 40:52). These interventions by the enablers produced spaces - and an *understanding* of space - that are more adjustable to changes in living and working needs that cannot be met within the private home. For example, "a guest room could be a treatment room… if someone coming from the group wanted to run a massage course or something like that" (S2.1, 40:52).

In summary, spaces for supporting adjustable and inclusive living do not appear to have been a priority for the founding group. Rather, *sustainability* was allowed to become a central part of the briefing framework, eventually becoming conflated with an ethos of sociable sharing that produced big, expensive spaces that other groups could not have afforded. This inclination needed to be tempered by the enabler to ensure some future adaptability. The next section turns to the *opportunities* that the users have to adjust the shared infrastructure to meet their changing needs.

[63] The others included, "participatory design process, consensus-based decision making, a productive, creative and social environment, short-term flexibility and long-term adaptability" (S2.1, 11:37).

10.2.3. Opportunities to adjust the infrastructure at Marmalade Lane

The question of how housing architecture can provide opportunities for neighbours to adjust and control their shared environment is not significantly developed by evidence from the supplier stakeholders. Two observations, however, are useful. These are, that permanence and external space are crucial infrastructure for creating opportunities for community collaboration.

Permanence is important infrastructure from the planner's perspective because "in terms of community-building... it's always good to have permanent residents" (S2.2, 39:34). At one level, this stands to reason because a stable community could be expected to be better acquainted and therefore more equipped to make decisions together. The planner's observation, however, chimes with that of the enablers' who note that during the briefing process, "everyone, without fail, referred to living in streets where they didn't know their neighbours, and [experienced] loneliness and a dislocation" (S2.1, 28:24). External space, meanwhile, is important infrastructure from the enablers' point of view because it was one of two crucial drivers during the briefing workshops - the other being the common house (S2.1, 37:25). Indeed, the enablers noted that groups will never sacrifice the open space and a space to meet during co-design (S2.1, 37:25). The enablers attribute this as a yearning for "a sort of urbanism but with a more idyllic feel" that they describe as "counter urbanism" (S2.1, 02:45). In summary, these examples show that systems and spaces that help people to stay in a scheme for longer are valuable infrastructure for community-building and decision-making.

10.2.4. Adjustable infrastructure at Pocket Living: the suppliers' perspective

This section shows that whilst the planning system plays a bigger role in producing the shared housing infrastructure than was the case at Marmalade Lane. It also confirms that shared spaces are nevertheless "baked in" to Pocket's model (P1.3, 31:47; see 8.1.2 above) insofar as some amenities - guest rooms, for example - are increasingly "something that Pocket suggested and are not planner related" (P1.3, 23:15). To explore this tension between developer-led and planner-led infrastructure, the structure follows the same patterns as previously in this section. Thus, it begins with the *licence* to adjust (i.e. the bundle of rights), then the *space* to adjust (i.e. the provision of shared amenities) and finally, the *opportunities* to adjust (i.e. incidental spaces). As no planner was interviewed in relation to Pocket Living schemes, these three themes are explored using the developer's and architect's insight into the planning process.

10.2.4.1. Licence to adjust shared infrastructure at Pocket Living

At Pocket Living, the licence to adjust the mix and quantum of shared spaces does not sit with the producers and consumers, as it did at Marmalade Lane (see Section 10.2.2). Rather, this power appears to rest, in significant part, with the planning authorities. This is because shared amenities are used by the developer as *bargaining chips* during planning negotiations (P1.2, 07:03). It is necessary for Pocket to offer shared spaces as substitution goods in this way because the single-tenure, single-size, compact living model "continues to be a hard sell to a lot of planning officers and councillors" (P1.1, 19:45; P1.3, 45:06; see also 7.2.4). Indeed, it is the developer's view that "what they [the planners] really wanted was family social rent" (P1.1, 16:39). As a result, Pocket schemes "rarely have private amenity space" and are therefore "always obliged to make up for it in community amenity space" by the planners (P1.2, 07:03), or if not, by planning policy (P1.1, 20:33).

The power of the planning process over such decisions extends even to the function of shared spaces. Indeed, even decisions about whether amenity should be internal or external "have been planner-driven rather than Pocket-driven" (P1.3, 10:53, 24:52 & 35:00). This is despite the fact that there is arguably no need for Pocket to provide much if any shared amenity because their schemes are in urban areas where there is already "a very high degree of amenity that doesn't come from the dwelling" (P2.1, 08:19 & 44:25). Pocket accepts this loss of power in order to maintain the position that their schemes do not need so much private living space or amenity because there is always an offer of some other amenity in lieu (P1.3, 31:47). Thus, the starting point for planning negotiations is the position that for affordability reasons, communal outdoor space is compensation for a lack of private balconies (P1.1, 22:07).

10.2.4.2. Space to adjust shared infrastructure at Pocket Living

Pocket's defensive opening position means that there is usually space for the planners to impose their own views on what - and even *where* - such communal space ought to be. For example, at a new Pocket Living scheme (in Leyton, London), there are "about ten different types of amenity rooms" which "were put in because the planners quite liked it" and "really wanted to see some variety" (P1.2, 18:16 & 18:21). This negotiated approach to the design and function of shared space almost means that the outcomes are "what the planners required but not necessarily what our finance team wanted" (P1.2, 06:24). Thus, without the voice of would-be residents, there is no guarantee that 'what the planners required' will match consumer preferences. This creates the risk that the housing outcome will meet neither the statutory minimums for outdoor space within the private space, nor be replaced by amenities that address any restrictions on people's freedoms and capabilities.

10.2.4.3. Opportunities to adjust shared infrastructure at Pocket Living

Another shortcoming to arise from the negotiated approval process is that the value of non-private space is determined by a planning view which says that *informal* shared spaces do not count as meaningful amenity in lieu of private space (P1.3, 10:53). Such informal spaces include what one of Pocket's designers described as "little eddies" or external circulation that "you don't strictly need… but which could add to the quantum of external space that people would use" (P1.3, 02:28; see 8.1.4). As will be shown, despite their informality, such spaces represent considerable social and governance value to consumers (see Section 10.3.4). This means that the architect is unable to make value arguments in their favour on planning grounds and must instead, find other uses (e.g. cycle storage) to justify enlarged circulation, even where developer and architect agree that it is social value (P1.3, 07:41; see Section 10.1.4).

10.2.4.4. Summary: adjustable infrastructure at Pocket Living from the suppliers' perspective

In Section 10.2.5 I looked at the *suppliers'* views on adjustable shared infrastructure at Pocket Living schemes, again from three different angles. Section 10.2.5.1 (*Licence to adjust*) shows that the quantum, function and even the location of shared amenity are produced through a negotiated process in which planners have more influence than either producers or consumers. Section 10.2.5.2 (*Space to adjust*) shows that without the voice of would-be residents, there is no guarantee that 'what the planners required' will help consumers to address any restrictions on people's freedoms and capabilities. Meanwhile, Section 10.2.5.3 (*'Opportunities to adjust'*) shows that despite producers' awareness of the amenity value of circulation spaces, these are not recognised by statutory authorities as a valid way of offsetting shortfalls in private living space (e.g. balconies).

10.3. Adjustable infrastructure from the consumers' perspective

In this section I gather findings that reveal and explain the levers by which residents feel they can control, adjust and co-manage the shared infrastructure of their housing environment. Once again, the discussion begins by showing how much *licence* the residents feel they have - in this case, over the architecture, the service charge and the demographic. Next, the findings show how the shared *spaces* enable users to adjust the sustainability, affordability and sociability of the housing infrastructure over time. Finally, the consumers' views are used to identify the *opportunities* that they have to adjust and co-manage their housing infrastructure, with consideration for the characteristics from which these opportunities arise. The final section returns to the Pocket Living experience, looking again at the licence, spaces and opportunities that the consumer group had to adjust their housing situation using the available shared infrastructure.

10.3.1. Licence to adjust the infrastructure at Marmalade Lane

Earlier findings have shown that the licence to adjust the architecture at Marmalade Lane rested disproportionately with the enablers and planners (see Section 10.2.3). It has also been shown that the licence to adjust the governance, tenure and demographic of the community, rested disproportionately with the founding group (see Section 8.3.3, respectively). This section interrogates these imbalances further by considering the effect of these imbalances on their consumers' ability to adjust their housing to meet changing needs. The findings are considered in turn by looking first at the users' licence to adjust the *architecture*, then at their licence to adjust the *service costs*, and finally at their licence to adjust the *demographic* of the community.

10.3.1.1. Licence to adjust the architecture

Despite having licence to tailor the architecture of Marmalade Lane to their own needs, the customisation of the private homes became more important to the consumer group than the design of the whole site (C2.4, 31:17). The findings suggest that this may have been caused by three constraints on residents' influence over the architecture of the scheme. These are, the developer's *cost constraints*, the problem of *consensus-building* itself and, the consumers' greater *interest* in customising their own home, rather than the wider housing environment.

Turning first to *cost constraints*, one participant explained that they felt "listened to, but… ultimately, we had only as much influence as Town wanted to give us" (C2.4, 04:44). One reason for this is that the developer "had to control the costs and they also had to use Trivselhus [the manufacturer and development partner], so a lot of things were constrained by those decisions" (C2.4, 04:44). As a result, the consumers' licence to adjust the architecture was limited to the customisation of their private dwelling (C2.4, 31:17). Indeed, only "some things were available for individuals to choose to customise about their properties, but most things had to be the same, to keep the cost down" (C2.4, 03:05). The second constraint is that the process of *consensus-building* itself restricts the agency of participants. Thus, whilst "cohousing schemes are wedded to inclusion… everybody being involved in everything… essentially makes it very hard to make decisions" (C2.3, 15:02) and "people wanted different things" (C2.4, 04:44). The third constraint is that the group was more interested in customising their own home (see Section 9.3.1) and were simply "not too concerned about the whole site" (C2.4, 31:17). Rather, they saw site planning as a compromised way of achieving collective goals (C2.4, 31:17).

One consequence of these three constraints on the power of residents is that "you end up with a sort of lowest common denominator" approach to design which focuses on the private homes (C2.3, 15:02). For example, one owner at

Marmalade Lane describes how the founding group went through “a process of consultation and they took the option that seemed to meet most requirements” for selling the houses, only to end up choosing kitchens on behalf of later joiners that everybody complains about (C2.3, 15:02). It could be assumed that such consequences flow from the problem (described in Section 9.2.2) where “the culture of the community is developed early on”, before most of the community members have even joined (C2.5, 03:47). Indeed, one consumer is of the view that despite the fact that one objective of cohousing is to democratise decision-making from the outset, the licence to adjust the architecture will always be unevenly distributed because “even established groups are rarely going to be full” (C2.4, 35:29). Thus, in practice, “probably ten of the current members were involved… at the time that we were doing the design work… [and] not all of them were actually in the design consulting group that was working with the architects” (C2.4, 03:05).

Yet, some residents see the fact that the agenda is set by a minority as something “that really helps and people coming later benefit from that, even though they haven't been involved” (C2.5, 03:47). One reason for this is that it is always going to be “hard to get everyone to be involved in the planning process and design” (C2.4, 35:29). On this basis, there is a view amongst several owners that allowing a smaller steering group of future residents might actually help the process to “move more quickly and faster, and I don't think at the end of the day, the outcome would be appreciably different - in fact, the outcome might even be better” (C2.3, 15:02). In another owner’s words, ”what's attractive about cohousing is that it doesn't need you to be involved in the process… you probably only need a third [of the community] to be really much more involved in the design work” (C2.5, 03:47 & 04:29).

In summary, these views show that despite the fact that the licence to adjust the architecture is believed to be one of cohousing’s unique selling points, the opportunity to do so has little value to many of the buyers. Indeed, there is a

view that co-design is a compromised way of achieving collective goals. Not only this, but some people would prefer other members to form a steering group to do the design work for them. It is perhaps for these reasons that there appears to be little evidence of resentment towards the minority group of early joiners who made architectural decisions on behalf of those that bought homes later (as Section 9.2.2). Rather, any resentment is directed towards the planning authority whose restrictions on changes mean that for some, Marmalade Lane "feels more like we're living in a museum rather than in a property that we own and have control over" (C2.4, 29:06).

10.3.1.2. Licence to adjust the service costs

Demand for licence to control the day-to-day costs of managing and maintaining Marmalade Lane appears greater than the demand for control over the architecture. This is because participation in management brings a greater *feeling* of control (C2.2, 35:03 & C2.5, 23:33). This section considers *why* people should want to take responsibility for adjusting costs and charges.

The findings show that the purpose of user control is partly about making risk adjustments (e.g. insurance and maintenance) but is also about securing the licence to make financial adjustments such as how service charges are prioritised (C2.5, 23:33). For example, financial control creates opportunities to adjust the allocations of budget towards things "that you wouldn't only ordinarily have… it feeds the birds, it pays for chalks for chalking the lane, it pays for bulb planting every year, it subsidises the car club" (C2.5, 23:33). It also allows people to make trade-offs between how much they pay and how much they do themselves, in ways that can both "save an awful lot of money" (C2.6, 22:05) and help with inclusivity (C2.5, 24:39).

The power to adjust costs is also important because it is an excuse to *meet*, whether for the purposes of decision-making or to carry out maintenance. This is not only because working together - even on 'tedious' activities - is regarded

as “good fun” and “part of the ethos” (C2.2, 35:03 & C2.6, 22:42), but because these are opportunities to hear and express different points of view about adjustments to the housing infrastructure (C2.4, 14:07). As will be shown, such opportunities arise from personal encounters with neighbours, as facilitated by the available social infrastructure (see Section 10.3.3, below). It is for this reason that consumers are variously against or ambivalent about the idea of involving a managing agent (C2.2, 35:03; C2.4, 14:07; C2.5, 24:39; C2.6, 22:42).

10.3.1.3. Licence to adjust the demographic

For the shared housing infrastructure at Marmalade Lane to function well, it is vital to members that their community does not “just collapse into a set of individual properties” (C2.4, 17:44). Yet, residents’ influence over the demographic of their community appears limited to either adjusting the service charge in ways that make the scheme more or less inclusive (C2.5, 24:39, see also Section 10.3.1.2, above), or else by buying up unsold homes so that individuals can sublet to whomever they choose (see Section 8.3.3). Indeed, as one owner points out, “we have more power over tenants than we do over new purchasers” (C2.4, 17:44). Nevertheless, there are some other levers by which early joiners can influence the demographic of new buyers, as described below.

The community’s first lever for controlling the demographic is that they keep “a pretty good list of people who would like to join us”, safe in the knowledge that interest groups such as the *UK Cohousing Network*[64] hold a reserve list of potential joiners on their national database (C2.3, 39:20 & 40:50). Thus, the community “would give it a go that way, before we put it in the hands of an estate agent” (C2.3, 40:50). After this short window has elapsed, an existing member will usually become involved in “the normal estate agent stuff” by showing the prospective buyer around the shared areas once the agent has

[64] The UKCN is a resource for members to share information, advertise related services, shape policy and influence public funding (UK Cohousing Network, 2021)

finished showing the individual house (C2.5, 13:05 & 15:01; C2.6, 06:25-07:53). In this way, the community retains some control over the demographic by inviting "anybody who expressed an interest… to a shared meal, or some kind of community event" (C2.5, 15:01). Indeed, these occasions were seen by the sales agent as being tantamount to interviews (P2.3, 08:56 - see 6.1.3).

In summary, Section 10.3.1 *('Licence to adjust')* shows that users' licence to adjust the *architecture* was constrained by the developer's budget, the problem of consensus-building itself and a general preference amongst members to leave the customisation of the shared housing infrastructure to others (see Section 10.3.1.1). In comparison, the community's power to adjust the *service costs appears* more important. This is because meetings create opportunities to hear and express different points of view (see Section 10.3.1.2). Meanwhile, to prevent the community from collapsing into a set of individual properties, members attempt to wrest control over the *demographic* away from open market sales and lettings (see 8.3.1.c). They do this by giving individual landlords licence to sublet to tenants of their choice, and by giving community members licence to filter buyers using a waiting list, national databases and through selection events.

10.3.2. Space to adjust the infrastructure at Marmalade Lane

This section turns to the consumer view on whether the shared spaces at Marmalade Lane provide longer-term adjustability against changing housing needs. It first builds on earlier findings that showed that demand for sustainable living rather than inclusivity or adjustability, are the main drivers of the space sharing agenda (see Sections 10.1.2 & 10.2.2). It then goes on to show that there are divisions between those who see value in the social experience, versus those for whom it is an extension of their day-to-day home.

Turning first to the role of sustainability in producing the space sharing agenda, the findings show that an important part of this demand for an infrastructure to help people reduce their *consumption* of land, space and energy. Guest rooms, for example, mean that downsizers are not paying for space they "don't really need", yet can still have family to visit (C2.5, 32:11). The same is true of shared exercise space (C2.6, 26:59), or of outdoor space, where a "small pocket handkerchief" of a garden is acceptable because "we get all the benefits of having a small park on our doorstep" (C2.2, 31:43 & 45:25). Likewise, people "moved in without a washing machine and it's been fine" (C2.2, 31:43). Another important part of the sustainability agenda is people's demand for their private home to be eco-friendly. In this regard, the shared spaces create opportunities for individuals to collectivise certain costs so that their own home becomes small enough that private sustainability objectives become affordable. For example, people can buy "a more compact property than they otherwise would, by at least one bedroom" (C2.2, 45:25). This saving allows those with a limited budget to afford expensive but "eco-friendly" products such as triple glazing (C2.4, 00:34 & C2.6, 34:53).

Aside from sustainability objectives, however, there are those who see the shared infrastructure at Marmalade Lane as "an extension of my home" (C2.5, 32:11). Thus, the shared gym, tools, workshop, garden, laundry, club cars/bikes and a communal internet network (C2.4, 24:37 & C2.6, 25:58) mean people "have access to more space than we would have otherwise in a private property" (C2.4, 00:34 & 45:25; C2.5, 32:11). This shows that for some people at least, "there are much more practical reasons why they use the common facilities" (C2.2, 30:29). Indeed, people are evidently "paying a premium" to buy "a share of the shared facilities" (C2.2, 18:12), whilst accepting that "a lot of the properties are either smaller or have greater occupancy" as a result (C2.2, 30:29).

Yet, within this view that shared spaces represent an extension of the home and not just a means of achieving sustainability goals, there is division. This is

because the value of shared spaces, for some people, is bound up in the *social* experience that they provide. For this group, "the most important thing is the community layout and the communal facilities" (C2.2, 03:29-04:59) and therefore the common house is essential but guest rooms are not (C2.6 27:41). One characteristic of this group is a surplus of housing space including spare rooms (C2.6 27:41 & 33:26). Another determiner is age, where under-40s tend to see shared amenities as a way of *accessing* more housing space than they could have otherwise afforded, whereas over-40s see its value in the *sense* of space that they have at Marmalade Lane (C2.1, Q6). Likewise, informal outdoor spaces (e.g. the garden and shared street) are important to all age groups, whereas specifically *social* amenities (e.g. the shared kitchen, lounge, meeting rooms and meals) were significantly more important to those aged over-40 (C2.1, Q5 & Q10).

One explanation for this is that the demographic whose time is less constrained by work and family will use the community facilities more than they might otherwise because the area does not have "a nice pub within walking distance" (C2.2, 47:15). Yet, differences in age and life stage are not the whole story. Rather, the split between people's evaluation of shared spaces appears to depend on their commitment to the idea of collective living. This is because for some buyers, the *idea* of cohousing made Marmalade Lane into a *destination* for which they were prepared to move away from old friends and neighbours to an area "I'd never been before" and "on the wrong side of the country" (C2.3, 00:41 & C2.6, 01:07-02:11). For these people, shared *social* elements were essential to their decision to relocate because they "make us more aware of the community and… our neighbours" (C2.2, 47:15). Common to this group is that they were all in the 60+ age group and had come to the realisation that despite earlier involvement with other cohousing initiatives, they had to choose between a radical relocation or else, "spend five years with a lot of hard work and not get anywhere" (C2.2, 07:09; C2.3, 00:41; C2.6, 01:07-02:11).

In contrast, people for whom the choice had been driven by sustainability or affordability, “are probably a bit put off by the label 'cohousing' [because] they start looking into what it is and it sounds a bit like a commune - they don't want that” (C2.4, 33:50). They also “really value their private outdoor space, so I think they'd be very reluctant to give that up” (C2.4, 28:35). For example, “there was a couple in a flat, who had bought here [but] who really didn't like the communal aspects of it and have moved out” (C2.3, 39:20). Likewise, within households, one half of a couple can force a house move when they realise they are “much less keen on cohousing generally and living in close proximity to people” (C2.4, 22:22).

Adjustable shared spaces are especially valuable, however, for people living in smaller or fuller homes. This is especially challenging at Marmalade Lane because the dwellings tend to “only have one open plan kitchen-living-dining room and no extra bedrooms, nothing else” (C2.5, 41:17). For these households, the 2020 and 2021 ‘lockdowns’ showed how vital it was to be able to repurpose some shared spaces. For example, “the guest rooms are currently used as home offices for people; the common house is used as a sort of breakout space for families when things are just getting a bit intense... we've created two gyms, and two laundries, and one of our outside storage spaces has become an internal shop” (C2.5, 17:39 & 18:55). This shows an adjustable housing infrastructure in action and the importance of having shared space in supporting needs and capabilities - rather than the social, sustainable and communal experience *per se.* Indeed, there is an expectation that demographic changes in the future will mean “the community context is going to become really valuable, because either the parents, or the children, or the teenagers are going to [need to] escape” (C2.5, 41:17). Demographic changes are also expected to affect the use of shared spaces because future families are more likely to choose smaller homes for affordability reasons and will therefore need spaces for their domestic lives to “spill out” into (C2.5, 40:12).

Such changes require adjustments to shared spaces, not least because some of these are already proving to be liabilities for households with less time or money. For example, “a very large industrial-style kitchen… brings a lot of health and safety requirements and issues, and takes a lot of looking after” (C2.3, 07:02). On this basis, as one owner observes, “if you were short of space and short of money, you probably wouldn't need it to be that big” (C2.3, 43:41). Likewise, with regards to the three guest rooms and the single bathroom that they share, the consumer view is not only that these amenities are essential but that they should have been bigger (C2.3, 07:02). Indeed, “it would have been much better if they had been slightly smaller [guest] rooms but with ensuite bathrooms… in the scheme of the cost of the whole thing, it wouldn't have made that much difference” (C2.3, 07:02). This is counter to the earlier view of a member who felt guest rooms were non-essential because “I've got spare rooms, so I don't always use the guest rooms anyway” (C2.6 27:41). Nevertheless, the findings show that the shared spaces at Marmalade Lane are so fixed that labels such as ‘cohousing’ and ‘commune’ may be hard to undo. This provokes the opinion that if cohousing “was described as, 'properties with great shared facilities', … you would probably get more shared facilities being built, and less things with the label 'cohousing' on them” (C2.4, 33:50).

In summary, Section 10.3.2 (*Space to adjust*) has shown that the consumers’ views on the value of shared spaces is split three ways. There are those for whom space sharing is part of the sustainable living agenda, those who see shared spaces as social destinations, and those for whom it is an extension to their home. It appears that these value differences across the community - as well as inevitable demographic changes - make it essential that shared spaces are designed to evolve continuously over time. Key to this evolution, however, is not only adjustability but also the *opportunities* to adjust. It is to these that I turn next.

10.3.3. Opportunities to adjust the infrastructure at Marmalade Lane

On top of the competing environmental, social and practical values that the community attaches to shared spaces (see Section 10.3.2, above), the housing infrastructure at Marmalade Lane also provides vital *opportunities* for inclusive decision-making. This is because shared spaces "give you something to bind around - something to discuss and make decisions on collectively" (C2.4, 17:44). The section below first explains *why* such opportunities are important and *what* opportunities are needed. It then shows *how* the circumstances for these opportunities are created through a combination of scale, adjacency and demographics, before showing the measures by which the residents *evaluate* these.

10.3.3.1. Why opportunities to adjust the shared infrastructure are important

Opportunities for informal neighbourly decision-making are important because adjustments in housing needs are inevitable. They are inevitable because people who were involved in the design process will gradually leave or die, until "you end up with most of the members - or all of the members - having *not* been involved in the design" (C2.4, 19:52). This means that people need some social infrastructure within a housing environment that creates opportunities for them to become meaningfully "involved in the maintenance and continued evolution of the site" (C2.4, 19:52).As has been shown, one way of creating such social capital is by giving people licence to hold meetings, so that different points of view can be heard (see Section 10.3.1). Compared to formal residents' meetings, however, shared infrastructure provides a more *inclusive* and informal arena for mediation between neighbours. This is because tenants use formal shared spaces like the common house and join online conversations but they tend not to join meetings in person (C2.4, 12:27 - see 6.3.3 for reasons). Thus, the shared infrastructure - and especially informal, outside space - are "vital" for facilitating

co-management (C2.6, 24:11-24:54). Indeed, the very existence of a shared environment creates an “incentive to join in” whilst ensuring that relationships are not entirely formed “through the lens of trying to co-manage” (C2.4, 15:17 & C2.5, 11:53).

There are trade-offs, however, in having more than the minimum shared infrastructure that is necessary for circulation and statutory compliance. This is because it would be easier and cheaper to manage and maintain the scheme without any shared amenity at all (C2.4, 15:17). Yet, from the consumers’ point of view, “if there were no shared spaces there would be nothing - no reason for meetings… and you probably wouldn't know your neighbours either” (C2.4, 17:44). Thus, the question is what type and extent of infrastructure do users need to create opportunities for inclusive decision-making.

10.3.3.2. What opportunities to adjust the shared infrastructure are needed

One view on a necessary type and extent of shared space is that “you really do need a place where people can gather, even if it's quite small” (C2.5, 17:39). Some owners believe it is essential that this provides for year-round communal dining (C2.6, 34:18). Others are of the view that “you don't necessarily need to have a giant kitchen” (C2.5, 21:32). In practice, however, not everybody comes to the twice weekly communal meals (C2.6, 14:34) and whilst some people love to cook and dine together (C2.6, 14:34, 34:18 & 42:16), this is significantly more so amongst older residents (C2.1, Q5 & Q10).

Instead, inclusive decision-making appears to be especially contingent on having a shared infrastructure that is *informal* and often *outdoor*. This is because you can plant trees and move things around, whereas a building … is very hard to modify” (C2.4, 19:52). Informal outdoor spaces also create opportunities for “random encounters” that are not only good fun but sometimes very productive” (C2.2, 40:46), because they help people to know their neighbours

and make them “quite free to say what they want” (C2.6, 39:14). One resident describes these as “informal non-meetings”, through which neighbours can “understand the emotions and mindset of the person who's proposing it [an idea]... before a formal decision comes up” (C2.4, 16:27). The value of these spaces - and the ‘informal non-meetings’ that they enable - can be illustrated by what happens when these opportunities are withdrawn. The 2020-21 Covid-19 lockdowns showed that when the only chance to meet is formally and online (e.g. Zoom meetings), “people find it very tiring and get quite emotional” and there are “more arguments than usual” (C2.4, 15:17). The fact that even under normal circumstances people rarely meet in their own homes, suggests that it was the withdrawal of the shared infrastructure that caused these breakdowns in communication (C2.5, 16:23).

It is important, however, to make the distinction between the opportunities created by shared outdoor infrastructure and those created by a ‘normal street’. One owner describes their former terraced street as a place that is “absolutely fine when you're young and very active but it could be a very lonely place when you're old” (C2.3, 00:41). Another describes their former cul-de-sac where neighbours were just neighbours - “I did know everybody in the street and we used to go in for meals, but that was it” (C2.6, 41:44). Thus, the problem is that on normal streets, that “people go behind their front doors” and have no reason to engage (C2.6, 41:24). In contrast, Marmalade Lane is “like a small village” because “what draws you together is working together” (C2.6, 41:44 & 42:16). It also shows the importance of being “surrounded by people who knew me and could support me, and I could support them too”, especially in older age (C2.6, 01:07 & C2.6, 28:44). These comparisons show that there is social value in having opportunities for ownership and control over shared spaces because without them, neighbours “would probably have as much influence or interaction... as people do on normal streets” (C2.4, 17:44).

10.3.3.3. How opportunities to adjust the shared infrastructure are created

There appear to be three ways by which the shared infrastructure at Marmalade Lane creates empowering opportunities. These are, *adjacencies* between private and non-private spaces*, commonalities* between neighbours and the *scale* of development. Together, these enable residents to make collective decisions about ways of adjusting a scheme to meet their changing needs. These can be explained through the findings below.

The first of these - *adjacency* - is important because the spatial relationships between a house and the shared infrastructure make "a big difference to being part of the community" (C2.3, 07:02). This is so much so in fact, that one owner would have preferred their house to back onto a bus lane if it meant they could feel more connected to the shared garden (C2.3, 07:02). Yet, one owner suspected that the architect was not aware of the ways by which adjacencies add value because their benefits are subtle and only appear during use (C2.3, 07:02). It is therefore helpful to gather the different ways that users see value in adjacency and organise these in terms of local cultures, a sense of ownership and forced engagement. Local cultures can arise from shared infrastructure such as a garden or even bin stores which create informal opportunities for households to socialise or form relationships (C2.5, 25:37). Meanwhile, a sense of ownership can be expressed on a doorstep where personalisation and "clutter" encourages conversation (C2.2, 21:54), or on a shared access walkway where space and adjacency can become places to sit or share tea (C2.6, 43:01-43:33). Lastly, adjacency can force neighbours to engage with each other such as during the 2020-21 Covid-19 pandemic, when parents with anxieties and shielding households had to work together to agree rules about play - although this also caused disputes (C2.4, 23:08).

Turning from adjacency to *commonality* between neighbours, the findings show that the demographic infrastructure of a scheme like Marmalade Lane is at least as important as the spatial infrastructure for creating empowering

opportunities. This appears to be important for collective decision-making because “it's much easier to get a new initiative off the ground… if you get a whole load of people together in the same location, with similar values” (C2.5, 32:11). Yet, “similar values” do not appear to mean similarities in wealth and income because “not everybody is comfortably off” (C2.5, 28:24). Likewise, cultural similarities do not appear to be essential because whilst the community is not ethnically diverse (C2.6, 11:40), “there are at last count twelve… different nationalities here” (C2.3, 18:21), mostly from European countries (C2.2, 09:56).

Instead, it appears that ‘similar values’ means some commonality between residents in terms of education and experiences. This is apparent from observations that the community is overwhelmingly degree educated (C2.2, 11:34; C2.3, 19:57; C2.6, 12:45), have had to “battle a bit to get here” (C2.5, 32:11) and are international in their outlook, if not by origin (C2.2, 09:56; C2.3, 18:21; C2.6, 11:40). Further, there are very few people working in what one owner described as “the more straightforward occupations for which you don't need much in the way of qualifications or knowledge” (C2.2, 09:56). One reason for this is that “people who are interested in cohousing, tend to be either in the education profession, the university profession, or the sciences” (C2.3, 19:57). This suggests that to be “a community of doers” (C2.5, 32:11) - as one resident described them - the opportunities to cooperate and co-manage are greater when people have had a similar life journey to get there - and this includes education.

The third characteristic of an empowering housing infrastructure is the *scale* of the development - that is, the number of households that need to be in a scheme for people to have meaningful opportunities to adjust their housing environment. This is because “the ability to share that space only works well, if the intention to create a shared community is shared by - not everybody - but a significant majority of people” (C2.5, 07:17). In other words, the total number of households need to allow for the fact that not everybody is on the same page

and some may "look in horror at the whole idea of it" (C2.5, 28:24; C2.6, 44:55). Thus, the priority is to ensure a critical mass of households so that people can "jointly work out what compromises work and still enable everyone to have what they are seeking" (C2.5, 01:50).

10.3.3.4. Evaluating opportunities to adjust the shared infrastructure

Some members of the Marmalade Lane community use the benchmark of 24-30 homes as a "traditional" or "purist" limit for a cohousing scheme (C2.2, 33:31 & C2.5, 26:44). This measure for evaluating an empowering scale of development is, however, largely received from cohousing norms to which some of the literature also refers (see Chapter 3). Instead, the findings suggest there are six other ways by which an empowering scale of development may be evaluated. The first of these comes from the view that the scale of a scheme is more likely to be empowering when it is possible for one person to have a meaningful relationship with everybody in the building or estate (C2.5, 26:44). This can be measured by people's ability to remember names (including children's names) or to "walk out my door and know everybody there" (C2.2, 33:31; C2.5, 26:44; C2.6, 15:48 & 40:48). A second way of evaluating scale is to establish whether an older, single person feels not only supported but also able to *provide* support to others (C2.3, 00:41, C2.6, 01:07 & 28:44). A third way is when children choose to play together rather than appearing constrained by their nuclear family (C2.4, 24:37). A fourth way is the speed and efficiency with which consensual decisions can be made (C2.2, 33:31 & C2.6, 37:37-38:49). The fifth way is when there are enough people to ensure the skills to deliver most projects (C2.4, 24:37). The sixth is when there are enough hands that participation feels optional for those who prefer to opt out (C2.5, 32:11). Using these six different ways of evaluating an empowering scale, the consensus of the community suggests that "it would be very difficult to have a cohousing community much larger" than Marmalade Lane (C2.2, 33:31 & C2.5, 26:44).

In summary, Section 10.3.3 (*'Opportunities to adjust'*) has shown that without shared spaces, people would have nothing 'to bind around' and therefore no reason to meet, to work together or even to know each other (see Section 10.3.3.1). For the housing infrastructure to be inclusive however, the shared spaces need to create an arena for 'informal non-meetings' in which people of different tenures and points of view may be heard (see Section 10.3.3.1&2). Such inclusivity relies on there being informal spaces to which people feel they can attach a sense of ownership, obligation and local culture (see Section 10.3.3.3). Such attachments are contingent upon the adjacencies between private and non-private spaces, commonalities between neighbours', and an empowering scale of development (see Section 10.3.3.3). The findings suggest that an empowering scale is one where people can remember names, provide support, play together, make decisions efficiently, find skills and exercise their right to opt out (see Section 10.3.3.4).

10.3.4. Adjustable infrastructure at Pocket Living: the consumers' perspective

The consumers' perspective on the shared infrastructure at Pocket Living helps to represent a demographic that was largely missing at Marmalade Lane. Nevertheless, the findings show that there are similarities as well as differences between the two different consumer experiences. These are revealed by taking the same three themes as have been used throughout this chapter. Thus, Section 10.3.5.1 considers consumers' demand for the *licence* to adjust and co-manage their own housing environment; Section 10.3.5.2 asks how their capabilities would be affected by having different types of shared *spaces* at their disposal (i.e. inside, outside, formal, informal); and, Section 10.3.5.3 asks participants about the *opportunities* that they need to control and adjust the shared infrastructure of their housing environment. The section concludes with a summary of the findings from the Pocket Living flat owners in the project case study (Section 10.3.5.4).

10.3.4.1. Licence to adjust shared infrastructure at Pocket Living

To gauge Pocket Living customers' demand for the right to adjust their housing infrastructure, it is helpful to return to the same three areas of the housing environment over which flat owners might wish to take control (see Section 10.3.1). These are, licence to adjust the *architecture*, licence to adjust the management of the *building and service charge*, and licence to adjust the *demographic*. These are considered in turn.

Turning first to the architecture, the survey responses show that three-quarters of respondents would choose to customise some part of their next home or home environment, even if it meant they had to wait for a year before moving in (C1.1 survey, Q10). One reason given for this is that "you would feel more of an attachment to the property, if you'd actually been involved in it" (C1.5, 13:57). Such demand, however, appears to apply to the private dwellings themselves, rather than architecture of the development or estate as a whole (C1.3, 17:48; C1.5, 13:57). Closer interrogation also reveals a degree of realism amongst buyers.

This realism comes from an apparent acceptance amongst owners not only of their own inexperience and sense of financial exposure, but also that developers need solutions that are less risky for them (C1.3, 21:35). Thus, there is a view that a viable level of customisation would have been a lower cost, "custom finish" product where, for example, buyers "get to choose the tiles and maybe one of four layouts", but only after first completing on their purchase so that there is minimal risk to the developer (C1.3, 21:35). This qualified and menu-based approach to customisation fits with another consumer view that in reality, having more of a say in the design "may have seemed a bit daunting" for people who have never owned a home before (C1.4, 18:06).

These views show an acceptance that "the challenge for younger people is that they have difficulty in even buying a first place at all, let alone being able to participate and customise it" (C1.4, 27:41). Thus, for some people, customisation

is unnecessary in Pocket Living flats because they already have “a certain amount of brightness and versatility in the design” without user input (C1.2, 21:14 & 22:03). Nevertheless, several owners see that their own experience of owning a Pocket Living home has allowed them to acquire the confidence to “know more about what we value and want - or don't want” (C1.4, 18:42). Not only this, but existing owners say they “trust the judgement of… ex-residents or current residents” (C1.5, 14:46) because “once you've lived in a scheme for a few years, you do have good feedback on the design” (C1.3, 21:35). Indeed, the pathway of a first-time buyer makes some owners feel especially qualified to contribute to design because “there is a certain sort of savviness that comes from having lived in different flats… you become quite aware of space and the effect of certain things on how you feel and how you work being really important” (C1.2, 02:52).

From this sense of realism and risk-awareness - but also insight - there emerges a view that Pocket “should be consulting people who live in their schemes, to try and learn from them to improve the design” (C1.3, 21:35). Similarly, another view consulting one community before building the next could add value. This is because it would be “heartening” for buyers “to think that actually a developer wanted to know whether what they thought they were doing was effective and good” (C1.2, 24:25). Thus, the consumers’ view is that it would be beneficial to all parties if flat owners had a *degree* of control over the architecture, by consulting existing owners on the design of future schemes and by giving new buyers a choice of finish and layout options.

Turning next to building management and licence to adjust the service charge, it is clear that there is demand from owners for collective control. This, however, is not for cost-saving reasons. Indeed, the community is unsure and unconcerned about whether their work on the Residents’ Management Committee actually keeps costs lower than they would be with a managing agent (C1.4, 09:09). Rather, demand for control comes, in part, from Pocket

owners' earlier experiences of renting, and "the feeling that when something broke, we had this sort of faceless housing association that would never do anything about it" (C1.4, 38:24). Another part of the demand comes from the practicality and efficiency of having control over decisions that the resident community "would much rather sort out ourselves… through mediation and conversation and being adults about it" (C1.3, 12:47).

On top of these, owners are motivated to take control over their housing infrastructure because of three further motivations. The first of these is that the community wants to feel like they "have skin in the game" (C1.3, 11:20) and "are not just a tenant in a block" (C1.4, 09:09). This is because they value "a sense of some shared benefit" (C1.2, 10:45 & 12:45) as well as "a sense of ownership" (C1.4, 09:09). Together, these factors give the community "much more of a vested interest in making sure it's run well" (C1.3, 11:20) because "it's in our hands as to how we take care of it" (C1.4, 09:09). For example, some residents cite the community-led improvements and changes that have been made to the management system (C1.2, 12:34).

The second motivation for taking control is that the community is reluctant to give up control to "A.N. Other managing agent" (C1.3, 11:20). This is because some owners feel that property management companies are "one of the poorest elements of flat ownership", being seen as an "unaccountable" and "faceless" industry that is "neither looked up to nor held to account" (C1.2, 40:57 & C1.4, 08:00). Nevertheless, there is a realism amongst residents who recognise that property management is "typically quite low paid for what's expected of the management agent" (C1.3, 11:20). Thus, they acknowledge that it is unreasonable to expect an agent to do "the extra over to make sure that you get a good deal on things that have a high quality finish" (C1.3, 11:20).

Instead, the residents' preference at the case study scheme has been to pursue a change of management system in which building maintenance is separated out from "the softer side of things" (C1.2, 10:45; C1.3, 11:20; C1.4, 08:00). This

has the effect that a committee of residents rather than a managing agent has the discretion to "choose what particular tasks we contract out" (C1.2, 10:45 & C1.4, 08:00). Such an approach ensures that owners retain control over matters such as "making sure everyone feels part of the community", mediating in case arguments arise between leaseholders (C1.3, 11:20 & 12:47), encouraging participation in co-management (C1.4, 14:58) managing shared spaces (C1.2, 10:45) and taking responsibility for plants in the courtyard garden (C1.4, 08:00). This approach has led to "a sense of just not investing in the particular building" but also "the people around you that you're living with" (C1.2, 16:33, 17:00 & 17:21). Thus, just as was the case with residents' qualified demand for control over the architecture, their demand is only for a *degree* of control. This is apparent from the tendency to accept that there are "certain advantages to having an agent" for specific aspects of multi-dwelling living (C1.3, 11:20 & 12:47). Indeed, the users' view is not only that there is value in selling "the idea of community" (C1.3, 11:20), but that active management by leaseholders would have been "a selling point", had owners been made aware of it at the time of buying rather than only discovering afterwards (C1.4, 12:57; C1.5, 11:37).

Turning lastly to residents' interest in influencing the demographic of their community, the findings show that flat owners do not feel they should have any control over who can buy into the community. Nevertheless, when a new owner moves in, "someone who's active in the Management Committee will come and knock on their door and tell them how it works" (C1.4, 12:57). Thus, there is interest amongst owners in having "some kind of structure that keeps the new people who come in integrated and involved, [because] estate agents are not going to do it "unless they see that as being in their direct interest financially" (C1.4, 14:58).

10.3.4.2. Space to adjust shared infrastructure at Pocket Living

On top of the licence to adjust the housing infrastructure, shared spaces also give flat owners the power to affect the changes they need to support their life in a compact private home. In the Pocket Living case study, such shared spaces are limited to a shared garden and bike store (as well as enhancements to the circulation to which I return in the next section - see Section 10.3.5.2). Thus, the answers provided by the flat owners reflect their stated preferences rather than either their *revealed* preferences or their thoughts on shared infrastructure that they actually have. Nevertheless, their answers reflect questions about how their capabilities would be affected by having different types of non-private space at their disposal.

The initial findings show that for most survey respondents (55 percent), social amenities such as a shared kitchen, dining, or social space would not change their need to eventually move house (C1.1, Q8). Subsequent interviews confirmed that there is ambivalence amongst residents about the value of indoor space for social or exercise uses and therefore "you might get limited use out of that" (C1.4, 03:44 & 05:34; C1.5, 06:07). This is despite the fact that residents have had to make do with the shared garden when they have organised yoga classes or lunch events, despite the fact that these are valuable opportunities for neighbours to "pile in and help" (C1.3, 08:25).

There is less ambivalence, however, when such a space is reframed as a hybrid room that extends people's capabilities, for example, by accommodating a larger gathering of family or friends than could reasonably fit in their own private living space (C1.3, 08:25). Indeed, with the exception of a shared laundry, a majority of respondents also said that they would (Y) or might (M) put off moving to a bigger house if they had access to shared amenities that enhanced the utility of their private home, such as growing space (82%Y + 9%M), storage (55%Y + 27%M), guest rooms or flats (40%Y + 20%M), desk space (27%Y / 27%M), exercise space (27%Y + 64%M) or a shared workshop (10%Y + 70%M) (C1.1, Q8).

Specifically, when asked what shared amenities they would accept as a trade-off against a smaller private home, there was a clear preference for bookable guest rooms, a shared workshop or shared home working space (C1.1, Q11).

The interview discussions showed that such spaces - as well as a garden and growing space - would not only be “extremely important” for helping people to stay longer in a Pocket scheme but would “massively boost the value of these flats” - if not financially then certainly to the people living there (C1.3, 07:03 & 26:18). One reason for this is that changes in working patterns since the Covid-19 pandemic mean that people now seek “a separate, quiet place to work in that's not the place you live” (C1.4, 03:44 & C1.5, 31:43). Likewise, changes in travel preferences mean workshop space for fixing bikes would also help (C1.5, 06:07). Thus, when considering the spaces that make up an adjustable infrastructure, flat owners make a clear distinction between their “purposeful” and sociable needs (C1.3, 07:03). This recognises that demand for social infrastructure is likely to be small or occasional (C1.4, 03:44 & 05:34; C1.5, 06:07) in “a quiet place” like the case study scheme which is certainly not “a wild, 24/7 kind of place” (C1.5, 04:47).

10.3.4.3. Opportunities to adjust shared infrastructure at Pocket Living

Turning to the *opportunities* that owners need to control and adjust the shared infrastructure of their housing environment, this section revisits the same questions asked at Marmalade Lane (see Section 10.3.3, above). In this case, however, the findings reflect the views of Pocket Living flat owners. The first of these questions is *why* such opportunities are important, the second is *what* opportunities Pocket owners need for inclusive decision-making. The section goes on to ask *how* the circumstances for these opportunities are created, before asking owners how they think such outcomes might be evaluated.

One answer to the question of *why* opportunities for informal decision-making are so important is that in multi-dwelling developments, “many comments make a standpoint” (C1.5, 09:09). In other words, when owners need to affect changes, “you're better off together… [to] gauge the general appetite of other people having the same problem” (C1.5, 09:09). Furthermore, co-management is a social opportunity “because you get to know who your neighbours are” (C1.5, 09:09) and “it breeds a sense of community” (C1.5, 11:37). Yet, the obligation to engage is limited to only four or five resident directors (C1.3, 13:32). This means remaining owners have less motivation to join Residents’ Management Committee (RMC) meetings, although in practice, around a third do, a third (or up to a half) do not and the remainder engage by email or by voting in surveys (C1.3, 13:32; C1.4, 10:39). Nevertheless, there has remained a “naturally formed group” who are able to make core decisions, despite the challenges of upholding their “commitment to always consult widely” (C1.3, 13:32).

More recently, however, the RMC members have found that “the original, very cohesive group kind of waned” (C1.3, 09:13) and now “people have to be dragged into it because there is work involved in doing budgets and dealing with contracts” (C1.4, 10:39). One reason for this is that “there is a fair amount of turnover” and “people move in and out all the time” until it becomes “just part of living here that your neighbours change” (C1.3, 09:13; C1.4, 1458 & 16:55). From the perspective of some owners’, this is happening because “these developments are [designed] for getting people onto the property ladder” (C1.5, 22.03.21). As a result, most people are buying Pocket flats as starter homes but “at some point will want to sell up and move on” (C1.4, 14:58; C1.5, 02:48). Indeed, “a lot of people who were here originally are gone” (C1.5, 07:51).

One consequence of this “transience at the community level” is that building up a community becomes “a little bit more difficult” and so, the ability to collectively adjust and improve the shared housing infrastructure starts to “feel less possible” (C1.2, 12:34; C1.5, 22.03.21). This means that residents’ continued

ability to manage their own housing is increasingly reliant on finding “ideal” new buyers who are either already interested in contributing to management decisions or are “at least open to it” once existing members have taken the time to explain it (C1.2, 19:16; C1.3, 15:22). Yet, new buyers on the resale market (i.e. those buying from an estate agent on the open market rather than directly from the developer), are arriving unaware of the shared management opportunities, possibly because to avoid inferring any responsibilities to the building or development as a whole (C1.4, 12:57). Consequently, uptake of management responsibilities might “just not quite be enough to make it work” (C1.2, 12:34).

The combination of transience and lack of awareness amongst new buyers leaves engaged residents (and particularly RMC members) increasingly reliant on finding informal opportunities “to make new people feel involved” (C1.2, 19:16; C1.3, 09:13; C1.4, 12:57). This raises the question of *what* opportunities are needed for this to happen. Digital infrastructure is one such opportunity at the case study scheme, where the RMC uses “the Facebook group, email… and a Survey Monkey for expenditure over a certain amount” (C1.3, 13:32). Another opportunity is shared spaces, where these are used as a focal point for organised social events such as the communal maintenance programme, a street party and occasional gatherings (C1.3, 02:42 & 09:13; C1.4, 08:00). These events, however, aggregate to only four or five opportunities each year “to kind of build that bond” (C1.3, 02:42 & 09:13).

Instead, what appears to be most important to flat owners is that the housing environment not only creates “a sense of security and privacy” for people but is also designed for “situating them in a place and enabling them to make connections with people around them” (C1.4, 42:57). This is because “community is such an important part of it - feeling not only safe in the physicality of it, but feeling that you know your neighbours, you know who's around, and that they're actually friendly” (C1.3, 34:58). This requires a balance of privacy and communal sharing that in the case study scheme is considered to

be “about right” (C1.2, 31:28). The question, however, is *how* such opportunities are created. One answer is the opportunity or right to take care of the plants or participate in maintenance days in shared outdoors areas, which fosters a sense of ownership and a chance to meet people (C1.3, 02:42 & C1.4, 08:00). Another is that “it's more about having spaces that you can go through and then incidentally meet each other” such as the walkways and the “parklet” (C1.3, 08:25). This means a garden or outdoor space is more important than an indoor room, because what is needed is “just somewhere for people to kind of dip in and out of” (C1.4, 05:34). This may explain why a clear majority of survey respondents (82 percent) say they want and would use a shared growing space[65] (C1.1, Q8), or why even the *journey* to the bins stores is an important opportunity for facilitating “incidental conversations with people” (C1.3, 07:03).

On top of these informal spaces and journeys, *commonality* between neighbours appears, once again, to be important for enabling inclusive dialogue and decision-making. Thus, the case study development “tends to attract a certain demographic” with “very similar socio-economic parameters” (C1.2, 08:37; C1.4, 49:44). One explanation given for this is that commonality is “a by-product of the way it was designed by the architects or… just by the nature of the people who qualify for a starter home” (C1.4, 49:44). These different commonalities appear to have produced a realisation amongst flat owners that people with similar values and journeys “would probably be a lot more inclined to get involved” (C1.4, 29:37). Another explanation, however, is that “there was a real cohesion amongst the original residents” as well as “a big feeling of optimism and friendship” for the simple reasons that everybody “moved in at the same time” and for everybody it was the first home they owned (C1.2, 08:37; C1.3, 09:13). Nevertheless, the “impressive sense of community when we first moved in” (C1.2, 08:37) and “that original, very cohesive group” appears to have “waned and things became more commonplace… [with] people moving out and new

[65] A further 9% of survey respondents also say they *might* use an outdoor space for growing, meaning that 90% of respondents see value in such a shared amenity.

people moving in" (C1.3, 09:13). This suggests that whilst shared values and journeys create important opportunities for collective decision-making, the stability of the community is nevertheless paramount.

One other aspect of this infrastructure for collective decision-making is the scale of the development. Indeed, scale may be a useful way of evaluating the potential for a scheme to be inclusive because the three-story high case study building is seen as manageable whereas a tower block might not (C1.5, 17:11). Another way of evaluating a manageable scale is the efficiency of decision-making, where "about sixteen different opinions is about as many as you'd want" (C1.2, 14:54 & 16:20). Thus, even though the case study scheme has around twice as many flats as this, it is "just about getting to the maximum" because in reality, "there are more people that don't get involved than do" (C1.2, 16:20; C1.3, 13:32).

Aside from scale, other ways of evaluating opportunities to adjust the shared infrastructure include the rate of turnover of flats (C1.2, 12:34; C1.5, 22.03.21), or by measuring the number of incidental conversations people have on their journeys around their home environment, or how often they are invited into a neighbour's house (C1.3, 07:03). Alternatively, this could be evaluated using the number of connections people have with the community around them, based on how many neighbours that somebody *feels* they know (C1.3, 34:58; C1.4, 42:57). This is because incidental conversations with people are seen as "absolutely the best thing about living here" (C1.3, 07:03), to the extent that one owners felt that if they were looking for somewhere bigger or with a garden, "the lack of a neighbourly community might be something that would hold us back" (C1.4, 33:43).

10.3.4.4. Summary: adjustable infrastructure at Pocket Living from the consumers' perspective

In summary, Section 10.3.5.1 (*Licence to adjust*) shows that owners of Pocket Living flats are realists and therefore neither seek nor expect to have the extent of control that cohousing offers. They are, nevertheless, aware that despite their inexperience as homeowners, their pathway *into* ownership gives them considerable insight into many housing situations. This means that buyers come with design insight, a mistrust of the property management industry and a determination to no longer feel like tenants. In practice, this means there is demand for a more *consulting* mode of development, where new buyers have some choice of finish, layout and the extent of management responsibility. There is also a sense of value in consulting existing Pocket communities on the design of future schemes. Section 10.3.5.2 (*Space to adjust*) shows that existing owners see added value in spaces that are informal, *purposeful* and often outdoor. This is because such infrastructure is more important than social rooms for helping people to stay longer in a compact flat. Purposeful spaces include bookable guest rooms and shared home working space, as well as a garden and growing space. Section 10.3.5.3 (*Opportunities to adjust*) shows that the original cohesion and engagement in management has waned because of transience. This happens because Pocket schemes are designed for getting people onto the property ladder rather than for permanence, and because estate agents do not make new buyers aware of the management opportunities. The community therefore needs more opportunities to feel connected and involved. The findings show informal spaces for dipping in and out of, could be effective infrastructure for achieving this, as well as incidental spaces to meet. Engagement also improves when there are commonalities between neighbours such as socio-economic background, similar housing pathways or aspirations in common. Possible ways of evaluating outcomes include measurements of transience, connectivity between neighbours and decision-making efficiency.

10.4. Adjustable infrastructure: a summary of the findings

By gathering together a brief summary of each section in Chapter 10, a picture emerges of the different stakeholder's views with regards to the shared infrastructure of a multiuser housing development. First, in Section 10.1, I considered the shared housing infrastructure from the point of view of the developer, the architect and sales (e.g estate agent and customer experience) at Marmalade Lane. Section 10.1.1 (*Licence to adjust*) showed that the producers' objective was to give residents a *feeling* of design control and therefore it would not have significantly changed the housing outcome if the consultation had happened later in the design process. Section 10.1.2 (*Space to adjust*) went on to show that the shared spaces are designed to convey a *feeling* of community, as a way of attracting buyers who are prepared to pay more for housing that offers a sociable experience. However, Section 10.1.3 (*Opportunities to adjust*) showed that whilst ways of *feeling* boost sales, opportunities for actually *being* in control are created by spaces, adjacencies and a scale of development that promotes 'unenforced or unselfconscious' interactions during use.

At Pocket Living, by comparison, Section 10.1.4.1 (*Licence to adjust*) showed that whereas, the architect believes that some consultation with users would have added design value, the trade-offs between shared space and private space in Pocket schemes are instead decided by the developer, based on customer profiles on the database, insights from Pocket's management app and a perception that first time buyers need a 'hand-holding' level of service, having become used to a landlord doing everything for them. Section 10.1.4.2 (*Space to adjust*) went on to show that the developer's brief is driven by cost constraints and a sociable, lifestyle brand, whereas the architect would have prioritised flexible shared spaces to make smaller flats more feasible. Lastly, Section 10.1.4.3 (*Opportunities to adjust*) showed that the Pocket brief is directed towards the first buyer cohort rather than future users and therefore prioritises

ways of kickstarting the community (e.g. the garden, entrance sequence and launch events) over less tangible infrastructure such as governance systems, incidental spaces and 'eddies' in the circulation that create informal opportunities for neighbourly interaction.

In Section 10.2, I considered the shared housing infrastructure from the point of view of the planners and enablers. The first three sections considered Marmalade Lane. Of these, Section 10.2.1 (*Licence to adjust*) showed that the enablers led the briefing process and therefore had more agency than the original resident group over the design of shared housing infrastructure. Section 10.2.2 (*Space to adjust*) showed that a conflation of a sharing economy with the sustainability agenda produced a brief for big, expensive spaces to accommodate shared social experiences (shared cooking, dining and gardening), rather than smaller more adjustable spaces as infrastructure for supporting people in smaller houses. Nevertheless, Section 10.2.3 *(Opportunities to adjust)* showed that both the planner and the enabler recognise that any systems and spaces that encourage people to stay in a scheme like Marmalade Lane for longer, are valuable infrastructure for community-building and decision-making.

At Pocket Living, by comparison, Section 10.2.4.1 (*Licence to adjust*) showed that the quantum, function and even the location of shared amenity are often determined by the planners, during a negotiated approval process. Yet, Section 10.2.4.2 (*Space to adjust*) showed that there is no guarantee that what the planners require will match what the community requires because would-be residents are not consulted. On top of this, Section 10.2.4.3 (*Opportunities to adjust*) showed that despite their apparent value to both the architect and developer, circulation spaces such as walkways and stairs are not recognised by statutory authorities as valid outdoor amenity that could count towards offsetting shortfalls in private outdoor space (e.g. balconies).

In Section 10.3, I considered the shared housing infrastructure from the owners' perspective. The first three sections considered Marmalade Lane. Of these, Section 10.3.1 (*Licence to adjust*) showed that financial control has value to the community because it creates an excuse to hold meetings - just as control over sales means the community has the power to choose like-minded neighbours - whereas control over the architecture has so little value that buyers tend to be happy to leave design decisions to others. Likewise, Section 10.3.2 (*Space to adjust*) showed that shared spaces create an excuse for neighbours to meet because the consensus will continuously shift between those who see space sharing as an expression of sustainable living, those who see it as a social destination, and those for whom it is an extension to their home. Section 10.3.3 (*Opportunities to adjust*) showed that the adjacency and scale of incidental shared spaces - as well as demographic similarities between neighbours - create an essential infrastructure for 'informal non-meetings'.

At Pocket Living, by comparison, Section 10.3.4.1 (*Licence to adjust)* showed that first time buyers' could provide valuable insight into design and management at their own and future schemes, because they come with diverse housing experiences, misgivings about the property management industry and have informed value judgements concerning aspects of choice and control (e.g. over finish, layout and management) that differentiate homeownership from rented tenure. Section 10.3.4.2 (*Space to adjust*) showed that given such choices, flat owners would place more value on spaces and amenities that are informal and *purposeful*, rather than managed and sociable (e.g. bookable guest rooms, shared home working space, a garden or growing space), on the basis that these would make it easier to stay in a compact flat for longer. However, Section 10.3.4.3 (*Opportunities to adjust*) showed that the original cohesion and engagement in management has waned because estate agents do not make new buyers aware of the management opportunities, and because of a transience that comes from flats that are designed to get people onto the property ladder. Thus, another piece of purposeful infrastructure is anything

that creates opportunities for people to feel connected and involved, such as informal spaces for dipping in and out of, incidental spaces to meet or commonalities between neighbours such as socio-economic background, similar housing pathways or aspirations in common.

The analysis of both models produced a range of ways that users evaluate the success of their housing infrastructure. Section 10.3.3 (*Opportunities to adjust*) shows that at Marmalade Lane, residents value a feeling of empowerment. They associate this with the ability to remember everybody's names; the sense of being supported but also able to *provide* support; children's ability to play freely together; efficient decision-making; the ability to call on the neighbours' skills (e.g. upkeep and new adjustments in the shared environment); and lastly, enough people so that participation feels optional. Similarly, Section 10.3.4 showed that Pocket Living owners evaluate success in terms of low turnover of flats, connectivity between neighbours and efficient decision-making. To understand how the findings in Chapter 8-10 might contribute to a theory of adjustable housing, however, I draw the important strands together in the synthesis Chapter that follows (see Chapter 11).

PART III
TOWARDS A DEFINITION OF ADJUSTABLE HOUSING:
Synthesis and recommendations

11. **Synthesis:** Comparing the three dimensions of adjustable housing

In Chapter 11, I bring together each of the previous, findings chapters in turn. These were: *adjustable tenure* (Chapter 8); *adjustable dwellings* (Chapter 9); and, *adjustable infrastructure* (Chapter 10). In creating the synthesis that follows, I have attempted to expose the important themes and subthemes within these findings. These, in turn, feed into the conclusions in Chapter 12, in which I will propose a framework for describing and implementing adjustable housing. This is to deliver on the research aim of describing and implementing housing systems that are adjustable over a multi-stage life course and viable to build in a UK context.

11.1. Adjustable tenure: a synthesis of findings

Chapter 8 introduced *adjustable tenure* (or, 'less-than-whole-home' ownership) as the first of the three dimensions of my adjustable housing thesis. Here I showed that an adjustable tenure may be thought of as having three key characteristics. These are, a way to accommodate different levels of buyer *commitment,* an adjustable *investment* fund to underwrite different degrees of ownership and, an understanding of the role that tenure plays in shaping a community *demographic* that is capable of making decisions together. The case study findings summarised below are organised around these three themes, in each case starting with Marmalade Lane, before turning to Pocket Living. The section concludes with a synthesis of the findings relating to *adjustable tenure*, from a capabilities perspective.

11.1.1. Adjustable commitment

At Marmalade Lane, a lack of buyer *commitment* meant there were substantial risks and costs in developing for private sale. This is because some buyers could not commit until they had sold the home they were living in, such that some homes were customised by pre-buyers who subsequently dropped out (Section 8.1.1). From the developer's perspective, these risks added costs that would have been more manageable had approximately one third of buyers been contractually committed to buying their homes at project inception, and had another third committed fully before construction began[66] (Section 8.1.1). Likewise, in the enablers' opinion, such early commitment would have been achievable had the founding members agreed to underwrite the scheme using their own money, by collectively purchasing a portion of the properties for onward rent or part-rent. Indeed, an arrangement along these lines could have been an attractive investment opportunity for some members, as well as another way of capitalising the project early on (Section 8.2.1). Instead, however - and despite their commitment to inclusivity and the rejection of landlords - the founding group allowed members to buy second homes at the point of completion to individually sublet, and on terms which have denied tenants the level of adjustability and tenure security that owners enjoy (Section 8.3.1). Thus, the developer's recommendation is that the risks of funding a development like Marmalade Lane (at least up to the point of handover) should be borne by a slightly removed private equity investor and a landowner with a policy aim or legacy intent, because their borrowing costs will be lower (Section 8.1.2).

In contrast, buyer *commitment* and sales risks are much smaller for Pocket Living. This is because its database of potential customers is oversubscribed and gives the developer an insight into their buyer demographic that is so complete that they have the confidence to deliver single-size, single-tenure schemes

[66] In terms of the *RIBA Plan of Work,* this implies having a third of buyers committed by the end of RIBA Stage 1, 'Preparation and Briefing', with another third contractually committed by the end of RIBA Stage 4, 'Technical Design' (RIBA, 2020).

specifically for that specialist market (Section 8.1.4). Yet, whilst the resident interviews showed that the chance to buy a Pocket flat was an opportunity to exit the rented sector and acquire secure, stable tenure, the owners nevertheless appear ambivalent about homeownership in principle. For example, some miss the flexibility of renting and worry that if their circumstances were to change (e.g. changes in employment, income, cohabitation or family), a move back into rented accommodation might be more feasible than trading up to a bigger, more expensive home in the same area (Section 8.3.4.1).

In summary, a combination of unknowable futures or resale problems means that both first time buyers and existing homeowners face commitment problems. The resulting risks of unravelling sales are capitalised into development costs, whilst some customisation work and sales processes are eventually abortive because some buyers will withdraw. Yet, neither model offers more flexible, adjustable ways of owning a home or managing uncertainty, as could have helped to expand residents' capabilities.

11.1.2. Adjustable investment

Returning to Marmalade Lane, the findings show that in the developer's opinion, a partnership with an outside *investor* - through an annuity leaseback arrangement[67] for example - might have enabled buyers at the edges of homeownership to join the scheme on terms that offer security of tenure with less financial exposure (Section 8.1.2). Likewise, institutional buy-to-rent investment capital (e.g. from a pension fund) would have lowered the developer's risks and, in the developer's view, would have made the wider

[67] An *annuity leaseback* model is where a local authority commits to paying a sustainably low level of rent (e.g. fixed to RPI) to a pension-type funder, by taking a head lease on the scheme (P2.1, 08:30). "It's build-to-rent but… means their net yield requirement can be dropped to absolute rock bottom, which in turn means that the budget to build the thing goes up" (P2.1, 46:22).

social, environmental and economic design objectives of the project more achievable (Section 8.1.2). Such an arrangement might even have given people who preferred to rent their home, the option of buying or part-buying equity over time - an opportunity for inclusivity that some members' feel was missed at Marmalade Lane (Section 8.3.2). Thus, an outside investment model - one involving third party capital - could have created a more diverse demographic, given more accommodating lease terms.

Instead, however, individual buyers were allowed to buy second homes to sublet on uneven and unequal terms. This appeared to have happened for three reasons. The first is that some people saw Marmalade Lane as an investment opportunity or a place to put their money (Section 8.3.2); the second is that the scheme presented an opportunity to acquire a smaller, more accessible flat as insurance against the risk of changing housing needs in older age (Section 8.3.2); the third is that there was concern that an outside investor would create complexity by imposing investment objectives that could compete with or diverge from those of the founding residents (Section 8.2.2). Thus, whilst Town, the developer, is clear that Marmalade Lane depended heavily on deferred land payments - making it "reliant, in the end, on the landowner being either a public body with a policy desire to do this, or a private landowner with a bit of a legacy intent" - it is also clear that the buyers preferred not to involve an outside landowner or investor beyond sale (Section 8.2.2, quoting S2.1, 36:22). Section 11.1.3 (below) shows that concerns around tenure and demographic differences were also at play.

In contrast, Pocket Living sees a role for a build-to-rent offer in their future schemes. This is not, however, in response to their growing awareness of buyers' nervousness and associated commitment problems, but is motivated instead by their desire for portfolio diversification (Section 8.1.4). Tenure diversification would also help to mollify planning officers and councillors, whose preference is for family social rent, rather than Pocket's standard,

single-tenure, private sale model (Section 8.2.4). Existing Pocket owners, however, say they may not have been interested in either rented or part-rented options - even had these tenures been available at the time. This is because their motivation in choosing mortgaged homeownership was to escape the powerlessness of renting (Section 8.3.4.2). Thus, whilst most say they were not motivated by any expectation of capital gains - and therefore a shared *equity* arrangement would have been acceptable, in principle, as an affordable way of buying more space - they would nevertheless have been resistant to any rented or shared ownership arrangement that meant handing over some control to a third party owner or housing provider (Section 8.3.4.2).

In summary, both developers and their buyers appear resistant to shared ownership because of their reluctance to share control with an outside investor. This is even if such arrangements could offer more inclusive or adjustable ways of owning a home. Instead, both Pocket Living (the developer) and individual buyers at Marmalade Lane say they would prefer buy-to-rent but because it is a way of diversifying their investment portfolios, rather than as a way of expanding ordinary residents' capabilities through the adjustability offered by rented tenure over mortgaged ownership.

11.1.3. Adjustable demographic

Returning to Marmalade Lane, people report that their anxieties about sharing control are not restricted to outside investors. For example, the architect and developer believe that had the scheme included any build to rent or social rented homes, some prospective buyers would have left the group, leaving the developer yet more exposed to sales risks (Section 8.1.3). Such anxiety amongst buyers was due to their perception that a renter demographic is likely to be less culturally, financially and practically committed to co-managed living, whilst a social tenant could be a bad fit for the group "or worse, just rough" (Section 8.1.3, quoting P2.1, 16:48). In the enablers' view, one reason that these anxieties

became so established is that the values-based decision-making process that produced the design at Marmalade Lane, gave participants the opportunity to decide *who* they wanted their neighbours to be (Section 8.2.3). This produced a community where 95% of members now have very similar values, and favour those with the time and money to participate, whereas some people with divergent views were "treated quite difficultly" (*sic*) and ultimately left the project (Section 8.2.3, quoting S2.1, 07:32).

From the resident owners' perspective, this process has produced a demographic whose unifying characteristics are political, occupational and educational (Section 8.3.3). Indeed, these socio-economic similarities were so tightly held by the residents at the time that when faced with a time-critical choice between allowing the developer to sell unsold homes to whoever they wanted or allowing some group members to become landlords, the group chose the latter (Section 8.3.3). This decision ensured that it was the original members - rather than the market - that had the final say on the community demographic, because those with two homes could choose their tenants. However, it also meant that the group had to abandon their original tenet that "buy-to-let landlords are not a good thing and we don't want them" (Section 8.3.1, quoting C2.2, 29:16). One consequence of this decision has been the emergence of a two-tier community at Marmalade Lane, in which tenants have no decision-making powers and tend not to participate in maintenance and decision-making (Section 8.3.3).

At Pocket Living, by contrast, it is the developer alone - rather than a group of future residents - that has had the opportunity to shape the community demographic. Yet, alongside the architect, the developer's perception is that Pocket communities are *age-specific*. This is on the basis that their customers are not simply buying a flat but are in reality buying an opportunity to enter the property ladder at a lower price point and in the company of people following a similar housing pathway. These factors mean that in many instances, they see

their choice of home as a sociable but short-term stepping stone towards their preferred home elsewhere (Section 8.1.4).

In practice, however, many of the Pocket owners that were interviewed have owned their flat for over six years and still regard their decision to buy as an open ended commitment, at least for the medium-term. This is because it is still giving them - and more recent buyers too - the combination of stable tenure and a compact living space that means their exposure to changes in the housing and labour markets is smaller than if they had chosen a bigger home with higher mortgage costs (Section 8.3.4.2 & 8.3.4.3). As these original buyers move into their 40s and new buyers arrive, ranging from people in their 30s to at least one buyer in their 50s, the once-age-specific demographic has evolved into what appears to be a more *risk-specific* owner profile, being people whose priority is "to go for the lower risk option" (Section 8.3.4.3, quoting C1.4, 26:20).

In summary, both models extend their buyers' capabilities by controlling aspects such as dwelling space and tenure to produce a demographic that is variously age-specific or value-specific, and characterised by similar educational or housing pathways. Over time, however, the Pocket Living demographic is naturally adjusting to become older and more *risk*-specific, whereas at Marmalade Lane, the community's right to sublet and influence resales means they have more power to decide if and how their community demographic will adjust in the future.

11.1.4. Synthesis of findings relating to adjustable tenure

In Section 11.1 I have shown that more adjustable alternatives to owner-occupied private sale housing - such as shared ownership or build-to-rent - could give consumers a way of more confidently *committing* to a housing choice. This is even if they take longer than they expected to find a buyer for the house they are moving from, or find they cannot predict their own

future needs and means in a changing market. Such alternatives need an institutional investor or pension fund to provide low cost capital in return for a steady rental income stream. This is something that the developers say could lower development risks (especially around sales, planning, borrowing and investment) and in turn, make social, environmental and design objectives more viable to build. Such outside *investment*, however, would impose a mix of tenures on the community, whilst obliging residents to share decision-making with a large and influential stakeholder (i.e. a buy-to-let investor or registered social landlord). This was something that both existing homeowners and first time buyers said they would resist because of the complexity of involving a third party and also because renters are seen as being less likely to participate in co-management processes than homeowners. Meanwhile, Pocket Living buyers say that even if shared ownership could have allowed them to buy more living space from the outset, they would still reject this and anything similar that feels like renting. Instead, they favour the security, stability, familiarity and low investment risk of a compact, mortgaged flat.

Yet, the age range of Pocket owners is expanding, suggesting that Pocket Living customers are cautious but not necessarily as young or lifestyle-based as Pocket's brand would suggest. Likewise, the existence of lodgers and tenants at Marmalade Lane suggests that cohousing customers are not restricted to the values-based homeowner demographic that the original group members would have chosen. Rather, there is a more cautious and capabilities-led demand characteristic which requires a more flexible approach to tenure. Thus, the enablers' suggestion of using surplus wealth from within the resident community to collectively fund other ways of accessing housing, may justify further research. A schedule of the findings concerning *adjustable tenure* is at Appendix D, organised around the RIBA Work Stages.

11.2. Adjustable dwellings: a synthesis of findings

The findings in Chapter 7 explain why the idea of *adjustable dwellings* (that is, homes that can be adapted with little or no physical change to the external envelope) has become the second of the three dimensions of my adjustable housing thesis. Here I showed that a combination of a larger minimum *floor space*, a housing *mix* that supports inclusivity and change, as well as ways of varying the housing *density* over time, can, together, help to expand people's capabilities, by allowing residents to make adjustments to their private living space, but without requiring them to move house or make physical alterations. The findings summarised below are organised around these three themes - floor space, housing mix and housing density - in each case starting with Marmalade Lane, before turning to Pocket Living. The section concludes with a synthesis of the findings relating to *adjustable dwellings*, from a capabilities perspective, accepting that these may not apply universally, being based on only two development models.

11.2.1. Adjustable floor space

At Marmalade Lane, the findings show that the adjustability of private floor space was largely led by the enablers, for whom the 3-4 bedroom townhouses that make up most of the private floor area of the scheme (see Section 9.1.1) provide a version of adjustability that suited both the local planning vision and the relative wealth of the residents that participated the briefing and co-design process. The adjustable element of these townhouses was their convertible attic spaces, which gave buyers the option to customise or expand within. However, the adjustability of this approach was in fact limited by the fact that even minor external works require planning approval, making unforeseen alterations more costly and uncertain. This is the case because permitted development rights - that is, the rights of the community to approve certain external alterations -

were withheld by the planners, forcing the architect to try to predict all possible changes using design codes (Section 9.2.1). Such detailed design codes were needed because neither the local design guide nor the group's design brief were flexible enough to find enough common ground upon which to build trust between the two parties (Section 9.2.1). Compounded by the design choice of a modular construction and small floor plates, the planners' decision to withhold permitted development rights has meant the dwellings are simultaneously more likely to need alteration, yet also more difficult for occupiers to adjust (Section 9.3.1).

Despite these restrictions, the developer believes there is a *sales* benefit in offering unfinished attic space. This is because the opportunity to customise a home by expanding within, helps to attract a wider pool of buyers in an otherwise narrow and specialist homebuyer market (Section 9.1.1). In the agent's view, however, this strategy added little *financial* value or adjustability, relative to the cost of delivering a fully converted attic in the first place (Section 9.1.1). Likewise, in the architect's opinion, any discount and the opportunity to customise is only valuable for the first owner (Section 9.1.1). Indeed, owners see the option of a one-way loft conversion process as something which comes at the *expense* of the long-term affordability and inclusivity of the scheme. This is because as more lofts are converted, a growing number of bigger, more expensive homes mean the scheme will become less affordable in aggregate, and therefore less inclusive (Section 9.3.1).

At Pocket Living, by comparison, the developer's affordability objectives mean there is not the margin to offer buyers a larger floor space that they can thereafter adjust or expand to meet their future needs. This is because the customer demographic dictates an affordability model where "every inch of space" must be maximised and therefore cannot help a buyer to meet their future needs (Section 9.1.4). Nevertheless, Pocket's preference would be to develop a more adjustable - yet, still affordable - two-bed/two-person flat type

for flat sharers (51-58m2). Indeed, they say they would do so, were it not for space standards legislation which defines a two-bedroom flat as being for no fewer than three people and at least 61-70m2 (Section 9.2.4). Thus, Pocket's standard 1-bed/1-person flat type (at 37-38m2) continues to dominate their schemes, with the effect that residents expect to have to move house after a shorter period of occupation than they would otherwise prefer (Section 9.3.4).

In summary, there is evidence that the developers of both case study models recognise that small increases in floor area or more adjustable flat layouts can make big differences to people's freedoms and capabilities for relatively little additional cost. Yet, adjustability is only considered at the micro-scale of the single dwelling - a scale at which planning rules restrict external changes, forcing an over-reliance on design codes, whilst space standards are not granular enough at the lower ends. Further, mistrust of developers led to withholding of permitted development rights at Marmalade Lane, thus adding to the fixity of the living space that was delivered there.

11.2.2. Adjustable housing mix

Turning to the *housing mix*, the developer's aim at Marmalade Lane was that a variety of dwelling types and sizes would support not only a more intergenerational community but also enable people to adjust to changing needs through occasional house swaps (Section 9.1.2). However, the agreed housing mix is in fact skewed towards the preferences of those members who were involved at the briefing stages (as opposed to those of the majority of members who were yet to join the project). This is because the enablers' priority was to sustain the claim that the project was resident-led, making it imperative that the self-selected resident group should be kept together, in apparent harmony and of a single mind (Section 9.2.2).

To ensure this outcome, the enablers at Marmalade Lane led what they describe as a *values-based decision-making process* (Section 9.2.2). However, their participation created a forum through which the founding group members were free to scale up from their own housing needs, on the assumption that these would reflect the needs of those people who were yet to join the project. This produced a brief which allocated the majority of the development area to homes to suit people with more wealth and resources, whilst smaller flats were designed to suit older downsizers, rather than the missing demographic of younger, more price-constrained couples without children (Section 9.3.2). The resulting mismatch between what participants' thought other buyers would want, and what the market actually showed they wanted, left the developer yet more commercially exposed, leading to excess expenditure on market-ready enhancements that made the project more expensive in aggregate (see Section 8.1.1). In response to this problem of spiralling risk and cost, one owner suggested that an improved model might increase both the number of smaller, more affordable homes, as well as the extent of shared spaces, so that the needs of parents, children and teenagers would have ways to “spill out” (Section 9.3.2 - see also Section 10.3.2).

In contrast, the Pocket Living model prioritises exactly this younger, price-constrained demographic - often manifest as single-person households. Thus, their schemes are designed to be more affordable, not only by means of their compact, one-bed flat size but also through the use of repetitive, modular, off-site construction systems which reduce capital costs (Section 9.1.4). Whilst this approach improves affordability, it also means that Pocket schemes will continue to be dominated by hard-to-adjust one-bed flats (at 37m2), with fewer affordable two-bed options than had planning permitted the compact but more adjustable two-person sharer variant that Pocket would otherwise have preferred to build (Section 9.2.4). This means that any prospect of trading up within a Pocket Living development, relies on there being at least some affordably compact two-bed flats within the same scheme, to which the first

cohort of owners in smaller flats might trade up (Section 9.3.4). Instead, the lack (or absence) of variety in the housing mix at Pocket Living schemes means the formation of a two-person household or the birth of a child would necessitate a move out of the scheme - something which is creating higher rates of turnover within the community and, in turn, causes levels of management participation to wane over time (Section 9.3.4).

In summary, the case study models suggest that a combination of planning rules, space standards and even resident-led co-design can constrain or skew the mix of dwelling sizes that are ultimately delivered. This makes it harder for people to adjust their housing by trading up (or swapping) to a home in the same development, if or when their needs change. Instead, they may have to leave their community and thereby lose capabilities that are built up over time, between neighbours and across local networks. Further, when the housing mix is fixed, the developer does not have the means to make adjustments during construction - even as the market reveals itself during sales. Thus, fixity in design leaves developers carrying what should be an avoidable risk, in the event of a mismatch between supply and demand.

11.2.3. Adjustable density

An *adjustable density* - that is, enough divisible/joinable dwellings to enable the number of separate homes in a scheme to adjust up or down - could be expected to have helped to counter the problems of mismatch. Equally, this approach could have provided an alternative to building unfinished lofts that can only be adjusted once. Yet, this opportunity was designed out from the outset because the building fabric is too fixed to be altered, the flats are too big to be joined and the floor plans of the townhouses are too small to be divided (Section 9.1.3). From the planner's perspective, however, these problems were not inevitable because a *scenario-based approval framework* - based on agreed maximum and minimum number of dwellings - would have allowed the local

authority to entrust control over the housing density to the community, within agreed bounds (Section 9.2.3). Indeed, from the residents' perspective, the right to join or divide dwellings over time would have enabled them to make *continuous* adjustments to meet their affordability and care needs, in a way that custombuild and a one-way expansion into an attic space does not (Section 9.3.3). Such rights were not realised, however, because planners feel at risk of being exploited by developers, or of being undermined by a resident group claiming to speak for the community (Section 9.2.3). Instead, the default position of a local authority is to fall back on housing needs assessments that planners know to be out-of-date, simply as a mechanism for keeping control of the housing outcome (Section 9.2.3).

Notwithstanding these constraints and opportunities, both Pocket Living and the community at Marmalade Lane variously recognise that divisible/joinable dwellings would need to overcome technical, spatial, tenure, legal, logistical and awareness barriers, as well as as the problem of void risks - especially in a scenario where the offer to owners was to join their own flat by *renting* an adjacent flat, be this next door or above/below (Sections 9.1.4 & 9.3.3). From the residents' perspective, however, the idea of joinable/divisible dwellings is not only seen as a valuable and even *ordinary* way of adjusting housing, but as a solution that could be achievable without having to deviate from the standard, compact one-bed flat typology that makes Pocket's offer affordable to an initial cohort of single, first-time buyers (Section 9.3.4). Furthermore, by producing a mix of dwelling sizes, a variable housing density could make planning applications less contentious (Section 9.2.4).

In summary, it appears that an adjustable housing density is not only feasible from a planning perspective, but also desirable from a consumer point of view. There remain, however, technical challenges around legal title, construction and design. Further, there is a need for greater understanding around the assurances that local authorities would require before agreeing to a

scenario-based planning approval.

11.2.4. Synthesis of findings relating to adjustable dwellings

Section 11.2 has shown that from an adjustability perspective, the approach to dwelling design at Marmalade Lane delivered too many townhouses and not enough flats. This is because the houses are hard to divide and can only be adjusted once, whilst the flats are too big to sensibly join. These problems appear to have happened for six reasons. The first is the mix of dwelling sizes is skewed towards the preferences of the group at the time, rather than those who bought on the open market. The second is that the design briefs are *age-specific,* being based on a lifestyle or demographic that comes from the developer or the group members at the time (i.e. not necessarily the end users). The third reason is that the custom-build offer (e.g. the unfinished attic spaces) is intended to boost sales, rather than to enhance long-term adjustability and therefore all the benefits accrue to the first owner only. The fourth reason is that construction choices are based on building performance and financial viability, leading to modular or panelised systems that cannot be so easily adjusted in use or even on-site (although this need not be the case). The fifth reason is that space standards are too prescriptive at the lower end (particularly in the 51-58m2 range) and do not support a two-bed sharer or parent and child scenario. The sixth is that the housing density is derived from out-of-date housing targets, made permanent by the denial of permitted development rights by planners who fear exploitation by resident-led housing, leading to an over-reliance on design codes.

Instead, a challenge for design research is to develop ways of approving and delivering developments with an adjustable housing density. The findings suggest that if legal, technical, logistical, planning and void risk challenges were to be overcome, a joinable/divisible version of the one-bed Pocket Living typology could be possible. With enough adjustability in the design, this would

have the potential to enhance people's capabilities over the longer term. A tabulated schedule of the findings concerning *adjustable dwellings* is at Appendix D, arranged by RIBA Work Stage.

11.3. Adjustable infrastructure: a synthesis of findings

The findings in Chapter 10 explain why an *adjustable infrastructure* (or a shared housing environment) has become the third of the three dimensions of my adjustable housing thesis. Here I showed that a combination of legal and management powers (or *licence to adjust*), designated shared spaces (or, *space to adjust*) and informal socio-spatial circumstances (or, *opportunities to adjust*) can, together, make it easier for people to adjust and co-manage their own housing environment. The case study findings summarised below are organised around these three themes - licence, space and opportunities - in each case starting with Marmalade Lane, before turning to Pocket Living. The section concludes with a synthesis of the findings relating to *adjustable infrastructure,* as seen from a capabilities perspective. Once again, it is accepted that the observations and recommendations arising from my findings may not apply universally, having been based on only two development models.

11.3.1. Licence to adjust the infrastructure

The findings from Marmalade Lane showed that whilst the architect and the developer granted the founding members some *licence to adjust* the design, the residents themselves did not believe - with the benefit of hindsight - that the housing outcome would have been significantly different had they been consulted much later in the design process (Section 10.1.1). This suggests that the objective of the co-design process was in fact directed towards giving participants at the time a *feeling* of control, rather than enhancing the

capabilities and sense of control experienced by subsequent residents (Section 10.1.1). Indeed, the scheme did not substantially change beyond the feasibility design stage[68], during which it was anyway the enablers - rather than the participants - who led the process (Section 10.2.1). This was ostensibly to keep the group from unravelling and to thereby maintain a sense of legitimacy in the eyes of the local authority - a legitimacy that comes from the claim to be delivering resident-led housing (Section 10.2.1).

The extent of the enablers' control over the design, however, does not appear to have mattered to the owners, for whom the right to set and spend the service charge is important, whereas co-design was something many were happy to leave to others (Section 10.3.1). One reason that residents attach such importance to decision-making - even over the opportunity of a co-design process - is that by taking collective responsibility, neighbours acquire an *excuse* to meet and get to know each other. This level of participation - in use but not during design - helps to expand their capabilities by encouraging interactions through which people acquire the confidence and agency to adjust and optimise their shared housing environment (Section 10.3.1). Indeed, the need to have neighbours they can work with (see Section 11.3.3) may explain why the community also values the chance to influence sales by effectively interviewing prospective buyers and by giving first refusal to people on their own waiting list (Section 10.3.1; see also Section 8.1.3). Likewise, for planners, there is an amenity benefit to co-managed communities because they are more accountable, less transient and better kept than individually owned or even professionally managed developments (Section 10.3.1).

At Pocket Living, by comparison, potential buyers have no licence to adjust the design. Instead, Pocket bases its decisions around the necessary trade-offs between private living space and shared infrastructure, on insights from its database of potential customers. Insights include usage patterns, as revealed by

[68] RIBA Workstage 2: 'Concept Design' (RIBA, 2020)

its management app, and the first-hand insight that comes from providing a *hand-holding* service for customers leaving rented accommodation for the first time (Section 10.1.4.1). Yet, Pocket's centralisation of design decision-making happens despite the architect's belief that there is a benefit to involving potential buyers from Pocket's database of 18,000 waiting customers in a *briefing review process.* In other words, the architect would choose a consulting process even above the sorts of co-designing or customising levels of user engagement seen at Marmalade Lane (Section 10.1.4.1). Indeed, the residents themselves say that without any involvement from potential buyers, Pocket is missing out on their unique and extensive insights on housing design, as gained through their diverse and recent housing experiences acquired over years spent moving through the private rented sector (Section 10.3.4.1). Their insights include a mistrust of property management companies and a consistent view that design value lies in aspects of ownership that enhance their capabilities beyond what they had as renters. Enhancements include autonomy over management decisions or some limited agency over matters so small as internal finishes or a limited choice of floor layout (Section 10.3.4.1). Yet, in practice, it is the local authorities who have the greater opportunity to influence the shared housing environment, by using the negotiated approval process to offset what they see as a lack of amenity and outdoor space in the flats themselves (Section 10.2.4.1).

In summary, the findings suggest that from a capabilities perspective, the licence to co-manage a scheme during use is more valuable to occupiers than the opportunity to participate in co-design during the briefing stages. Nevertheless, a shared housing environment cannot claim to have maximised the freedoms and trade-offs that people need unless users are given some opportunity to review and adjust the brief, and make even small customising choices from a limited set of options. This is especially true of price constrained buyers whose insights from years spent living in multiple shared or rented housing situations makes them uniquely qualified to advise developers on the

ways that ownership can expand their own freedoms and capabilities.

11.3.2. Spaces to adjust

Returning to Marmalade Lane, the shared spaces offered on site appear to have been designed to attract buyers who are willing and able to pay more for a sociable housing experience (Section 10.1.2). From the enablers' point of view, this sociable space sharing approach became central to the brief because the sustainability agenda had become conflated with notions of a sharing economy during the *values-based decision-making* process (Section 10.2.2). As a result, it was the group's sustainability goals that led to a brief that favoured big, expensive spaces to support shared social experiences (e.g. shared cooking, dining and gardening), that other groups could not have afforded and which do not directly engage with the spillover of housing needs from larger households or from people in smaller dwellings (Section 10.2.2). Thus, just as resident participation skewed decision-making in favour of bigger dwellings that suited the group but not necessarily the open market (see Sections 10.3.2 and 11.2.2, above), so too did they favour shared *social* space over the sort of "spill out" spaces that could have supported a greater number of smaller flats (Section 10.3.2 - see also 9.3.2).

For residents, however, the real value of shared spaces lies neither in their function as a social gathering space nor in their utility as spill-out spaces *per se.* Rather they represent "something to bind around" and an excuse to hold meetings (Section 10.3.3, quoting C2.4, 17:44). Such excuses for neighbourly contact are essential because shared spaces require constant adjustment if they are to accommodate shifting demand for environmental, social, economic benefits (Section 10.3.2). Adjustments to date have included the conversion of guest rooms into occasional workplaces, whilst in the future, play spaces may be needed to help with any spillover from private homes, once children become teenagers (Section 10.3.2). Thus, the findings show that Marmalade Lane (and

cohousing in general) would appeal to more people if it were to be described as *"properties with great shared facilities",* rather than being branded as a lifestyle choice or associated with labels such as *'cohousing'* and *'commune'* that have connotations that are off-putting to some people and which will be hard to undo in the future (Section 10.3.2, quoting C2.4, 33:50).

Whereas spillover spaces were seen as secondary to the social spaces at Marmalade Lane, the Pocket Living architect that I interviewed took the opposite view, seeing functional spaces such as storage and workspace as being vital supporting infrastructure for compact living (Section 10.1.4.2). Being constrained by cost and brand, however, the developer's brief puts more emphasis on spaces that attract *sales* by marketing a sociable, shared housing environment as an aspirational lifestyle choice (Section 10.1.4.2). The architect's influence is further constrained by the planners, who have considerable leverage over the extent, function and even the location of shared spaces in a scheme (Section 10.2.4.2). Had they been asked, however, flat owners say they would have placed more value on spaces and amenities that are informal and *purposeful* - rather than managed and sociable. This is on the basis that adjustable spillover spaces would make it more feasible to remain in a compact flat for longer (Section 10.3.4.2). Examples of such purposeful amenities that scored highly amongst the surveyed cohort of Pocket residents include bookable guest rooms, shared home working space, a garden or growing space (Section 10.3.4.2).

In summary, the findings suggest that resident participation at Marmalade Lane has galvanised an environmental agenda from which has flowed an idea of sustainable sharing. This, in turn, has produced an excess of expensive *social* spaces with cost and maintenance liabilities that for many buyers, are neither valuable nor affordable. Instead, a greater emphasis on purposeful, *spillover* spaces in both development models, could have helped owners to adjust their private home by occupying semi-private areas in ways that could make smaller

flats more feasible for longer and in turn, help to expand people's capabilities over the longer term. It appears, however, that in practice, the social value of shared space is in fact neither in the lifestyle that they offer, nor even in the utility of the spaces themselves. Rather, their value lies in their role as *"something to bind around"* and an excuse to hold meetings. Thus, in place of fixed and sometimes off-putting labels such as *'cohousing'* or *'commune'*, a more adjustable - and potentially more sellable model - could be described as *"properties with great shared facilities"* (C2.4, 33:50).

11.3.3. Opportunities to adjust the infrastructure

At Marmalade Lane, the architect and developer's view is that a combination of spatial factors - including adjacencies, incidental outdoor areas and a limited size of development population - create opportunities for *being* (rather than simply *feeling*) in control. This is because such semi-private infrastructure encourages unforced or unselfconscious interactions (Section 10.1.3). Furthermore, both the planner and the enablers recognise that these factors are valuable for community-building because they encourage people to establish trusting, consensus-building relationships which in turn, makes them more likely to stay in a scheme for longer (Section 10.2.3). For this degree of stability to become established, the essential factors from the residents' perspective are not only the total *number* of homes in the development but also the relationships *between* homes and *between* households. By this they mean a spillover or relationship between private homes and incidental, semi-public destination spaces (e.g. doorsteps, access walkways, gardens or even bin stores), as well as *demographic* similarities, typically around educational background or housing pathway (Section 10.3.3). These characteristics create a socio-spatial infrastructure where "clutter is a good word" (C2.2, 21:54) and from which *informal non-meetings* and *local cultures* are more likely to arise. From a capabilities and co-management point of view, the value of these relationships

is that they make it easier for neighbours to preview and build consensus around ideas for ways to adjust the shared housing environment, before going on to propose them to the whole community (Section 10.3.3). Such value was revealed when these demographic and architectural opportunities were withdrawn during the Covid-19 lockdowns, leading to disputes and misunderstandings (Section 10.3.3).

In contrast, Pocket Living appears to prioritise the first cohort of buyers and the day-one social experience in their design brief. This is because the developer's priority is to create opportunities for kickstarting the community using social infrastructure such as a shared garden, launch events and a sociable entrance sequence (Section 10.1.4.3). It is far harder, however, to deliver social value through informal spaces such as little *eddies* in the circulation. This is despite the architect's assertion (and the developer's agreement) that something so modest as a wider or slightly extended deck access walkway could both enable incidental interactions between neighbours and offer some outdoor amenity in lieu of private balconies (Section 10.1.4.3). The obstruction to delivering these occurs at planning, because circulation spaces such as walkways and stairs - however generous - are not counted as valid outdoor amenity or as a way of offsetting shortfalls in private outdoor space and therefore their value during planning negotiations is nil (Section 10.2.4.3).

Nevertheless, the owners of Pocket flats see a social value in exactly these sorts of informal, incidental spaces for dipping in and out of. This is because opportunities for unplanned meetings make community members feel more connected and in turn, more likely to get involved in decision-making (Section 10.3.4.3). Indeed, from the residents' perspective, this socio-spatial infrastructure has become yet more valuable over time, because the original cohesion and engagement amongst the community has waned to the extent that residents now have to work harder to encourage new members to get involved (Section 10.3.4.3). Residents feel that one reason for this waning is that

estate agents do not make new buyers aware of the management opportunities at the point of resale, possibly because they are only accustomed to marketing the individual flats - as opposed to the scheme as a whole - and therefore may not wish to infer any additional responsibilities, even if some buyers see value in these opportunities for residents to take more control (Section 10.3.4.3). Another reason is that the Pocket flats are designed to get people onto the property ladder before moving on, creating an inevitable degree of transience (Section 10.3.4.3).

My analysis of both models produced a range of ways that users evaluate the success of their housing infrastructure. Each of these appears to reflect the important role that the shared infrastructure plays in creating opportunities for people to make adjustments that make them feel in control - and at home - in their housing environment. At Marmalade Lane, residents say they feel empowered if they can remember everybody's names; if children can play freely together; if consensual decisions are made efficiently; if there are the skills in the community to deliver most projects; if participation feels optional; and, if they feel not only supported by neighbours but also able to provide support to others (Section 10.3.3). Similarly, at Pocket Living, residents say they evaluate success in terms of the rate of transience, meaningful connections between neighbours and the efficiency of decision-making amongst at least a large minority of residents (Section 10.3.5).

Conversely, both sets of residents expressed frustration at their inability to communicate the culture of their respective communities to incoming buyers. This is especially so because buyers on the resale market may get all of their insight and information from an estate agent who may or may not be able to communicate the collective value of a shared environment, much less the community's co-management structure and the lived experience thereof (Sections 10.3.1.3 & 10.3.4). This is exacerbated by estate agents' apparent lack of marketing materials, as described by the agent at Marmalade Lane who said

they need better ways of convincing consumers who still see modes of collective housing as akin to a commune (Section 10.1.1).

In summary, a mixture of incidental outdoor and circulation spaces, as well as some similarities in educational or housing pathway, creates an informal arena for pre-meetings and mediated decision-making between neighbours. In this way, people's capabilities are expanded over time because the semi-private infrastructure provides an empowering foundation from which they can *continuously* adjust their living environment. The findings show that the strength of this foundation may be evaluated in terms of people's ability to remember names, their sense of being able to both give and receive support, the efficiency of decision-making and the ease with which they can opt in as well as out of participation in collective activities.

11.3.4. Synthesis of findings relating to adjustable infrastructure

Section 11.3 describes an infrastructure composed of voting rights, incidental spaces and demographic similarities, that makes it easier for people to adjust their shared housing environment over time and expand their capabilities through use. The findings show that when these three characteristics are in place, the right to make decisions becomes an *excuse* to meet, a shared space becomes something to *bind* around, and informal or circulatory spaces represent opportunities for *informal non-meetings* between people who have something in common. However, these three ways of evaluating non-private spaces differ from the value judgments made by the supply-side stakeholders who designed the shared housing environments in the first place. For example, both developers evaluate the shared environment in terms of a sociable experience or lifestyle, rather than as an opportunity for people to expand their capabilities by adjusting and taking control. Likewise, during a negotiated approvals process, planners count *formal* shared space in lieu of private balconies, rather than the *informal* circulation spaces that people say they

actually use, value and informally meet in. Even the values-based decision-making process at Marmalade Lane placed undue weight on large and expensive shared spaces because the opportunity to co-design the brief drove an eco-living agenda in which space sharing became conflated with the idea of a sustainable, sharing economy.

Yet, these differences between supply-side and demand-side perspectives were not inevitable. This is because a *briefing review process* - in place of co-design or custom-build - would have been just as valuable to most residents. It would also have been more inclusive of price constrained buyers whose considerable housing insights might have helped to direct value judgments towards those aspects of homeownership that help to expand people's capabilities relative to renting. Indeed, both groups of residents say that the right to adjust the housing environment through co-design or custom-build was less important than the right to make decisions during use. On this basis, a resident-led evaluation of a successful housing environment would be one where people can remember every neighbour's name, where children from different households play without supervision, where older people and parents feel empowered to both give and receive support, and within which all members feel as comfortable opting out of any collective activities as they do opting in. These findings point towards a less radical and more marketable 'adjustable housing' product where fixed and off-putting labels such as cohousing are replaced with an idea of *"properties with great shared facilities"* and *purposeful* outdoor spaces*.* A tabulated schedule of the findings concerning *adjustable infrastructure* is at Appendix D, arranged by RIBA Work Stage.

Conclusions

To conclude this synthesis chapter, my findings suggest that adjustable housing relies on environments that maximise people's capabilities over the longer-term. This is more achievable when the design priority is to create the circumstances for collective decision-making between equity-owning neighbours. To do this, it appears that residents need to have educational similarities, some influence over resales, shared spaces that give them both opportunities and reasons to meet, ways of varying the housing density and potentially the option of pooling some equity into a collective fund. They also need some equity because mixed tenure creates a two-tier community where renters are less likely to participate, leading to resentment. This is less radical than cohousing - a sociable, mixed-tenure, custom-designed solution - that I show can increase costs, risks and exclusion. It is also seen as being less complex than models that involve outside investors or housing providers.

12. Recommendations: opportunities for industry

In Chapter 12, I deliver on the research questions of this thesis by making six recommendations[69]. Being drawn from only two case study models however, these are not presented as recommendations for policy change or even for immediate implementation in practice. Rather, they are cast as *opportunities* for further research and development, and as an invitation for expert validation by practitioners, developers and other stakeholders. In Section 12.1, I describe these six opportunities as characteristics that could provide more adjustability over the longer-term. In Section 12.2, I use an overlay of the RIBA Plan of Works (RIBA, 2020) to show *when* these could be initiated during the course of a projectWork . Again, this is intended to encourage practitioners and other stakeholders to engage in the further conceptual and technical development of adjustable housing, as a signposting aid, rather than as a proposal to revise the RIBA Plan of Works itself. Nevertheless, this approach helps to show how knowledge from the fields of architecture, economics and real estate could be used to develop a framework for describing and implementing more adjustable housing (Research Question 3). To help to characterise these tentative recommendations - and to bring them to life for others to test and validate - Section 12.3 describes a scenario in which each recommendation or characteristic is applied to a hypothetical housing development.

[69] My six recommendations are drawn from the synthesis of findings in Chapter 11 (as also scheduled in Appendix E). They each refer to the schedule of eight barriers to adjustable housing, as tabulated in Appendix F.

12.1. Six recommendations for making housing more adjustable

In Section 12.1, I describe the six characteristics that could provide owners with longer-term adjustability against housing needs that can or will change over the longer-term (Research Question 1). Each recommendation highlights some ways that industry could change for adjustable housing to become more attractive to UK developers (Research Question 2). These recommendations are scheduled in the table overleaf and described in turn, Sections 12.1-12.6.

Table 5: **Pathways to adjustable housing** - listing the six adjustable housing characteristics (1-6) and six recommendations for industry change (A-F).

The three dimensions of adjustable housing	**Characteristics** that improve adjustability over the longer-term	**Industry changes** to make adjustability more attractive to build	**Purpose** (or, barriers to overcome)
ADJUSTABLE TENURE	**1. Like-minded neighbours** whose equity stake and similar education or housing pathways improve collective decision-making	(A) Private equity from investors and landowners with legacy or policy intent, who sell their stake to the resident-owned equity fund / freehold company	To avoid a two tier, renter/owner community
ADJUSTABLE DWELLINGS	**2. Briefing review process** to bring housing experiences and value judgements to bear	(B) A consultative forum that listens and learns, rather than customising the design for the benefit of day-one buyers	To avoid a more exclusive and participatory co-design process
	3. Variable housing density where the number of dwellings is able to change over time, without affecting the external envelope or the total floor area of the development	(C) Scenarios-based planning approval for a max/min housing density (with permitted development rights and design codes)	To lower sales risks & mismatch
			To reassure planners
		(D) Technical solutions for joining/dividing dwellings (legal and architectural)	To overcome regulatory, layout and void risk problems
		(E) Space standards update to allow incremental variation in dwelling sizes (especially at the smaller end) and account for the social value of non-private spaces	To avoid minor planning applications for each adjustment
ADJUSTABLE INFRA.	**4. Excuses to meet** or bind around (i.e. formal spaces, rights, amenities or services)		To prioritise purposeful shared spaces over costly social spaces
	5. Opportunities for non-meetings (i.e. incidental spaces)		
	6. Continuity of intent from one occupier to the next	(F) Marketing material that promotes multi-dwelling living as a lifestyle preference	To develop the market for more adjustable and collective housing

12.1.1. Recommendation 1: Like-minded neighbours

Of the eight barriers to adjustable housing, *single tenure private sale* (i.e. traditional owner occupation) emerges as a central problem in a co-managed setting. This is because developing for owner occupation is not only risky and more expensive for a developer (see Section 11.1.1), but means that when some owners decide to sublet, decision-making breaks down into a two-tier community (see Section 11.1.3). To avoid these problems, it appears important for neighbours to be in some way like-minded. This is because similar housing pathways or educational backgrounds - combined with some equity in the scheme - ensure that there is a similar level of engagement between households, leading to more efficient decision-making (see Sections 11.1.3 & 11.3.3). In other words, cultural capital appears to be more important than economic capital when it comes to allowing users to shape management and design decisions in co-managed, multi-owner housing.

For developers, this finding means that despite the benefits of involving low cost development finance (e.g. from institutional buy-to-let investors or even from affordable housing providers), such money cannot come from investors seeking a rental income (Section 8.1.2). This is because owners do not want to be answerable to a third party owner, investor, landowner or provider, and do not want the management burden of 'carrying' disengaged tenants (see Section 11.1.4). Instead, developers of adjustable, co-managed housing should source funding from a combination of private equity investors and landowners with a legacy intent (or policy goal), whose investment objectives can be achieved by the time a new housing development is handed over (see Section 11.1.2). One way of achieving this is by allowing residents to pool any surplus capital into a *collectively-owned equity fund,* so that a share of the homes are available for part-ownership (see Section 11.1.4). For such a fund to provide an adjustable tenure, residents say that part-owners need to be given the option of

'staircasing' their equity share towards full ownership (see Section 8.3.2.1). This is as opposed to being fully rented - something which appears incompatible with co-managed, multi-owner housing.

12.1.2. Recommendation 2: Briefing review process

Of the eight barriers to adjustable housing that I have identified, four affect dwelling design. The first of these barriers is *co-design* itself, being a participatory process and central pillar of cohousing which the findings show was not widely valued by residents. This was the case because co-design is seen as being exclusive to those with time, relative wealth and experience as homeowners, with the effect that an unrepresentative group was able to control the housing mix in ways that increased the developer's sales risks (see Section 11.3.1). Indeed, the values-based decision-making process followed at Marmalade Lane appears to have excluded some groups and increased costs,risks and long term liabilities, as illustrated below:

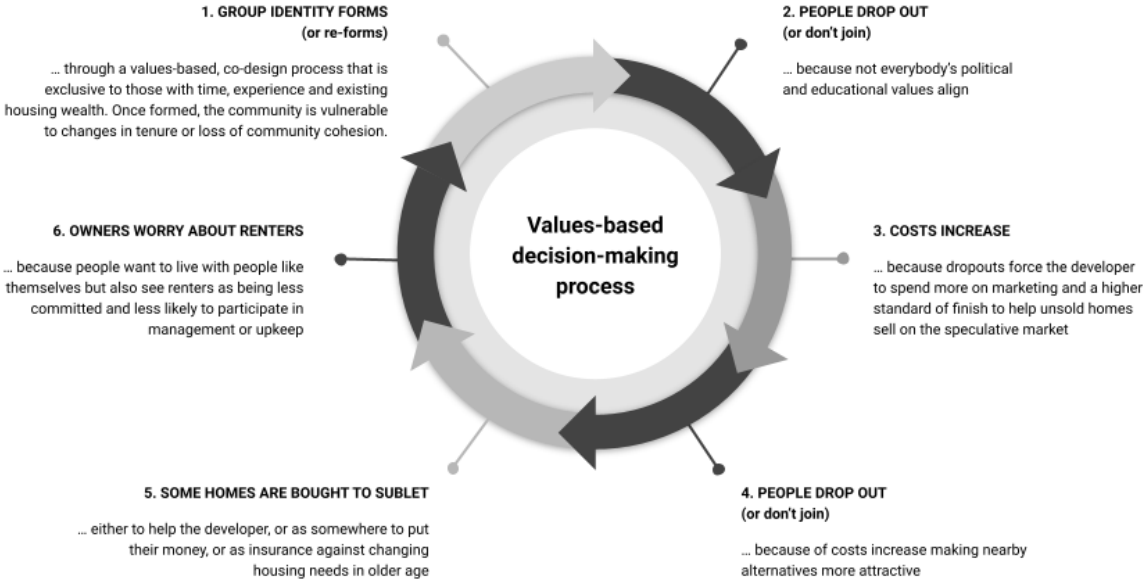


Figure 19: *An illustration of the values-based decision-making process at Marmalade Lane. This shows the effect of participatory design on sales risks, costs, tenure and inclusion (author).*

A second barrier affecting dwelling design comes from the combination of space standards and local housing targets because a fixed housing mix can create costly mismatch problems for a developer (as at Marmalade Lane) and will inevitably exclude certain groups, whilst also making it harder for owners of small flats to afford to trade-up within the same scheme (see Sections 11.1.1 & 11.2). A third barrier affecting dwelling design is a *loss of agency*, as will arise when the freehold is sold to a third party (as Pocket Living) or when permitted development rights are withheld by the approving authority (as Marmalade Lane) (see Section 11.2.1 & 11.2.2). The fourth barrier is *individually extendable homes* (e.g. unfinished loft conversions), because these can be adjusted only once and for the benefit of the day-one owner, enlarging each dwelling one converted attic at a time, making a scheme bigger in aggregate and therefore less affordable and less inclusive (see Section 11.2.1).

To overcome these four obstacles to adjustability, a consultative (rather than participative) *briefing review process* - for example, with some potential buyers alongside a representative cohort of current Pocket owners - could give confidence to designers and developers during design development, without favouring participants over later joiners (see Section 11.3.1). Such a feedback loop between producers and potential customers (e.g. those on a waiting list) would also be proportionate to the low level of interest in co-design that is evidenced by the (albeit, limited) fieldwork undertaken in this project. It would also acknowledge that people moving from shared or rented housing want the opportunity to improve the design by sharing insights from their experiences (see also Section 7.1.3). This level of involvement is more consultative than participatory and therefore distinct from the level of engagement that is assumed to deliver value in custombuild or cohousing development models.

12.1.3. Recommendation 3: Variable housing density

The third characteristic that could make dwellings more adjustable is *a variable housing density.* This would mean that within certain bounds, the total number of individual units could vary without affecting either the external envelope or the total floor area of a development (see Section 11.2.3). As suggested by the planner at Marmalade Lane - and supported by residents and especially Pocket Living owners - such an approach could make developers less reliant on design codes and one-way loft or garage conversions for adjustability, whilst helping them to manage the risk of mismatch by changing the housing mix during design and even during construction (see Section 11.2.1).

The findings suggest that for a variable housing density like this to become attractive for UK developers, three changes would need to take place in the industry. The first is a shift in planning legislation to create a *scenarios-led approvals* process. This is where a maximum and minimum number of dwellings are approved, instead of fixing the scheme around local housing needs that planners know to be wrong (see Section 11.2.3). Flowing from this, a second recommendation is to develop technical guidance for *joinable/divisible dwellings* (or parts thereof), to overcome architectural, legal and void risk obstacles raised by Pocket Living (see Section 11.2.3). Lastly, to reward developers for delivering small but valuable enhancements to accommodate more living and working scenarios, my findings show that *incremental space standards* are needed for homes at the smaller end of the market. For example, Pocket's 2-bed/2-person sharer model (see Section 11.2.2) - and even an extra 6m2 box room (see Section 3.2.5) - are not recognised by planning rules, despite research which shows that nominal increases in floor area can make a big difference to the adjustability of a small flat adjustable in ways that support a diversity of work, storage, family and care scenarios (as Holliss, 2021, pp. 374–5). My contribution to this literature, however, is to show that contrary to recommendations by Park and others (e.g. Park, 2017; Holliss and Barac, 2021, p. 35), yet more stringent

space standards are no guarantee of enhanced capabilities.

12.1.4. Recommendation 4: Excuses to meet

Shifting scales to the wider housing environment, a barrier to an adjustable infrastructure is the inclusion of shared spaces that have only social uses. This is because these bring costs and liabilities and are therefore based on the assumption that buyers will accept less private living space in exchange for a more collective or communitarian lifestyle (see Section 11.3.2). To avoid some of these problems, my findings show that a better approach - one that prioritises collective decision-making over the social experience - is to ensure that the shared housing environment includes *"something to bind around".* This may be a shared amenity, duty or space, so long as it is enough to give people an excuse to meet (see Section 11.3.3, quoting C2.4, 17:44). To deliver these outcomes, Marmalade Lane shows that any shared spaces need to be convertible by resident consensus, in anticipation of a spillover of needs from private homes, such as those changes that arose from the Covid-19 pandemic or which are emerging as the needs of teenagers and more elderly residents begin to materialise (see Section 11.3.2).

12.1.5. Recommendation 5: Opportunities for informal non-meetings

Related to a collective decision-making environment and the need for excuses to meet (Recommendation 4), the fifth recommendation to emerge from my research is for the shared housing infrastructure to create *opportunities for "informal non-meetings"* (see Section 11.3.3, quoting C2.4, 16:27). This is so that developers are incentivised to provide schemes that create an arena for decision-making in which neighbours are more likely to meet each other on neutral ground and informally agreeing or previewing ways of adjusting the rules or spaces in ways that might expand their capabilities. In practical terms,

such spaces include “little eddies” in the circulation, shared access decks, a traffic free street or mews, open stairs, defensible doorstep spaces and even local placemaking around thoughtfully-positioned refuse spaces. To realise such an informal shared environment, Pocket Living recommends that space standards guidance be updated to recognise the social value of shared circulation. My findings also show that the scale of development is key, as may be evaluated by people’s ability to remember names or to feel empowered to both offer and ask for support, whether as a young parent or as an older or infirm resident.

12.1.6. Recommendation 6: Continuity of intent

The last of my six recommendations from the fieldwork is to ensure continuity of co-management intent from one owner to the next. This is needed because the UK’s market for more collective ways of living appears underdeveloped and relies on estate agents having the knowledge and marketing material they need to “educate” buyers on the differences between co-managed housing and what many see as a commune (see Section 11.3.2, quoting P2.3, 36:18). My findings show that such *continuity of intent* is needed because the original social, economic or environmental value of a scheme that agents promote during the initial sale process, can easily wane as homes change hands over time. This can cause a cohesive community to collapse into a group of individual properties (see Sections 11.3.2 & 11.3.3). Ways of avoiding such outcomes include: maintaining relations with a retained resale agent (e.g. Pocket’s resale service); involving the resident community in promotion material or processes (e.g. at Marmalade Lane); some visible expression of community values (e.g. space for doorstep ‘clutter’ at Marmalade Lane); and, a familiar, relatable marketing message (e.g. “properties with great shared spaces”), instead of promotional terms that infer more communal living, as may be off-putting to some groups (see Section 11.3.2, quoting C2.4, 33:50).

12.2. A Plan of Work for implementing adjustable housing

In summary, in Section 12.1 I have laid out the six tentative characteristics that my research has shown could provide owners with more adjustable housing over the longer-term (Research Question 1). This section also summarised the six ways in which the industry could change, to make adjustable housing more attractive to UK developers (Research Question 2). These include: (i) the involvement of private equity to avoid a two-tier, owner/renter community (i.e. investors and landowners with a legacy or policy intent who then sell to a resident-owned equity fund upon completion); (ii) a consultative (rather than participatory) design forum to minimise sales risk and the exclusion of people who cannot afford the time or cost of co-design; (iii) a scenarios-based approval process, so that planners have the reassurance of a maximum and minimum housing density; (iv) *technical solutions* for joining/dividing dwellings to minimise the risk of mismatch or obsolescence over time; (v) an update to space standards so that dwellings sizes are more granular at the lower end and which incentivise socially valuable circulation design; and, (vi) marketing material to develop a customer and investor base for adjustable and co-managed living, so that a co-managed scheme is less likely to collapse into individual homes. The findings suggest that if the industry were to change in these six ways, people at the edges of the owner occupied sector might become more able to access housing that gives them the freedom to do and feel all that they have reason to value.

The aim of this research, however, is not only to define adjustable housing but to show how the knowledge from the fields of architecture, economics and real estate can be combined to develop a framework for describing and implementing a more adjustable housing system at an intermediate scale of development (Research Question 3). To do this, I have overlaid my six characteristics of adjustable housing (green) onto the RIBA Plan of Work (RIBA, 2020). My *Plan of Work for Adjustable housing* (Table 6a: *Tenure*; Table 6b:

Dwellings; and Table 6c: *Infrastructure*) includes my six recommendations for industry (yellow), and the barriers that need to be overcome (pink). This is so that practitioners and other stakeholders can see how but also *when* their praxis could change to make the resulting housing more adjustable.

My hope is that by using this tool, architects, developers and planners might affect some systems change. More than this, however, I hope to encourage further research and in so doing, invite other experts to test, modify, discard or validate my recommendations - possibly into a single table or manual. Such a manual - even a *handbook of adjustable housing* - could improve absorption into industry and practice, so that the ideas might be operationalised in ways that could have societal benefits. Expert validation will be key to this, to minimise the risk that adjustable housing - like cohousing - becomes another loophole that volume housebuilders could exploit. For example, my recommendation for shared walkways as an infrastructure for co-management, could be misused to justify reductions to private outdoor space. Thus, the three tables that follow do not propose to revise the RIBA Plan of Works itself, but represent an invitation for practitioners and other experts to engage at the right time, and in ways that could improve the adjustability of new housing over the longer term.

Tables 6a - 6c: *A plan of work for adjustable housing*
- adapted from the RIBA Plan of Work (RIBA, 2020)

Table 6a. A PLAN OF WORK FOR ADJUSTABLE **TENURE**

	Stages 0-1	**Stages 2-3**	**Stages 4-5**	**Stages 6-7**
	Briefing & Legislation	Concept & Planning	Constructing & Selling	Using & Reselling
Stage outcomes	**Lower risks by attracting low cost finance** So that the developer has the budget and security they need to innovate		**Establish a like-minded community** (Characteristic 1) with similar educational or housing pathways and some equity	
Landowner	**Involve landowners with legacy or policy intent** (Industry change A) defer land receipt until completion			
Developer	**Diversify tenure** away from risky single tenure private sale but without separating communities into binary renter/ owner tiers	**Involve private equity investors with social or environmental goals** (Industry change A) investor slightly removed from decision-making		
Consumers	**Participate in briefing review process** (Characteristic 2)		**Buy equity through a resident-owned collective fund** (Industry change A) to ensure ⅔ of homes are pre-sold when construction starts and to provide a community-owned shared-ownership option for later joiners	

Table 6b. A PLAN OF WORK FOR ADJUSTABLE **DWELLINGS**

	Stages 0-1	**Stages 2-3**	**Stages 4-5**	**Stages 6-7**
	Briefing & Legislation	Concept & Planning	Constructing & Selling	Using & Reselling
Stage outcomes	**Delimit a variable housing density** (Characteristic 3) according to agreed maximum and minimum dwelling numbers	**Reassure planners** against applying top- down design rules to protect their authority	**Lower sales risk** by adjusting the housing density to match demand	**Vary the housing density** (Characteristic 3) during use
Planner / regulator	**Update space standards** (Industry change E) to accommodate more scenarios at the lower end of the space scale	**Approve a scenarios-based proposal** (Industry change C) with an agreed max/min population		
Developer	**Enable a consultative briefing review forum** (Industry change B) to adjust the brief around changing housing aspirations and to gain insight from consumers' diverse housing experiences (especially of those leaving rented tenure)			
Consumers	**Participate in a briefing review process** (Characteristic 2) to bring multiple housing experiences and changing housing aspirations to bear			**Join / divide units** (Characteristic 3) to meet changing needs
Architect		**Design technical solutions for joining / dividing homes** (Industry change D) to overcome issues of layout, fabric, regulation, legal ownership and void risks		

Table 6c. A PLAN OF WORK FOR ADJUSTABLE **INFRASTRUCTURE**

	Stages 0-1	**Stages 2-3**	**Stages 4-5**	**Stages 6-7**
	Briefing & Legislation	Concept & Planning	Constructing & Selling	Using & Reselling
Stage outcomes	**Prioritise purposeful shared spaces** Rather than costly *social* spaces		**Lower sales risks** By promoting presales	**Ensure continuity of intent** (Characteristic 6) passed from one occupier to the next
Planner	**Update space standards** (Industry change E) to account for the design value of non-private spaces			
Developer	**Give people excuses to meet** (Characteristic 4) by creating a brief for at least one formal element that people can bind around (e.g. a shared right, space or amenity)			
Architect		**Design for informal non-meetings** (Characteristic 5) by configuration of incidental shared spaces		
Estate agent / sales			**Reshape the marketing message** (Industry change F) to increase customer awareness and investment understanding around adjustable and co-managed housing as a non-radical lifestyle choice with precedent	

12.3. Adjustable housing: A scenario for the future

To capture the findings from this thesis, it is helpful to take a visit to a hypothetical adjustable housing development, as seen through the stages of its evolution. With reference to Table 5 (above), this imagined scenario begins as a conversation with a landowner who has some legacy intent or policy goal (Industry change A) and who is persuaded by evidence (perhaps in the English Housing Survey data) which shows that marginal home buyers need ways of adapting to change without moving house. The landowner is motivated to defer receipt of the land payment for proposals that address this problem. This means that the first round of the tender process is concerned only for the social value of the design proposals, as evaluated using scoring criteria designed to reward characteristics that enhance adjustability over time. The winning tenders are from developers whose architects are able to prove that their proposals create an environment for informal decision-making and real choice over time, backed up by post-occupancy evaluation data from research into similar schemes.

The second round of the tender process includes financial offers. This favours developers who can attract private equity investors who are prepared to accept a lower return for a scheme that is less exposed to sales risk (Industry change A). The winning scheme's investor not only discounts for the deferred land payment arrangement but accepts a lower return on their investment because of the lower sales risk of the design. This reflects the developer's ability to vary the housing density using joinable/divisible flats (Characteristic 3), so that within certain bounds, the scheme can respond to changes in demand or market conditions that may only be apparent during construction or even as late as during sales and marketing. The value of this opportunity is emphasised at a pre-planning meeting, during which the planner agreed to a scenarios-led approval process (Industry change C) where the day-one housing density can be entirely made up of 1-bed, 1-person flats but can become half as dense if each

of these flats merges with the flat next door. In reality, the expectation is that some will stay as 1-beds but others may merge as many as three separate units into one, to make a 4-bed family-sized flat - subject to the development of technical and legal solutions (Industry change D).

The planning approval breaks new ground by accepting that in certain configurations, some flats will sit between space standards minimums, whilst outdoor circulation spaces - being designed as shared balconies - can, for the first time, be counted in lieu of private balconies (Industry change E). This is substantiated by the developer's briefing review process which consults people on the developer's waiting list, as well as using post-occupancy evaluation to gather the views of residents from another scheme by the same developer, architect or investor (Characteristic 2). The evidence also helps the planner to set aside their own housing targets which they anyway know would be out-of-date by the time the scheme is built. Instead, by means of a consultative forum for consumer engagement (Industry change 2), all parties gain a new insight to the needs of first-time buyers and their experiences of rented and shared housing. This reveals a surprising willingness amongst all groups to exchange private space for shared space, but shows there is little demand for more radical, communitarian ways of living such as regularly dining together.

Before construction starts, some pre-sales take place. This is one of the conditions of the private equity investor's risk requirements (Industry change A). However, these pre-buyers have no power to steer the brief, being offered instead a limited choice of finishes and layouts - something that all parties know will make it emotionally harder for them to walk away from the pre-sale agreement but which does not create the risk of developing custom homes for people who might ultimately walk away. As the scheme begins to sell, the structure of local housing demand begins to reveal itself. More flats are joined together to form merged units (Characteristic 3) because of higher demand from flat shares and downsizers than was expected. Those people who ask to

buy two flats with a view to subletting one or holding it as insurance against care needs in older age are, instead, invited to pool their surplus capital into a collective fund (Industry change A). This is used to provide some people with a shared ownership stake in their flat and helps to minimise the risk of creating a two-tier renter/owner community (Characteristic 1).

By the point of completion, the sales revenue plus the collective fund are used to buy out the private equity funder, pay the landowner their deferred land receipt and allow the developer to take their profit. The beneficiaries of equity loans from the collective, resident-owned fund are typically people who could have afforded the monthly repayments but did not have enough deposit. Others, however, had the necessary funds but were too worried about job security to overcommit. Instead, they have the option to part-rent, part-own a larger home but without complicating the co-management of the scheme by involving an outside or institutional shared ownership provider. Some of this pooled capital is also used to convert a flat into a guest flat and to ring fence some space for a shared utility room - two things that the briefing review process showed was needed, with costs to be recovered through service charges.

One benefit of these shared amenities - and of course, the shared garden - is that they have given residents something to meet about (Characteristic 4). Meanwhile, due to the generous shared balconies, the small scale of the scheme and space for doorstep clutter, there are daily opportunities for informal non-meetings and people find they are able to remember most neighbours' names (Characteristic 5). These characteristics make it easier to agree ways of adjusting these spaces to support changing needs. Today, the shared utility room is used as a co-workspace as a spillover for parents from flats with teenage children. Meanwhile, the guest flat is now discounted for a carer for two elderly members who prefer to receive care at home.

Over time, some of the flats have merged, others have divided and two households have swapped homes when one set of needs expanded and the other shrank. Most of the part-owners have adjusted their equity stake up to full mortgaged ownership, but one owner lost their job and their equity share adjusted the other way. Nobody has left the scheme because of a change of income or housing needs but when people move for other reasons, the estate agent has reliably found similarly motivated replacements (Characteristic 6). This is because new marketing material and post-occupancy evidence has bolstered demand for adjustable and co-managed housing (Industry change F). Indeed, new joiners of all ages are attracted by the opportunity to live together but separately, in a co-managed environment with commonhold tenure and opportunities to invest in the collective shared ownership fund.

Conclusion on the recommendations

In summary, I have made six recommendations for characteristics that could - subject to expert validation - make multiuser housing more adjustable over the longer-term.Alongside, I have identified six ways that the industry could change to make these characteristics achievable. By overlaying these onto the *RIBA Plan of Works*, I have shown the overlapping relationships that need to be fostered if the three dimensions of adjustable housing are to be realised. These relationships include an overlapping of landowner, consumers and developer (and their investors) to deliver an *adjustable tenure*; a dialogue between planners, developer and architect to deliver *adjustable dwellings*; and, a collaboration between developer, architect and estate agent to produce an *adjustable infrastructure* or shared housing environment. The hypothetical scenario that I have sketched out, shows the potential impact that these closer collaborations could have on the design and lived experience of an adjustable housing scheme. This is especially for people at the fringes of homeownership, whose capabilities would otherwise be limited by affordability and associated limitations on their effective demand in the UK's mainstream housing market.

Conclusion

During our interview, the planner at Marmalade Lane reflected that “you need to approach [the problem] from different angles: the market angle, the planning angle, the mortgage angle, you know, all of these things. If you solve each one of these issues, then you probably have a proposition that might gain credibility and momentum” (S2.2, 20:21). This logic perhaps captures my approach to this thesis as a way of connecting architectural, economic and real estate theory to address apparently intractable social and economic problems that have risen up the political agenda since the 2008 Global Financial Crisis. These are distributional problems that are most acute for households at the fringes of the owner occupied sector, particularly in denser areas.

The literature I reviewed in Part I (Chapters 1-5) showed that whilst economists, architects and real estate practitioners recognise the need to improve the long-term adjustability of the UK’s housing stock, none has produced a single unifying idea for doing so. Further, policymakers have continued to defer to economists for all the answers, with an unrealistic emphasis towards supply-side solutions. As a result, their disparate theories have tended to overlook the political, economic or cultural realities of the UK housing market. In response, my three research questions have been: (1) to identify the characteristics that could provide owners with longer-term adjustability against changing housing needs; (2) to recommend ways of changing the industry to make adjustable housing more attractive to UK developers; and (3) to show that knowledge from the fields of architecture, economics and real estate can be combined to produce a framework for describing and implementing a more ‘adjustable housing’ system at an intermediate scale of development.

In Part II of my thesis, I introduced the fieldwork as a qualitative investigation into two case study models, from a capabilities perspective (Chapters 6 and 7). Thereafter, in Chapters 8-10, I laid out my findings from the stakeholder

interviews, as organised around my three dimensional model of adjustable housing. Thus, in Chapter 8 (Adjustable *tenure*), I identified problems of buyer commitment in a co-design process and the challenges of accommodating demographic differences in a co-managed scheme. In Chapter 9 (Adjustable *dwellings*), I showed that when dwellings can be adjusted incrementally and in ways that buyers can see and understand, there are sales, planning, use and risk management benefits for all stakeholders. Finally, in Chapter 10 (Adjustable *infrastructure*), I showed that for a housing environment to be adjustable through collective decision-making by resident owners rather than third party freeholders or building managers, the shared infrastructure needs to include a bundle of rights, rules, shared spaces and some demographic similarities between neighbours.

In Part III *(Synthesis and opportunities),* I drew together the themes of tenure, dwelling and infrastructure to identify six characteristics[70] that could provide owners with longer-term adjustability against housing needs that can or will change over the longer-term (Research Question 1). These were: (1) a like-minded demographic for the purposes of co-management; (2) a briefing review process instead of co-design and customisation; (3) a variable housing density for managing sales risks and change; (4 & 5) shared spaces that create both excuses to meet and informal opportunities for pre-meetings; and, (6) continuity of intent between the original and subsequent owners.

To show what changes might be needed to make these characteristics more attractive to UK developers, I also made six recommendations for industry change[71] (Research Question 2). These were: (A) to avoid the complexity of third party private equity involvement beyond the point of sale; (B) to consult (but not involve) users during design briefing; (C) to adopt a scenarios-based approach to planning approvals that allows dwelling numbers and sizes to vary over time between agreed maximums and minimums; (D) to develop technical, legal and

[70] See Table 5 - quoted numbers correlate with list of characteristics (column 1).
[71] See Table 5 - quoted letters correlate with list of recommendations (column 2).

tenure solutions for joining and dividing homes; (E) to update space standards in ways that recognise the social value of both non-private spaces and of allowing incremental variations in dwelling sizes; and lastly, (F) for more collaboration between architects and real estate professionals in the promotion of adjustable and co-managed housing. I concluded Part III by using an adaptation of the *RIBA Plan of Work (RIBA, 2020)* to show how, when and by whom these six characteristics and recommendations might be delivered[72].

Using this framework for describing and implementing a more adjustable housing system at an intermediate scale of development, I have attempted to show how knowledge from the fields of architecture, economics and real estate can be combined into a tentative, middle-range theory (Research Question 3). In making this contribution to knowledge and policy, however, there are clear limitations to what can reasonably be claimed, pointing to a need for further research and expert validation. I therefore conclude this thesis by reflecting on the involvement of others, before drawing some final conclusions.

Limitations

Despite being based on a wide range of literature, my attempt at a middle-range theory for adjustable housing is limited because the sample is restricted to only two case study models. Further, the process of analysing the data and generating tentative theories did not leave time to test my recommendations through a second round of interviews with residents at other schemes, as I had intended. A further limitation is in the relative lack of a deep engagement with the literature of capabilities approach and its relationship with housing. This is because it is a subject and methodology area that is only now being explored by

[72] See Tables 6a-c.

other housing researchers[73]. Lastly, and despite my best efforts, the research is likely to be biased towards architectural practice and spatial matters. This is perhaps inevitable, given my positionality as an architect looking outwards towards other fields, rather than as a triple-hatted professional with command of all three of my chosen fields. Given these various limitations, it must be emphasised that there is now a need for validations by experts in other fields, as well as the further research and development, described below.

Contributions to knowledge

In this thesis, I have sought to show how housing practice might evaluate outcomes on the basis of people's capabilities and opportunities, rather than relying on ad hoc theories from separate fields. Through the thematic analysis of my data, I have produced a new framework for adjustable housing - perhaps the key, original contribution to knowledge of this thesis. This framework goes beyond the single dwelling and its spatial design - normally the primary concern of architects. Rather, it broadens the scope of adjustability in housing to recognise the importance of legal tenure and shared infrastructure. In terms of methodology, my hope is that this three-dimensional view of adjustability in housing has made a small contribution to evolving scholarship on the application of a capabilities approach to housing theory and practice. The relevance of this contribution is to have offered an interdisciplinary definition of what capabilities might mean for people on the fringes of owner occupation. In trialling this approach, my overall contributions to knowledge can be related to each of my three research questions, as summarised below.

[73] For example Jean Christophe Dissart and Leonardo Ricaurte with the *RE-DWELL* research programme - a holistic, transdisciplinary framework aiming to "reveal the links between social, economic and environmental factors in the provision of affordable and sustainable housing" (see https://www.re-dwell.eu/research).

My first set of contributions to knowledge relate to the characteristics that could provide owners with longer-term adjustability against changing housing needs (Research Question 1). I have shown (1) that co-managed housing is necessarily exclusive, because it relies on a mono-tenure community made up of people with similar educational backgrounds or housing pathways. This supports the view that cultural capital is more important than economic capital when it comes to identifying consumer groups whose changing housing aspirations could - given the opportunity - begin to reshape the characteristics of new housing supply in the UK (as Crawford and McKee, 2018, p. 193). This focus on co-management also questions the widely practised strategy of "pepper-potting" different tenures across new housing schemes (as Levitt and McCafferty, 2018, p. 275), whilst contradicting the claim that cohousing is, by definition, an inclusive approach to housing (as LaFond and Tsvetkova, 2017).

I have also shown (2) that when people are free to adjust the size of their dwelling over time, instead of having to move house, schemes that include smaller dwellings will be more suitable for co-management. This is because the resident community is likely to be made more stable when they have the opportunity to join or divide smaller apartment units (as Schneider and Till, 2007, pp. 185–189) on top of the short-term, sales-based and risk-based benefits of joinable/divisible dwellings that others have identified and which I have corroborated (as Habraken, 1972; Brand, 1995; Kendall and Teicher, 2010; Kendall, 2021). Lastly, I have shown (3) that shared spaces both justify and enable co-management, by creating excuses to meet and opportunities for informal pre-meetings. This offers a new way of evaluating non-private spaces that are complementary to established theories around 'defensible space' (as Newman, 1973; Coleman *et al.*, 1985; Lees and Warwick, 2022). It also goes beyond the utopian, cohousing idea that shared spaces are an infrastructure for a sociable or communitarian experience (as Sargisson, 2012; Tummers, 2016).

My second set of contributions to knowledge relate to the ways in which adjustable housing might be made more attractive to UK developers (Research Question 2). I have shown (1) that to succeed in a competitive land market, initial funding or deferred land payments linked to the social, economic or environmental value of adjustable housing need to come from outcomes-led investors - perhaps akin to the green mortgage market (as Jane and Sayce, 2020). I have shown (2) that there is a willingness amongst local authorities to explore the idea of a scenarios-led approvals framework at planning. This would require dialogue between planners and developers to overcome areas of mistrust and to establish shared objectives around change that do not produce fixed densities and an over-reliance on design codes. I have shown (3) that there may be a 'sweet spot' at which to involve residents in design decisions that avoids a situation where too much resident control and customisation from too early in a project produces excess risk for a developer. This does not diminish the importance of consulting on the design brief to understand the changing housing aspirations amongst recent and first time homebuyers. It suggests, however, that neither citizens' juries (Foye, 2020, pp. 11–13) nor deliberative, participatory process (Kimhur, 2020, pp. 272–3) are adequate as forums for producing a capabilities-led housing standard. This is because some degree of top-down, developer-led design is probably essential in the first instance for enabling a subsequent, bottom-up, briefing review process that involves future users. The risk, as my findings have shown, is that without this opportunity to push back against a design or brief, the opportunity can be lost forever, when freehold and management rights are passed to a third party upon completion or sales handover.

My third set of contributions to knowledge is to have developed a format for integrating knowledge from architecture, economics and real estate into a framework for describing and implementing adjustable housing (Research Question 3). In doing so, I have (1) modelled a form of transdisciplinary action that others can build on, and (2) identified some characteristics of adjustable

housing that could form the basis of a capabilities-led framework for post-occupancy evaluation. This is something which has so far been confined to theory rather than practice (as Foye, 2020; Kimhur, 2020; Harris and McKee, 2021) but now requires integration into real world situations. Lastly, I have shown (3) that if architectural theory is to engage with changing housing aspirations in UK society (Preece *et al.*, 2020), architects should work with professionals from other fields (notably economics and real estate), whose understanding of housing *demand* is shaped by what sells and what adds value over the longer-term. This is as opposed to assuming that there is an economic value in what seems 'good' or 'self-evidently sensible' from a singular, architectural point of view (Schneider and Till, 2007, p. 43; Samuel, 2018, p. 94).

Potential contributions to policy

I have attempted to blend my recommendations from this thesis into the existing political and cultural landscape. This is because such a realist approach makes it more likely that innovation in housing will be absorbed into policy (Whitehead and Williams, 2020, p. 31). In Section 1.2, I showed that this is important because whilst housing is now high on the UK's policy agenda, there is still no "big idea" beyond simply building more homes (Meen and Whitehead, 2020b, pp. 227–228).

My findings reveal four opportunities for policymakers. The first of these is to replace contentious local housing needs calculations (Clapham, 2018, chap. 5; Grimwood, 2022, pp. 43–47) with a scenarios-based planning approval that recognises a housing density that is adjustable over time, within agreed bounds (Characteristic 3, see Section 12.3). This would allow both planners and developers to be more responsive to the changing picture of housing demand, rather than increasing the developer's sales risks by tying a scheme to targets that planners know will be out-of-date by the time a scheme is built (as Section

11.2.3). The second policy opportunity is that housing designed to support co-management could help to bring commonhold tenure back into legislation (see Section 4.1.2), having previously been omitted due to the perception of complexity (Wilson and Barton, 2021a; Cromarty, 2022, p. 39). The third opportunity is to change the way that housing outcomes are evaluated, by showing how some of the problems exposed by the 2020-21 Covid-19 lockdowns (Samuel, 2020a; Preece *et al.*, 2021) could be solved by a more adjustable housing system. This could build on nascent, capabilities-linked policies that evaluate housing in terms of wellbeing and social value[74], whilst helping to dispel the industry view that non-private space is unprofitable[75] (White *et al.*, 2020, p. 20). The fourth opportunity to influence policy is by showing that adjustable dwellings could help to make more efficient use of housing space (Characteristic 3, see Section 12.3). This is on the basis that the relationships between housing densities, energy demand and carbon are now known (Pelsmakers, 2019, chaps 3 & 10) and therefore highly relevant to the UK's 2050 net zero carbon targets (BEIS, 2020) and now energy price inflation (ONS, 2022).

My findings have also shown, however, that if adjustable housing is to become a unifying design idea, ways of varying the housing density needs to be allowed for in both the National Planning Policy Framework (MHCLG, 2021) and in a more granular approach to space standards (Department for Levelling Up,

[74] Opportunities include not only the Public Services (Social Value) Act 2012 (*Public Services (Social Value) Act 2012*, 2012) but also changes in public procurement rules (HM Treasury, 2018) that recognise social, economic and environmental value, the high profile Building Safety Bill (Department for Levelling Up, Housing and Communities, 2020) and draft legislation for wellbeing in homes (*Homes (Fitness for Human Habitation) Act 2018*, 2018, *Healthy Homes Act*, 2021). That these examples were initially shaped by a voluntary initiative by the Town and Country Planning Association's *Healthy Homes Bill* (TCPA, 2020, secs 3b & 3d), shows that there are opportunities for the Royal Institutes of British Architects and Chartered Surveyors to frame something similar for adjustable housing.

[75] This is important because non-private spaces are normally excluded from the net internal floor area by which a building's 'usable' value is normally measured (RICS, 2019, p. 6), even if shared circulation, for example, could in fact be crucial as infrastructure for enabling co-management (Characteristics 4 and 5 - see Sections 12.1.4 and 12.1.5).

Housing and Communities, 2015). This could be helped by including adjustability as an evaluative criteria alongside other benchmarks in the housing data, such as overcrowding[76]. Indeed, there is already academic interest in integrating qualitative standards such as *Shelter's Living Home Standard* (Shelter, 2016) into statistical datasets, on the basis that more ethically reasonable benchmarks are needed if progress in housing is to be measured from a capabilities perspective (Clapham and Foye, 2019, p. 26).

The idea of using adjustability as an evaluative criteria in national datasets could have wider implications for valuations as well as for policy. This is because the green mortgage industry shows how new benchmarking can eventually be capitalised into house prices, once lenders discount for housing criteria which they understand and can measure (Jane and Sayce, 2020, pp. 401–2). Furthermore, efforts to soften cultural and legislative bias against the sorts of mid-rise typologies that are needed to build "gentle density" housing (Scruton *et al.*, 2020, pp. 99–101) could be made easier if more people were aware of adjustability and its value in terms of resilience. Lastly, there are policy opportunities at the macro scale, where a more efficient use of the UK's housing stock could bring cost, carbon and energy benefits. This is because reductions in energy use and smaller material throughputs are essential for the reduction of greenhouse emissions in a post-growth economy (Jackson, 2009; Goldstein, Gounaridis and Newell, 2020).

[76] Examples of evaluative benchmarking include statistical reports such as the *English Housing Survey* (English Housing Survey, 2021).

Further research

To operationalise the recommendations of this thesis, further research, development and expert validation is now needed. This is to increase awareness across the market and academia, to develop expertise in practice, to attempt some pilot projects with industry partners and, ultimately, to make the industry more responsive to changes in UK housing aspirations. The following outputs would be a start:

a. A process of expert validation of my tentative recommendations by architects, developers, planners and sales agents. This would be to test, clarify and improve the adjustability of new housing, whilst guarding against unintended consequences.

b. An investigation into the UK's residential property investment and mortgage market, to establish if and why private equity and mortgage lending might be discounted for adjustable or co-managed housing. This could include some economic evaluation of the cost to individuals and/or the state, arising from excess house moves or from living in a hard-to-adjust home through episodic changes in housing needs.

c. Some post-occupancy evaluation of further case studies, using the criteria that I have proposed in this thesis. This could feed into a monograph or manual of adjustable housing, designed to share knowledge across the industry and to change customer attitudes to adjustable or co-managed housing.

d. A survey of consumer attitudes to co-managed housing and space sharing, to inform the industry as to the extent of any latent demand for such living arrangements. Such a survey could also assess changes in UK housing aspirations amongst marginal homeowners and recent homebuyers.

e. The development of a post-occupancy evaluation method for scoring the adjustability characteristics identified in this thesis. This would, for example, appraise the social value of shared circulation as an infrastructure for co-management, rather than as social or 'defensible space'.

f. The research and development of technical, tenurial and legal solutions for joining and dividing dwellings. This and other guidance could become a handbook and training resource for developers, designers, planners and community groups.

g. A contribution to the literature that summarises the findings from this thesis, whilst positioning adjustable housing on a spectrum[77]. Being shorter and more accessible than this thesis, such a journal article could help the characteristics that I have described to become more effectively incorporated into further research, design guidance and evaluative benchmarks, from a capabilities perspective.

Many of these research outputs could be achieved through some replication of my capabilities-led method of interviewing multiple stakeholders from case study schemes. For example, the post-occupancy evaluation of additional multi-dwelling developments and surveys of consumer attitudes (as Outputs (c) and (d), above) could broaden the sample, whilst testing our understanding of the three dimensions of adjustable housing. Indeed, further semi-structured interviews could generate a more complete, capabilities-led picture of that middle ground between "properties with great shared facilities" and those "with the label 'cohousing' on them" (C2.4, 33:50, see Section 10.3.1.3).

In contrast, however, the work of developing expert validation and industry insight is unlikely to require as much grounded or inductive research as has been necessary in this research. This is because my tri-part theory of adjustable

[77] Possible journals include *Buildings and Cities, Housing Studies, Urban Studies, Housing Theory and Society,Architectural Research Quarterly or the UK Collaborative Centre for Housing Evidence*.

housing offers a theoretical framework around which more deductive research could hereafter be designed. For example, research into the technical, tenurial, legal and financial aspects of delivering adjustable housing (as Outputs (b) and (f) above) could begin by testing certain hypotheses around tenure, dwelling or infrastructure through deductive process. In this regard, there is an opportunity to involve industry experts in pilot projects, during which action research could provide reflective studies, with insights into systems, cultures and opportunities for change.

In conclusion, the literature shows that the UK's relatively individualistic and profit-seeking culture (Muellbauer, 2018, p. R28) has produced an inflexible and under-utilised housing stock, to which welfare, affordability and macroeconomic consequences have been attributed (Cheshire, 2018, p. R14). The response has been to increase the supply of new homes, even where this has little or no measurable effect on affordability (Mulheirn, 2019; Meen and Whitehead, 2020b, pp. 230–232) and with little regard for changes in housing aspirations (Crawford and McKee, 2018; Preece *et al.*, 2020). Yet, as my research has shown, not enough is known about how to produce housing that is adjustable over the longer-term.

In response, I have highlighted a tentative way of directing new housing towards longer-term goals to do with capabilities and freedoms. In doing so, I hope to have signposted a framework for further research to help architectural practice move beyond the idea that housing is a numbers game, where the sole objective is to deliver more short-term homes at an 'affordable' price. I also hope to have dispelled the myth that utopian exceptions like cohousing could realistically break through to become market disruptors or cultural norms. Instead, I have shown that housing architecture and housing architects have a role to play in shaping housing policy - an arena that has so far been dominated by economists.

What excites me most, however, is the idea that my research has contributed to a debate around how to change the structure of housing *demand* in the UK. This sounds lofty but for too long, architects have focussed exclusively on the supply side of the housing problem, whilst economists and real estate experts apply their knowledge to both supply *and* demand. Now, however, we have adjustability as an interdisciplinary yardstick for evaluating housing outcomes over the longer-term. With the benefit of more post-occupancy evaluation and better marketing of an adjustable housing typology, I hope that demand for ways of living together separately could help to make the environmental and social benefits of density not only desirable but also accessible to people on the fringes of owner occupation. There is now a clear opportunity for architects to work with the real estate sector to understand what sells and what works, and to explain the value of adjustable housing in economic terms.

APPENDICES

Appendix A
The survey questions and their purposes

For a commentary on the surveys and their features, see *Section 5.2.1: Survey Design.*

Marmalade Lane: Residents' survey	
Question	**Purpose**
Q1. Did you set out to buy a home in a cohousing environment? *(likert scale)*	To establish whether cohousing (i.e. the chance to optimise, customise or socialise) was important or if it was simply a home like any other.
Q2. When did you first get involved in the Marmalade Lane project? *(multiple choice)*	To identify any participants who were not involved at all or who arrived too late to have a say in the design. This anticipates an interview discussion around why this was, how it felt and if it affected people's satisfactions or ability to adjust their home.
Q3. How old were you when you bought your current home? *(multiple choice by age bracket)*	To get an overview of the age demographic of owners and to identify later buyers, as a way of revealing both the age and extent of buyers on the resale market. This is in case the initial promotion skewed the community make-up at the outset.
Q4. How many bedrooms do you have and who else (if anybody) normally lives with you? *(state how many of each)*	To contextualise any later comments about the sufficiency of the living space with the number of occupants per bedroom (e.g. the formation of a couple or the arrival of a child).
Q5. At the time, how important was the Common House and other SHARED amenities to your decision to buy your home? *(choice of housing services and characteristics on a likert scale + 'other')*	To find out whether people's age or involvement in the design determined their *perception* of how they might use the *shared* offer and whether this divides between social and functional amenities. This fed into interview discussion about whether space sharing was perceived as having social value, economic value (as a cost saving measure) or environmental value (as a efficiency measure). Options included common house amenities, guest rooms, laundry, garden, incidental spaces, storage and social events.
Q6. How important were the following reasons for buying your PRIVATE home? *(choice of housing services and characteristics on a likert scale + 'other')*	As Q5 but testing for the perceptions of social, economic and environmental measures of value in the *private* home (e.g. adaptability, daylight and sense of space), but also non-spatial characteristics (e.g. financial security, personal security, tenure security, price, resale value, the need to move quickly, low maintenance, sustainability, and the opportunity to co-manage).

Q7. How is this working out for you as a longer-term housing arrangement? *(likert scale using 5-stars)*	To establish if and where the pressure to adjust was strongest: *Financially* (where 1-star = worrying / 5-stars = comfortable); *Spatially* (where 1-star = cramped / 5-stars = roomy); and, *Socially* (where 1-star = lonely / 5-stars = well-supported) - noting that these relate to the themes of adjustable tenure, dwellings and infrastructure.
Q8. What do you like about where you live and what might make you move? *(text box, suggesting three pros and three cons)*	To identify where the pressure to adjust by moving house might come from and, conversely, which characteristics add value that is hard to find elsewhere.
Q9. Why didn't you buy your home through a percentage-ownership / part-ownership scheme, as a way of getting more space? *(multiple choice + other)*	To understand why people did not just buy a bigger, more adjustable home using equity sharing or part-rented tenure. Options include cost, complexity, resale, awareness of alternatives and the pursuit of capital gains.
Q10. Roughly how often do you use the Common House or other shared amenities at Marmalade Lane? *(multiple choice on a likert scale + 'other')*	To establish whether the *shared* amenities add value and if the usage of these divides (e.g. between social amenities, functional amenities or no use of amenities) by age, size of house or involvement in the design. This is to test whether usage is driven by a spillover from the private home or a desire for social interaction. Options included, shared kitchen, dining room, event / social space, play room, vegetable growing, incidental doorstep areas, store room, utility or laundry room, exercise room, guest room / apartment, workshop, communal meals or desk space for home working.
Q11. If you have participated in any of the following activities, would you recommend the experience to others? *(list of ways of participating, with a likert scale)*	To test the inclination to participate in decision making (e.g. setting rules and service charges), maintenance work (e.g. leaf sweeping), the customisation (of the private dwelling only) or collective co-design (of the development as a whole).
Q12. How has your experience during lockdown affected what you look for in a home environment? *(text box)*	To catch any changes in housing needs during the Covid-19 pandemic that were either supported or inhibited by the scheme, or which changed perceptions as might affect future housing choices.

Pocket Living: Residents' survey (Marcon Place)

Question	Purpose
Q1. In what year did you buy your current home? *(multiple choice)*	To establish whether Pocket flats are a short-term solution for people or if they have become something more permanent.
Q2. How old were you when you bought it? *(multiple choice by age)*	As Q3 of ML survey (see above).
Q3. How many bedrooms do you have and who else (if anybody) normally lives with you? *(state how many of each)*	As Q4 of ML survey (see above).
Q4. How important were the following reasons for buying your current home? *(choice of housing services characteristics on a likert scale + 'other')*	As Q5 & Q6 of ML survey but combining shared and private elements into a single question, PL schemes having far fewer shared amenities.
Q5. How is this working out for you as a longer-term housing arrangement? *(likert scale using 5-stars)*	As Q7 of ML survey (see above).
Q6. What do you like about where you live and what might make you move? *(text box, suggesting three pros and three cons)*	As Q8 of ML survey (see above).
Q7. Why didn't you buy your home through a percentage-ownership / part-ownership scheme, as a way of getting more space? *(multiple choice + 'other')*	As Q9 of ML survey (see above).
Q8. Which (if any) of the following might help you to stay in your current home for the longer-term, assuming they came at no extra cost? *(multiple choice + 'other')*	As Q10 of ML survey, but in a hypothetical sense by asking what typical cohousing amenities *might* people use if they were to have access to them in the current or future home.
Q9. If you were to move to a new home in the future, would you want to participate in any of the following activities? *(list of ways of participating, with a likert scale)*	As Q11 of ML survey but in allowing for the hypothetical nature of a question about customisation and co-design for a cohort who did not have this option.

Q10. Would you still want to have a say in the design of your future home or home environment, even if the process of participation delayed your move-in date by at least a year? *(likert scale)*	To understand the importance of customisation and co-design relative to the participants' perception of how their housing needs might change (i.e. do they anticipate gradual or sudden shocks).
Q11. Would you still want any of the following amenities in a future home environment, even if obtaining them meant making some compromises on the space or quality of your own home? *(multiple choice on a likert scale)*	To gauge the relative importance of the design and financial characteristics selected in Q4, and any cohousing characteristics selected in Q9, assuming most benefits are a trade-off against private living space.
Q12. How has your experience during lockdown affected what you look for in a home environment? *(text box)*	As Q12 of ML survey.

Appendix B
The interview questions and their purposes

For a commentary on the interviews and objectives, see *Section 5.2.2: Interview Design and methods.* The examples below were the basis for the Marmalade Lane and Pocket Living resident interviews, respectively. Being semi-structured interviews, the direction of the discussions led the conversations so that in practice, some extra questions emerged.

Marmalade Lane: Resident interview questions
(sequence and emphasis varied depending on people's earlier survey responses and the direction of the conversation)

Questions	**Purpose**
1. Background What was it about your previous home that made you want to move to ML?	To test whether changes in housing need precipitated the move or directed the choice (push/pull).
2. Co-production *(intentionality & lived experience)* Thinking about the process of co-design… 2.1. Did the co-design process deliver on your own housing objectives and those of your peers? 2.2. Do the design decisions made by the original group anticipate the needs of later joiners or future residents and if so, how? 2.3. How important is the *customisation* of your home relative to the *organisation* of the development as a whole (e.g. the opportunity to choose kitchen finishes versus being part of site planning decisions)? 2.4. Would you have bought your home at ML without having been involved in the co-design process? 2.5. If there had been a cohousing 'lite' product on offer - perhaps designed with input from a small steering group of future residents that didn't include you - would this have been appealing? 2.5.1. What about if it had been designed with enough flexibility to change over time according to the changing needs and wishes of future users?	To establish the importance of co-design and optimisation in cohousing, relative to a developer-led scheme that anticipates adjustability in the design (as Lietaert, 2010, pp. 577–578; Levitt and McCafferty, 2018, p. 301; Community led homes, 2020). Also, to ask whether identity was a motivation and if so, whether the process acknowledged other types of resident or future users.
3. Demographic *(group identification)* ML seems like a pretty intergenerational development…	To gauge whether inclusion is self-selected by money, time and

3.1.	… Is that how it feels to you and is this a good thing?	housing circumstances (building on P2.2 & S2.1 interviews) and the finding that some age groups are excluded (building on S2.1 & C2.1 interviews), noting that adjustability to changing needs was noted by survey respondent C2.2.
3.2.	Which age groups or cultural, social, educational, income or employment backgrounds that are under- or over-represented at ML… ● As residents? ● As participants in the social 'scene'? ● As contributors to the work of management / maintenance? ● During the co-design process?	
3.3.	What - if any - are (or were) the barriers to participation for under-represented groups (e.g. younger or older members)?	
3.4.	Did you experience any obstacles to joining the scheme yourself, or achieving your own objectives for the place?	
3.5.	What sort of changes to the group 'feel' or 'make-up' would make you consider moving?	

4. Tenure *(ownership versus rental and part-rental)*

Not all households are able to be part of the co-design process because they can't spare the time or fund the deposit, either at all or at the same time as paying rent or a mortgage on another property.

To test the extent to which the experience of ownership and existing housing wealth may determine people's ability to buy or participate - and if so, whether the design becomes fixed around members' wealth and values, making it less adjustable to others.

Also, whether the potential affordability and risk mitigation benefits of involving a third party funder (e.g. a pension fund) would outweigh any complication to the process.

4.1.	Other than accessing savings, did you have to do or change anything to raise the deposit that enabled your participation in the design?
4.2.	Would you support the involvement of an outside funder to provide some sort of bridging loan to make cohousing more accessible to a wider demographic?
4.3.	What about if this outside funder was a long-term shared ownership partner, legacy landowner or a specialist landlord whose objectives were to provide wholly or partially-rented homes on long-term, secure tenancies? (noting that such an arrangement might allow renters to feel as permanent as owners and even partake in the design process).
4.4.	What would you need to know about any external funder and their values before you would feel comfortable in having them involved?

5. Maintenance and management *(intentionality & lived experience)*

Thinking about the work of managing and maintaining the development…

To test whether people really want to be able to adjust their housing environment (when they could pay a managing agent) and if so, why (as raised in interview P2.1).

Also, how this affects the design of space, tenure and governance.

5.1.	Are you part of the residents' management and maintenance groups?
5.2.	If so, which aspects do you participate in and [or, if not, why not]?
5.3.	Is your contribution for social reasons, to keep costs down, to have a sense of control over your home environment or for some other reason?
5.4.	Visualising the meetings…

5.4.1. How many households are too many to practically sustain a co-managed or co-maintained home environment?
5.4.2. Would it work better if you were represented by a smaller number of Directors?
5.4.3. Would you prefer to pay more for an agent to do some of the management or maintenance?
5.4.4. Would management work better if the scheme was made up of separately-managed clusters of fewer homes around separate but smaller outdoor spaces?
5.4.5. Does smooth management and maintenance depend on people having similar tenure, incomes, wealth or background… or is it enough that they're committed, long-term occupiers, regardless of whether they own or rent their home?
5.4.6. How important is the wider housing environment to the decision-making culture, or is cohesion and decision-making simply down to the rules and co-ownership??

5.5. When it comes to rented homes - especially if there were more of these in the future - who would you prefer to be making management and service charge decisions with… tenants, or their landlords?
5.6. If some residents were *shared* owners (i.e. part-renters), do you think they would be as committed as owners or renters?
5.7. Would you want other people buying a flat in the building to actively *want* to participate in the social, management and maintenance scene too - and to share the same *values* - or does this not matter?
5.8. Can you (or should you) control or communicate the need for people to participate and if so, should this message come from the group, an agent or be somehow communicated through the space itself?

6. Moving house *(push / pull factors)*
Thinking about the prospect that your housing needs could change over time…

To test the relationship between adjustability and mobility (as Hudson and Green, 2017).

6.1. Does this feel like your 'forever home' or did you make your choice of home with the ultimate intention of moving again in the medium term?
6.1.1. If so, how long did you expect to be in your current house for?

6.2. Do you think having access to shared amenities (like the ones we discussed earlier) could help you to forestall a house move?

6.3. Do you think the social or neighbourly environment would make it any harder for you to move house again?

7. Adjustability *(estate design)*

Thinking about changing housing and financial needs at different life stages - including those of people who did not join ML in the first place - what are your thoughts on the following options...

[WITH REFERENCE TO SLIDES - SEE SECTION 5.2.2]

7.1. A scheme with a greater mix of sizes - especially at the lower end - so that people could buy small and trade-up / down-size without leaving the development?

7.2. A shared ownership arrangement with a long-term financial partner so that a wider range of households could buy the home they need at the outset, but adjust their financial exposure up or down, depending on their needs and life stage?

7.3. A scheme made up of small, 1-bed flats that could be easily joined or separated over time, such that a household could expand or contract by dividing or joining the units they occupy.

7.4. A more extreme version of cohousing where homes are smaller but supported by more shared, *practical* amenities (e.g. guest room, storage, laundry, workshop, etc), such that shared amenities were actually *relied* upon by the majority of households to support their day-to-day activities. This might produce cheaper homes but a higher service charge.

To establish the importance and practicality of adjustable dwellings vs adjustable tenure or conventional adjustment through house moves.

Also, testing findings from the survey which showed that residents are less worried about investment risk than they are in just accessing home ownership at all costs.

8. Reasons for sharing *(adaptability / lived experience)*

The survey responses suggest there is less interest in sharing meals than in creating a culture of sharing in which it becomes easier to borrow things and to access everyday practicalities in a passive, friendly environment.

8.1. Do you recognise this description?

8.2. Is sharing important to you for social, neighbourly or practical reasons... or is it something else?

8.3. If you regularly use the practical amenities at ML like the laundry or workshop, why is this?

8.4. Would a scheme without a common house still be cohousing? For example, a scheme with shared outdoor spaces as well as practical amenities like guest rooms, laundry & workshops but <u>without</u> the lounge and kitchen.

8.5. Is there an optimum number of households with whom you are or would be most comfortable sharing *indoor* spaces or amenities with?

- What about *outdoor* spaces and amenities?

To gauge whether the ability to adjust the home or home environment affects people's motivation to live together separately.

Also, to test where people's demand for sharing amenities sits on a spectrum from *co-using* (i.e. renting access to shared goods and services), to *partaking* (i.e. adding opportunities for exchange and belonging), to *participating* (i.e. taking action through use,

	● What about if there were demographic differences between households? 8.6. Can members of the general public access the shared garden or street or is this somehow restricted?	appropriation, negotiation) (as Schmid *et al.*, 2019, pp. 21–22).
9.	**The value of 'home'** *(social, environmental or economic value)* 1.1. Aside from the basics (like sleeping, eating, etc), what should a home allow you to *do, be* and *feel*? 1.2. What, if anything, is missing from your current home that might give you the freedom you need to do, be or feel these things?	Gauging the value of home, as evaluated using a *capabilities* approach (as Sen, 1995, p. 5; Nussbaum, 2003, pp. 41–42, 2011, p. x; Clapham and Foye, 2019, pp. 16–25; Foye, 2020, pp. 9–10; Kimhur, 2020, pp. 271–272).
10.	**Wrapping up** Is there anything I've not asked that you wish I had or that's on your mind?	To create an opportunity for an open discussion in case the interview awakened tangential thoughts.

Pocket Living: Resident interview questions
(sequence and emphasis varied depending on people's earlier survey responses and the direction of the conversation)

Questions		**Purpose**
1.	**Demographic** *(group identification)* Thinking about the community in your building… 1.1. Could or do people down-size into the scheme in later life or sustain a young family there? 1.2. Do you think it's desirable for a Pocket development to attract and support people from a range of different life stages? 1.3. What are the barriers or opportunities and how could these be overcome?	To test whether the young and sociable demographic that developers associate with Pocket schemes (as interviews P1.1 and P2.1) is supported by residents.
2.	**Reasons for sharing** *(adaptability / lived experience)* Thinking about a hypothetical version of your building that included some extra shared amenities… 2.1. If you had access to a shared space or spaces (e.g. a gym, workshop, home office, shared terrace, walkway or growing area), would you use these socially, as an extension to your home or not at all? 2.2. How many households are you or would you be comfortable sharing access to indoor/outdoor spaces with?	As ML interview Q8, but hypothetically

3. Maintenance and management *(intentionality & lived experience)*

As ML interview Q5

Thinking about the shared indoor and outdoor spaces in this hypothetical development…

3.1. Would you be or are you happy to be part of a residents' management committee that's responsible for adjusting rules and service charges or for gardening… or would you prefer to pay more in service charge for the building to be fully managed and maintained by an agent?

3.2. If you are or would be happy to contribute your own time, would this be for social reasons, to keep costs down or to have a sense of control of your own home environment?

3.3. Visualising the meeting, how many households are too many to practically sustain a co-managed or co-maintained home environment?

3.4. Would you want other buyers to actively *want* to participate in the social, management and maintenance scene too, or is it enough for people to come with a neighbourly outlook and a passing interest in how their service charge was being spent?

4. Co-production *(intentionality & lived experience)*

To establish the importance of co-design and optimisation in cohousing, relative to a developer-led scheme that anticipates adjustability in the design (as Lietaert, 2010, pp. 577–578; Levitt and McCafferty, 2018, p. 301; Community led homes, 2020).

Relates to ML interview, Q2

If you had your chance to buy your flat (or one like it) all over again…

4.1. Would you have liked to have been part of a project steering group made up of other future residents, with a say in the design brief and some design decisions (e.g. the layout of the development as a whole)?

4.2. Would it have made a difference to you if the scheme had been reviewed or advised by a steering group made up of other Pocket flat owners, say, from other Pocket schemes?

4.3. Would you have liked to have *customised* your own flat (e.g. finishes, kitchen, size, location in the scheme, etc)?

4.4. Would you have preferred it to be left part finished so you could paint, install bathroom & kitchen, etc yourself? (i.e. DIY)

5. Moving house *(adjustability)*

As ML interview Q6

Looking back to when you made your choice of home…

5.1. How confident, experienced or cautious did you feel about choosing a home to meet your needs and a level of exposure that suited your attitude to investment risk?

5.2. Did you make your choice with the intention of moving again in the medium term and, if so, how long did you expect to remain in your current flat before moving on?

5.3. Does moving up the 'housing ladder' feel like an inevitable - even *desirable* - part of being a homeowner in the UK, or would you prefer to just get the 'right' home in the first place and not have to move ever again?

5.4. Does it worry you that the housing market could go down as well as up and therefore affect your ability to trade-up using equity if your housing needs were to change?

5.5. Do you think having access to shared amenities (like the ones we discussed earlier) could help you to forestall a house move... or do these just seem like 'nice-to-haves'?

5.6. Does a neighbourly environment make up for having a smaller flat?

6. **Adjustability** *(estate design)* — As ML interview Q7

See ML interview Q7

7. **The value of 'home'** *(brand / social, environ. & econ. value)* — As ML interview Q9

See ML interview Q7

Appendix C
Data analysis: Generating initial codes

The process of using thematic analysis to generate theory and findings from the data is drawn from widely-cited literature in social science research (Braun and Clarke, 2006, pp. 86–93; Bryman, 2012, pp. 578–581), as well as from online resources (e.g. Schultz, 2012; Ravasi, 2021). Using these methods, I generated initial codes with which to tag and organise the transcript and survey data. These four iterative steps are introduced in *Section 5.3.3: Generating initial codes (or headings)* but described more fully below.

Iteration 1: housing models on a spectrum

During the interviews with the developers of Marmalade Lane and the Pocket Living schemes, it became apparent that the distinction between their respective models was somewhat blurred. Both models are sociable in their intent and include degrees of co-management. Both developers had advanced knowledge about their future residents and could therefore anticipate the spatial trade-offs that buyers would be willing to make. However, neither model could be properly described without reference to related models on a spectrum.

The first sign that a comparative approach was needed, arose because both sets of developers expressed a mixture of nervousness and resentment towards the concept of *'co-living'.* They saw this model as a cynical corruption of both micro-housing and cohousing, being a fully-rented, highly-serviced, micro-living solution with a mixture of affordability and sociable objectives. Indeed, one participant described it as a model that offers only "a very small personal space, and then lots of communal space" that has been well-marketed (P1.1, 00:10). Another described it as a way "to justify appalling schemes… out on basically a wasteland" (P2.1, 44:25). Conversely, whilst both developers knew exactly what

co-living was - and why they saw it as a threat - neither could define *cohousing* in such specific terms. Indeed, it became clear early in the fieldwork that whilst Marmalade Lane has been described in the architectural and planning literature as "a radical experiment in cohousing" (Grylls, 2019), one participant saw the scheme as being in fact on "a spectrum between speculative and non-speculative housing" (P2.1, 5:24). There was therefore an emerging bundle of parameters being revealed by the fieldwork. In an attempt to capture this emerging mixture of suspicion and ambiguity within the field of alternative housing models, the following broad headings became the first iteration in the process of positioning the different models on a spectrum:

Code / heading	**Purpose**	**Example**
Influence	To establish (a) how much influence can be granted to residents by freeholders; and, (b) how much design influence is prohibitive for developers.	*"How late in the journey can you bring potential residents in, and still get that intentionality"? (P2.1, 16:04).*
Space standards	To establish the trade offs between private and shared space in each model	*"Pocket Living are probably doing something that's pretty socially useful in that they're providing small (but not crazy small) units in locations where they have a very high degree of amenity that doesn't come from the dwelling" (P2.1, 08:19).*
Demographic	To reveal how and to what extent the different models attract or engineer their membership around lifestyle, wealth, age, outlook or other attributes.	*"There is a certain, defined demographic" (P1.1, 02:24). "Groups involved in the discussion dictate things for others and in the future" (P2.2, 04:47).*
Community	To determine whether communitarian or sharing characteristics come from the brand, the members or from the regulating authority.	*Community is "an idea you carry with you... when you decide that you will know your neighbours" (P2.2, 32:08) & 32:37).*

Iteration 2: categorisation by stakeholder

This first iteration in the process of positioning the different models on a spectrum was helpful in terms of defining the scope of research and becoming familiar with the data. However, it was not insightful enough to contribute to the research aim of producing a framework for describing and implementing adaptable housing. It was also unable to separate out the different stakeholder groups and their incentives. Thus, an entirely separate coding system was required which could cut across the data. The data available for starting this new coding system was the developer transcripts - developers having been the first to be interviewed and the first transcripts to be analysed. This meant that headings and codes at this early stage, lent more heavily towards supply-side issues, particularly around the developer's risk. However, the developer views also expanded out to include observations on 'supplier incentives' and 'consumer preferences'. Thus, even just from these first interviews, it was possible to produce a tentative set of codes that could be applied to each stakeholder group. These were as laid out below:

Heading	**Code**	**Purpose**	**Examples**
Producer risks	Tenure	To understand the pre-existing constraints around development finance that affect the choice of tenure (sale vs built-to-rent). - On the basis that more flexible tenure could prove to be a key aspect of adaptable housing.	*"Some element of market risk is going to be essential unless you move away entirely from owner occupied tender" (P2.1, 7:06)*
	Viability	To establish if there are pre-existing *viability* constraints that make social or spatial innovation unviable. - On the basis that adaptable housing could increase development costs or rely on smaller scale developments.	*"When you've got a very small site that is very hard to acquire because of the competition, it's very hard to get through planning and to make it work viably." (P1.1, 07:39)*

	Design	To consider (a) how user engagement during design could increase densities; or, (b) how adaptability in use could limit the choice of construction system. - On the basis that adaptable housing and design processes can have positive as well as negative consequences for viability.	*"The idea of adaptability through time, doesn't sit well with the idea of homes now being well made, and well engineered." (P2.1, 28:36)*
	Sales	To establish how exposed developers feel to sales risk and whether adaptable housing or design processes could help. - On the basis that solutions that are more adaptable to more people or which have been adapted to a known end user group could offer a way of managing sales risk better.	*"There's about 18,000 people that are registered [with Pocket Living] (P1.1, 05:58), so "the one area of risk we have that is lower than other developers… is sales risk" (P1.1, 09:31).*

Heading	**Code**	**Purpose**	**Examples**
Supplier incentives	Finance	To understand how outside finance could be attracted to adaptability or other social value objectives. - On the basis that adaptable housing could have cost implications which ordinarily rely on the relative wealth of buyers.	*Annuity leaseback "allows you to spend a decent amount of money building the scheme. They give local authorities a bit of an income. They take people's pensions and they allow occupiers to pay… a sustainably low level [of rent]" (P2.1, 08:30).*
	Land	To understand whether landowners could be involved in making adaptable housing more viable, by retaining freehold rights or deferring land payments. - On the basis that adaptable housing could have higher upfront costs but also deliver higher long-term values than speculative developments.	*"You're reliant in the end on the landowner being either a public body with a policy desire to do this, or a private landowner with a bit of a legacy intent." (S2.1, 36:22).*

	Permission	To understand what planners look for in an adaptable or user-led design. - On the basis that design for adaptability could sit at odds with the fixed planning requirements.	*"The single-tenure, single-size is quite challenging in planning terms" (P1.1, 19:45).*

Heading	Code	Purpose	Examples
Consumer preferences	Demographic	To establish the value and purpose to consumers of demographic diversity and the nature of homogeneity within apparently diverse cohorts. - On the basis that the demographic make-up of a group could affect the group's ability to co-manage assets that increase adaptability.	*"A lot of cohousing people do come from a background where they've got a bit of equity, they want to live in a particular way" (P2.1, 07:06).*
	Spatial	To gather a range of ways to deliver adaptable housing. - On the basis that size, mix, flexibility, sharing, swapping and joinable units could enhance spatial adaptability.	*"There may be house swaps that go on, over time, rather than actual sales... maybe there's a top up rent payment as that person moves to the smaller house... So it's a different form of adaptability" (P2.1, 29:35).*
	Tenure	To test if or how tenure affects adaptability. - On the basis that tenure could affect permanence and demographics, with implications for co-management.	*There is a "fundamental tension about wanting to be really open, to offer affordable homes... but also wanting to control... the nature of your neighbourhood and community" (P2.1, 19:33).*

Management	To establish whether self-management was important to consumers, relative to living in a scheme managed by an agent. - On the basis that co-management may either be an essential ingredient of adaptable housing (e.g. for managing shared amenities), or because autonomy is desirable as in its own right.	*"They have a 'Residents' Management Company' for each [Pocket Living] development." This "means they [residents] control the service charge" (P1.1, 32:37).*

Iteration 3: headings derived from topic areas

Unfortunately, the coding system described above, did not prove robust enough to handle the interplay *between* stakeholders. This was for two reasons: one because the codes were sometimes only subtly different and two because they had been separated out by stakeholder. The problem of subtle differences between codes made it unnecessarily difficult to make comparisons. For example, the code 'design' was attributed to producers, whilst the 'permission' was used for suppliers and 'spatial' referred to the consumer. Yet, each of these terms touches on the same complex interplay between dwelling design, planning permission and spatial trade-offs. Meanwhile, the problem of fragmenting the data between Producers, Consumers and Suppliers was sometimes forced or ambiguous, to the extent that insights or meanings could be lost. Take, for example, the following extract about tenure, extracted from one interview:

> *"It [multi-tenure] is going to be the way forward. The difficulty is the control and the governance issues that go with that project" (S2.1, 30:36). "It's probably quite timely that there are people who are willing to take long-term steady income from a property and actually that could open up a new avenue for delivery" (S2.1, 1:01:59).*

The most interesting point in this extract is the interplay between *'governance', 'income'* and *'delivery'.* This interplay could be described as below:

> *A new, multi-tenure system of delivery could be possible if more suppliers of land and finance were willing to accept steady, longer-term incomes, and if consumers could manage the associated governance issues.*

Instead, however, the system of separating out data like this by stakeholder, meant that the richness in the interplay could be lost.

In summary, the limitations of having to categorise the data by stakeholder, compounded by minor variations in terminology, were conspiring to frustrate the eventual task of closed coding (or coding the codes). Instead, what was needed was a system for comparing a small number of topic areas or codes, in such a way as to retain their interdisciplinary meaning. To do this, the data - as gathered up to this point - was recast around just six codes (or headings). This made it easier to compare the implications of tenure - for example, between the different stakeholders - without needing to break up the text. This adjustment was also an opportunity to shift the terminology away from *outcomes* (i.e. *what* happened) and instead towards *behaviours* (i.e. *why* and *how* the outcome happened). As a result, the process aligned better with the project aim to understand choice formation from a capabilities perspective. A record of this change - and the merging of codes - is shown below. From this it is apparent that the biggest change is a merging of several risk items into a single 'financial incentives' code. This indicates the growing importance of non-spatial trade-offs between social value and financial risk:

Previous code	Replacement code	Purpose	Examples
Design	Dwelling design	As 'spatial' (see above) but now to include space standards and adaptability intentions.	*"At the brief stage… [we were] looking at the model of the sort of Georgian terrace so that in the long-term, they could be split or brought together or adapted in order to accommodate changing families" (S2.1, 11:37).*
Spatial	Estate design	As 'design' (see above) but now expanded in light of emergent data on the relationships between shared spaces and private dwellings: a. the trade-offs between private and shared space; and, b. the contest between residents and planners over design control.	*"Owners of private homes are sacrificing… space, whether it's internal or external… and putting that [money] into common facilities… and sharing of resources" (S2.1, 28:24).* *"They [the planning authority] could not get their heads around that the group did not want a building on that southern boundary because it basically diminished the open space provision" (S2.1, 49:19).*
Demographic	Group identification	As 'demographic' (see above) but expanded to allow for various forms of identity and circumstance to come through, rather than simply wealth or age.	*"They were able to stay because of their housing circumstances at that time" (S2.1, 07:32) with the result that "95% of those involved had very similar values" (S2.1, 08:17).*
Finance Sales risk Land Viability	Financial incentives	As 'finance', 'sales risk', 'land' & 'viability' (see above), but broadened to allow for an interplay between the social value and commercial risk of	*"There was a sort of slightly alternative independent mind at work, who were looking for an alternative even to*

		investing in housing (whether as a producer, supplier or consumer).	*standard homeownership, as a way of putting their money into something" (S2.1, 1:01:04).*
Tenure	Tenure	As 'tenure' (see above).	
Management	Lived experience	A repositioning of the term 'management' (see above) into a broader concept where the capacity to manage is an artefact of a degree of shared experience.	*"Everyone, without fail, referred to living in streets where they didn't know their neighbours, and loneliness and a dislocation" (S2.1, 28:24).*

Iteration 4: headings derived from wellbeing frameworks

Having taken time to rationalise the codes into a list of just six, it took the process of analysing several more transcripts to show that it had been too early to restrict the thematic analysis process to such an extent. Indeed, the rationalised codes were sometimes a poor fit for the data, to the extent that new codes were needed to accommodate the emergence of other, unexpected patterns. For example, the codes, 'spatial' and 'design', expanded out to include 'housing mix', 'design process' and 'shared amenities'. Likewise, the code, 'lived experience', became 'sociability' and 'management'; whilst the code, 'financial incentives', split into 'security' and 'control'.

By splitting out these codes, it became possible to distinguish between managing *risks* on the one hand, and optimising around *preferences* on the other. These adjustments also made room for unexpected incentives and aspirations to emerge, including influence, permanence, health, diversity and community. This was to the extent that adaptability became just one of *several* demand-side characteristics that the data was showing to be at play. However, it

meant that the data, having already been tabulated under one set of codes, had to be recast again, this time into a system that settled at thirteen codes.

On the one hand, this recasting illustrates the flexibility of thematic analysis, where a grounded, bottom-up process allowed for the code to be adjusted around the emerging data (Braun and Clarke, 2006, pp. 84 & 97). On the other hand however, thirteen codes made the process of data management more difficult. To help with this problem - and to position the codes in the context of the literature - these thirteen codes were grouped under five headings, each borrowed from a new framework for delivering wellbeing in housing. Developed by the *Quality of Life Foundation (QoLF),* these borrowed headings were 'Influence', 'Permanence', 'Housing (Health)', 'Diversity' and 'Community' (Urbed, 2021, secs 1a, 1c, 6a & 6b).

Of these five headings, two themes - 'permanence' and 'health' (wellbeing) - aligned with the economic premise of this research. The problem of permanence is pertinent to the challenge of trading up in a low liquidity housing market. Meanwhile, health (or wellbeing) refers to the challenge of avoiding welfare losses when housing *needs* are changeable but housing *space* is not. In addition to these, the QoLF framework offered two other themes. These were, 'influence' and 'community'. Their inclusion helped to allow ideas around control and neighbourliness to be captured as part of the potential bundle of housing services that motivate people to seek more empowering or adaptable housing solutions.

In summary, by adopting the relevant QoLF headings, the amended coding system became both easier to manage and more amenable to emerging patterns in the data. Further, the decision to adopt terms from existing research meant that comparisons and contributions could be more easily made. This set of codes and headings is listed below and became the main framework for analysing many of the early transcripts.

Previous code	Replacement heading	Replacement code	Purpose
Estate design	Influence	Design process	Engagement, POE, briefing & co-design
Lived experience		Management	The managed experience
Financial incentives		Financial control	Development viability
Financial incentives	Permanence	Financial security	Consumers' risk of transacting / borrowing; developer's sales risk
Tenure		Tenure security	The need for subsidy (shared ownership or other affordability)
Dwelling design	Housing/ Health	Dwelling design	Adaptability at the scale of the small estate
Estate design		Estate design	Adaptability at the scale of the cluster or small estate
		Location	Effect of location on amenities and private space
Group identification	Diversity	Demographic	Group identification, sales risk, occupancy
Estate design		Housing mix	Including quantum and configuration
Estate design	Community	Shared indoor amenity	Amenity rooms and facilities
Estate design		Shared outdoor amenity	Including outdoor circulation (walkways, terraces, streets)
Lived experience		Sociable experience	Social 'brand'

Appendix D
Schedule of findings

The following tables gather together the findings highlighted in Chapter 11 (Synthesis) in a way that makes them more accessible. Each finding is placed according to its relevance to the demand and supply sides of the development equation, with supply side findings set out against the RIBA work stage to which they apply. Each table reflects one of the three dimensions of the adjustable housing concept (i.e. tenure, dwellings or infrastructure). Each of these is then divided into the three sub-themes that emerged within these. These tables were used to operationalise the findings as the first step in producing the table of wants, outcomes, needs and recommendations shown in Section 9.4.

Synthesis of findings from Chapter 11.1: **ADJUSTABLE TENURE** *(or, less-than-whole-home ownership)*						
THEME	**DEMAND**		**SUPPLY** (arranged by RIBA work stages)			
	First time buyers	**Est. home owners**	**Stages 0-1** Briefing	**Stages 2-3** Planning	**Stages 4-5** Constructing	**Stages 6-7** Using
Adjust-able commit-ment (see Section 9.1.1)	**Residents** want secure tenure and option of staying for the longer-term but some miss the flexibility of renting	**Residents** cannot commit until sale of their existing home	**Developer** sees FTBs as needing a short-term stepping stone	**Residents** worry that a third party investor would cause complexity and have a decision-making veto	**Developer** binary choice of sale or sublet leaves no option for shared ownership	**Developer** finds that sale only means developer carries excess sales risk
Mitigation			**Developers** needs ⅓ of homes to be legally committed at inception & ⅔ before start on site, to manage sales risks & to make ESG goals more achievable			
Adjust-able	**Residents** want, simple,	**Residents** want assurance	**Resident** steering group is	**Developer** Seeks BTR to diversify	**Residents** Allows second	**Developer** Spec. sale creates risk

invest-ment (see Section 9.1.2)	familiar contract that does not feel like renting Not motivated by capital gains	against changing health in older age Want a place to put their money Reject landlords	homeowner-led	portfolio **Planner** sees single tenure as politically challenging	homes & subletting in perpetuity	& excess finishing costs **Residents** Without equity, renters contribute less
Mitigation				**Developers** needs an aligned, BTR or SO investor to manage sales risks & make ESG goals achievable		
Adjust-able demo-graphic (see Section 9.1.3)	**Residents** want a compact home as a hedge against changes in the labour & housing markets	**Residents** want to be inclusive but also to decide who their neighbour will be	**Developer** pursues age-specific **Enabler** Values-led process	**Residents** see renters as being less engaged & creating more work for owners See 'outsider' views as a threat to group identity	**Residents** have similar education, political views & housing pathways	**Residents** behaviour means 'outsider' groups are missing or excluded Secondary buyers defined by perception of risk, rather than age or value
Mitigation					**Enablers** needs template for groups to collectively own rented or part-rented homes	

Synthesis of findings from Section 11.2:
ADJUSTABLE DWELLINGS *(or, dwellings that are adaptable with little or no physical change to the building fabric)*

THEME	**DEMAND**		**SUPPLY** (arranged by RIBA work stages)			
	First time buyers	**Est. home owners**	**Stages 0-1** Briefing	**Stages 2-3** Planning	**Stages 4-5** Constructing	**Stages 6-7** Using
Adjust-able floor space (see Section	**Residents** see excess private space as an affordability barrier to single FTBs	**Enablers** describes leading a minority co-design group towards bigger homes for	**Developer** gives depth to narrow market by offering unfinished lofts for expanding into	**Enablers** breakdown in trust means neither group nor planners will bend on local	**Architect** relies on design codes to anticipate all possible changes **Legislation**	**Architect Developer Agent & Consumer** see loft conversions as one-way process

9.2.1)		future expansion within	**Developer** rules out space for future needs because affordability precludes	design	for minimum space standards is too prescriptive at lower end	that adds little value & contributes to inclusivity problems **Residents** inflexible layouts seen as catalyst for house moves & transience
Adjustable housing mix (see Section 9.2.2)	**Residents** want option to stay in a scheme upon forming a 2p household	**Agent** describes a *hard core* group that really want the project to happen	**Enablers'** priority was to keep the group happy by meeting their needs, even if most residents join later **Developer** anticipates house swaps **Residents** scaled up from needs of minority resident group	**Developer** minimised financial and carbon costs by using modular, repetitive construction **Planner** see single size schemes as politically challenging	**Planners** fall back on housing targets that they know to be wrong **Developers** produced fewer 1b/2p & 2b/3p flats	**Developer** mismatch caused sales risks & costs **Residents** note no younger couples without children & barriers to singles wanting to trade up Also, more bigger flats mean more downsizers & sublets
Adjustable density (see Section 9.2.3)	**Residents** want conventional ownership which means starting small	**Residents** want social inclusivity & option to adjust around carer scenarios	**Architects** described age-specific design brief	**Developer** worries about void risks & technical challenges (design, construction & legal) **Planners** fear that developers could exploit co-design and undermine local authority	**Agent** co-design produces homes that are too small to divide **Architect** co-design produces flats that are too big to join **Planner** withheld PD rights	**Residents** feel homes are too small, well engineered to adjust **Residents** see design codes as inadequate given planning restrictions

Synthesis of findings from Section 11.3:

ADJUSTABLE INFRASTRUCTURE *(or, a shared bundle of spaces, rights & services)*						
THEME	**DEMAND**		**SUPPLY** (arranged by RIBA work stages)			
	First time buyers	**Est. home owners**	**Stages 0-1** Briefing	**Stages 2-3** Planning	**Stages 4-5** Constructing	**Stages 6-7** Using
Licence to adjust (see Section 9.3.1)	**Residents** want to share insight from varied housing experiences, have limited choice of layout or finishes, and take control from property manager	**Residents** want control over spaces & finances as excuses to meet	**Enablers** lead group decision-making process to keep group together & to give the impression of co-design **Developer** bases brief on those registered or involved at the time	**Residents** are so concerned about who neighbours are that they effectively interview prospective buyers **Architect's** designs planning scheme with little reference to co-design process	**Developer** sells on freehold to third party **Residents** do not extend equal voting rights to renters	**Residents** attach more value to co-manage than to co-design
Mitigation			**Architect** needs briefing review process (not co-design) to gain an insight into FTBs' multiple housing experiences		**Agents** need to educate buyers on benefits and obligations of co-managed housing	
Space to adjust (see Section 9.3.2)	**Residents** want purposeful & incidental spaces that make small flats feasible for longer	**Residents** want a sustainable lifestyle and spaces to *bind* around	**Residents** conflate a sustainable lifestyle with a sharing economy, leading to demand for more sociable space **Developers** see value in spaces that support their brand by conveying a sociable lifestyle	**Planner** requires shared spaces in lieu of balconies to protect their authority **Architect's** brief is constrained by planning & directed towards marketable social spaces, despite an awareness that small flats need spillover spaces	**Developer** sees social spaces as big & expensive, creating a service charge liability	**Enabler** believes big social space is not affordable for other groups **Residents** note social spaces do not support spillover from private homes & can be seen as a liability **Agent** notes spaces have since been converted to meet needs of later joiners
Mitigation			**Agents** need to promote housing with with shared spaces as a non-eccentric product, rather than as a cost compromise			

Opp-ortunity to adjust (see Section 9.3.3)	**Residents** want to avoid loneliness as they transition from shared housing	**Residents** want to avoid loneliness as they contemplate older age *(especially for people who have relocated away from friends & family in search of a more sociable housing experience)*	**Developers'** priority is to create an infra. to kick-start a feeling of community for the first resident cohort **Agent** advises against FTBs on the assumption that FTBs are younger and therefore more committed to work & social life than to community	**Residents** worry that without a sense of familiarity, permanence or regular engagement in the community, the ability to co-manage would wane or become fractious **Planner** does not recognise the amenity value of incidental spaces and little eddies in the circulation	**Developer** makes house moves and transience more likely by designing compact or inflexible homes	**Agents** have power to communicate community culture to buyers, especially on the resale market, but find the market needs educating **Residents** value adjacent incidental spaces as an arena for informal mediation & to preview ideas before meetings **Residents** find original cohesion is eroded by transience (e.g. house moves or renters)
Mitigation			**Developer's** design briefs need to consider permanence & neighbour recognition **Planners** need to recognise the amenity value of circulation **Architects** need to be educated on the interplay between shared space & collective decision-making			**Agents** need to resources to educate consumers on co-managed housing or more collective ways of living

Appendix E
Schedule of findings by stakeholder

The following tables gather together the findings highlighted in Chapter 10 (Conclusions and recommendations) to show what they wanted at the outset, what they actually got, what they find they need and what they would recommend for enhanced adjustability at future schemes. These are useful for reference as regards the barriers to adjustable housing discussed in Section 10.1, as well as the conclusions on the characteristics and industry changes that are needed (Sections 10.2 and 10.3). The three tables below are grouped, once again, according to the three stakeholders groups[78] being, *consumers* (i.e. residents), the *producers* (of the design and development) and the *suppliers* (of the engagement and approvals processes).

	FINDINGS REGARDING THE ~ **PRODUCERS** ~ OF THE CASE STUDY MODELS			
	What they WANTED	**What they GOT**	**What they NEED**	**What they RECOMMEND**
Arch-itects	**Adjustable layouts** with slack space (e.g. lofts and garages) for future expansion **Social value** through external shared circulation doubling as outdoor amenity in lieu of private balconies **User control**	**One-way adjustability** because loft expansions can only happen once, whilst flats are too big to join and changes are constrained by design codes (in the absence of PD rights) **Lifestyle-led space sharing** driving marketable social spaces	**Consult FTBs** and younger households about the trade-offs between private and shared spaces that could drive value and expand capabilities (e.g. including shared circulation and shared spillover spaces to support smaller dwellings) **Awareness of governance needs**	**Briefing review process** being a limited scope of consultation with current and potential residents (as opposed to co-design) **Update space standards** to recognise the amenity value of shared outdoor spaces (e.g. circulation) in lieu of private

[78] Stakeholder groups (producers, suppliers and consumers) are as introduced in Section 4.1.3 and as referred to in Chapters 6-8.

	through design codes **Spillover spaces** to support smaller private dwellings	but not incidental outdoor circulation whose social / amenity value is not recognised in planning negotiations **Fixity** due to removal of permitted development rights	to ensure the brief guides the design towards spaces for collective decision-making	balconies
Devel-opers	**Extend the range of the housing market** by offering a sociable experience or an unusually high level of inclusivity, community, affordability, or customisation, compared to market alternatives (especially volume housebuilders)	**Higher sales risks** due to commitment issues amongst buyers, leading to excess sales risk and associated capital spend **Exclusion** of younger 2-person first time buyer households (both sharers or couples without children)	**Offload sales risks** to make ESG goals more achievable by ensuring ⅓ of homes are legally committed at inception and ⅔ before start on site **Scenarios-based space standards** to accommodate different forms of living (especially two-person or carer arrangements)	**Attract investors** into underwriting collective or co-managed forms of housing, as a way of minimising developers' sales and investment risks using institutional capital **Update space standards guidance** to recognise 2bed/2person flats
Agent / Sales	**Age-specific housing** to steer developers away from 1b/2p and 2b/3p flats, on the basis that FTBs are too constrained by price to buy a bigger flat and too busy with	**Lifestyle-seeking buyers** that buy into the brand, want the project to happen, want to set the rules, or see the scheme as the focus of their social life	**Marketing material** to communicate the community's co-management structure to buyers (including those on the resale market)	**Inform consumers** on the value of more collective and co-managed forms of housing through marketing material that dispels any association with

	work and socialising to commit to co-managed living	**Indivisible homes** as a consequence of floor plates that are too small **Exclusion** of younger couples without children		communes

	FINDINGS REGARDING THE ~ **SUPPLIERS** ~ OF THE CASE STUDY MODELS			
	What they WANTED	**What they GOT**	**What they NEED**	**What they RECOMMEND**
Enab-lers	**Maintain group cohesion** to give the appearance of a resident-led housing project by keeping the group happy and together during the design	**Values-based & age-specific** decisions that were largely professionally-led (rather than group-led) and did not involve younger buyers **Fixed outcomes** due to construction system and planners' decision to withhold PD rights	**Collective ownership** to enable residents to invest in and manage any rented or part-rented homes but on terms agreed by the group **Permitted development rights** to empower residents to make minor external adjustments without planning permission	**Community-owned investment fund** to show how some residents might own and manage any shared ownership or built-to-rent homes **Landlords' permitted development rights** to approve minor alterations to leasehold property

Planner	**Encourage co-managed housing** as a way of improving upkeep, accountability and permanence	**Compliance** with housing targets they knew to be wrong and space standards that preclude 2b/2p flats	**Protection** against exploitation by developers or groups demanding dispensation at planning and permitted development rights on the basis of claims to represent a resident group, or by groups claiming to represent the wider community	**Scenarios-based approvals framework** to allow housing densities to vary within max/min parameters, both during construction and over time

	FINDINGS REGARDING THE ~ **CONSUMERS** ~ OF THE CASE STUDY MODELS			
	What they WANTED	**What they GOT**	**What they NEED**	**What they RECOMMEND**
Est. home owners	**Surety** against changing care needs in older age, as well as the opportunity to choose neighbours **Company** rather than loneliness as they transition into older age (especially for those who relocated away from friends & family in search of a different housing environment) **Sustainable living** interpreted as a sharing economy	**Exclusive co-design** by a cohort of < ⅓ of the community, of whom those with divergent views ended up leaving and others could not commit (or did not join) because equity was tied up in home **Two-tier community** because early joiners have similar values (educational, political, time, wealth) and allowed each other to buy flats as second homes to sublet	**Homogenous community** with similar values and an even distribution of rights and responsibilities, to improve decision-making and equal levels of participation **Excuses to meet** as provided by spaces to discuss and service charges to allocate **Informal pre-meetings** without which	**Means of influencing sales and lettings** either directly or indirectly, by conducting viewings, dictating marketing material or setting lease terms **Less emphasis on co-design** because residents want to co-manage but are happy to leave co-design to others **Something to**

	Investment but as a tangible place to put money **Inclusivity** interpreted as an intergenerational community and the rejection of landlords **Authority** to make decisions without the complication of involving outsiders (e.g. landlords, investors, housing providers or people with divergent views)	on terms that mean rights are unevenly distributed between tenures, causing tenants to disengage **Fixity** of housing mix and private sale tenure due to lease terms and construction **Wrong housing mix** scaled up from members' needs to create sales risk because too many houses and flats to suit downsizers **Excess social space** seen as maintenance liability & cost barrier that exists, in part, because of the conflation of sustainability with a sharing economy **Age 20s-30s missing** esp. young couples without children, because of too few 1b/2p and 2b/3p flats **One-way adjustability** because unfinished lofts only benefit first	co-management breaks down (e.g. during Covid-19 lockdowns) **Means of adjusting for inclusion and mismatch** in case of sales problems, missing groups and as social wishes of early joiners give way to demographic change (e.g. expanding households, carers or teenagers)	**bind around** shared amenities as excuses to meet (e.g. garden, space, service or expenditure) **Local shared spaces** as opportunities for informal pre-meetings (e.g. doorstep spaces, bins or adjacent gardens) **Spaces for spillover** rather than spaces for socialising or for signalling a sharing economy (e.g. workspace, family break-out space, storage and business that extend the utility of a private home) **Variable housing mix & sizes** to enable *continuous* rather than one-way adjustability (e.g. house swaps or joinable/divisible units) **Permitted development rights** for resident-owned management companies (or, collective landlords) to reduce reliance design codes that cannot predict all scenarios **A scale for remembering**

		owners whilst design codes are too restrictive without PD rights		**names** being small enough to both receive and *give* support
	What they WANTED	**What they GOT**	**What they NEED**	**What they RECOMMEND**
First time buyers	**Surety** against future changes in the labour & housing markets **Company** rather than loneliness as they transition from shared housing **Neighbours with similar housing pathways** having come from shared, rented or parental homes **Stability** through secure tenure and option of staying for the longer-term, even if some miss the flexibility of renting **Conventional ownership** due to its familiarity and regardless of space implications of this choice **No expectation**	**Community defined by risk** rather than age, as they seek affordable security and a way of minimising their exposure to market shocks **No margin for expansion** in the event that single buyers form couples or have a child and wish to trade-up without leaving their community **Transient community** due to small flat sizes **Dwindling participation** due to transience and the associated erosion of original community cohesion as buyers on the resale market arrive unaware of the co-management opportunities	**Options to stay** in a scheme upon forming a 2p household (but still affordably compact or discounted) **Purposeful shared spaces** so that housing needs (rather than social needs) have somewhere to spillover from compact flats (e.g. workspace, workshop, storage, garden and allotment) **Means of building community cohesion** through *informal* spaces to meet people and a way of influencing the marketing of flats on the resale market **Nothing that feels like renting** and therefore a rejection of landlords, property managers and third party shared	**Joinable / divisible flats** seen as ideal, achievable and familiar **Incremental variation in flat size** so people can afford to trade-up in the same scheme **Forum for sharing housing insights** as accrued through the many and varied experiences of rented and shared housing **Limited customisation** from a 'menu' of layouts, finishes and management options **Way of influencing new buyers** by informing them of the co-management opportunities, via estate agents

	of capital gains and therefore disposed to relinquish gains to shared ownership provider (were it not for the above)		ownership providers, due to bad experiences or reputations	**Purposeful shared spaces** rather than spaces for socialising (e.g. workspace and storage to extend the utility of a private home)

Appendix F
Eight barriers to adjustable housing

The findings, as synthesised in Chapter 11, show eight barriers that appear holding back adjustable housing in the case study models. Each is drawn from findings (as scheduled in Appendix E) and is tabulated below, with attribution to the stakeholder(s) who raised them. The short descriptions provide a foundation for the recommendations in Chapter 10.

EIGHT BARRIERS TO ADJUSTABLE HOUSING	Description and attribution to stakeholder		
	Consumers' view	**Producers' view**	**Suppliers' view**
Participatory co-design	An option which is not seen as valuable by the majority of residents, yet allows an unrepresentative steering group to control the brief, leading to greater sales risks for the developer.		
Top-down design legislation	Leads to a mix of dwelling sizes that exclude some groups, create mismatch, increase sales risks and make it harder for people to trade-up within the same scheme, being based on out-of-date local housing needs assessments and space standards which are not granular enough at the lower end.		
Loss of agency	Leaves a community beholden to a distant freeholder or local authority if they want to adjust the building fabric or services.		
Individually extendable homes	Can be adjusted only once and have consequences for inclusivity and affordability.		
Shared social spaces	Create costs and liabilities but do not always provide an equitable infrastructure for decision-making.		
Single tenure private sale		Traditional owner occupation increases the developer's sales risks and can lead to sublets	
Mixed tenure incl. rental	Leads to a two-tier community if tenants sit alongside owners and other invested tenures		

Underdeveloped market	Sales and resales rely on estate agents' ability to describe and promote a more collective lifestyle, without adequate precedent, marketing material or likelihood of first-hand experience.	

Data sources

The following codes denote the interview or survey data to which the findings refer. Where these are referenced, the code will include a time or question number so that they can be easily found within the transcript or survey outputs. For example, C1.1, Q6 refers to the consumer (C) survey of case study 1, question 6. Likewise, P2.3, 23:46 refers to producer (P) interview of case study 2, interview 3, at 23 minutes 46 seconds into the transcript.

P1.1: Strategic planning & Comms, Pocket Living (n=1)

P1.2: Sales & Customer experience, Pocket Living (n=2)

P1.3: Architect to Pocket Living (n=1)

P2.1: Marmalade Lane developer, Town (n=2)

P2.2: Marmalade Lane architect (n=1)

P2.3: Marmalade Lane estate agent (n=1)

S2.1: Marmalade Lane enabler & feasibility designer (n=2)

S2.2: Marmalade Lane planner (n=1)

C1.1: Survey of Pocket Living residents (n=12)

C1.2: Pocket Living resident 1 (n=1)

C1.3: Pocket Living resident 2 (n=1)

C1.4: Pocket Living resident 3 (n=1)

C1.5: Pocket Living resident 4 (n=1)

C2.1: Survey of Marmalade Lane residents (n=11)

C2.2: Marmalade Lane resident 1 (n=1)

C2.3: Marmalade Lane resident 2 (n=1)

C2.4: Marmalade Lane resident 3 (n=1)

C2.5: Marmalade Lane resident 4 (n=1)

C2.6: Marmalade Lane resident 5 (n=1)

Bibliography

Alexander, C., Ishikawa, S. and Silverstein, M. (1977) *A Pattern Language: Towns, Buildings, Construction*. Oxford University Press.

Alexiou, K., Hale, V. and Zamenopoulos, T. (2022) 'Design Capital: Unearthing the Design Capabilities of Community Groups', *International Journal of Design*, 16(2), pp. 33–46.

Arundel, R. and Doling, J. (2017) 'The end of mass homeownership? Changes in labour markets and housing tenure opportunities across Europe', *Journal of Housing and the Built Environment*, 32(4), pp. 649–672.

Arundel, R. and Ronald, R. (2017) 'The role of urban form in sustainability of community: The case of Amsterdam', *Environment and Planning B: Urban Analytics and City Science*, 44(1), pp. 33–53.

Awan, N., Schneider, T. and Till, J. (2013) *Spatial agency: Other ways of doing architecture*. London, England: Routledge. Available at: https://doi.org/10.4324/9781315881249.

Axelrod, R. (1984) *The evolution of cooperation*. New York: Basic Books Inc.

Baird, J. (2016) *Orchard Park (K1, Topper Street): Decision notice*. S/3223/15/FL. South Cambridgeshire District Council. Available at: https://scambs.moderngov.co.uk/ieDecisionDetails.aspx?ID=9971.

Barnes, Y. (2017) 'Prime property predictions for 2017: Buyers must either add value or head to emerging markets - if they have the stomach for it', *Financial Times*, 6 January. Available at: https://propertylistings.ft.com/propertynews/united-states/4924-prime-property-predictions-for-2017-savills.html.

Baum, A. (2020) *Tokenisation: The future of real estate investment?* University of Oxford. Available at: https://www.sbs.ox.ac.uk/sites/default/files/2020-01/tokenisation.pdf.

Bauman, Z. (2013) *Liquid Times: Living in an Age of Uncertainty*. John Wiley & Sons.

BEIS (2020) *Powering our net zero future*. CP 337. UK Department for Business, Energy and Industrial Strategy. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/945899/201216_BEIS_EWP_Command_Paper_Accessible.pdf.

Bell, D. and Rutherford, A. (2012) 'Long-Term Care and the Housing Market',

Scottish Journal of Political Economy, pp. 543–563. Available at: https://doi.org/10.1111/j.1467-9485.2012.00594.x.

Bentham, J. (1823) *An Introduction to the Principles of Morals and Legislation*. London: W. Pickering.

Biggeri, M. and Ferrannini, A. (2014) 'Opportunity Gap Analysis: Procedures and Methods for Applying the Capability Approach in Development Initiatives', *Journal of Human Development and Capabilities*, 15(1), pp. 60–78.

Blanc, F. and Scanlon, K. (2022) 'Sharing a home under lockdown in London', *Buildings and Cities*, pp. 118–133. Available at: https://doi.org/10.5334/bc.182.

Blandy, S. (2014) 'Collective Property: Owning and sharing residential space', in N. Hopkins (ed.) *Modern Studies in Property Law*. Bloomsbury Publishing, pp. 151–172.

Blandy, S., Dixon, J. and Dupuis, A. (2006) 'Theorising Power Relationships in Multi-owned Residential Developments: Unpacking the Bundle of Rights', *Urban studies* , 43(13), pp. 2365–2383.

Bourassa, S.C., Haurin, D.R. and Hoesli, M. (2016) 'What affects children's outcomes: house characteristics or homeownership?', *Housing Studies*, 31(4), pp. 427–444.

Bourdieu, P. (1986) 'The forms of capital', in J. Richardson (ed.) *Handbook of Theory and Research for the Sociology of Education*. Westport, CT: Greenwood, pp. 241–258.

Boyer, R.H.W. and Leland, S. (2018) 'Cohousing For Whom? Survey Evidence to Support the Diffusion of Socially and Spatially Integrated Housing in the United States', *Housing Policy Debate*, pp. 1–15. Available at: https://doi.org/10.1080/10511482.2018.1424724.

Bramley, G. *et al.* (2010) 'Estimating housing need'. Available at: http://eprints.whiterose.ac.uk/72850/1/estimatinghousingneed.pdf.

Brand, S. (1995) *How Buildings Learn: What Happens After They're Built*. Penguin Publishing Group.

Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative Research in Psychology*, pp. 77–101. Available at: https://doi.org/10.1191/1478088706qp063oa.

Braun, V. and Clarke, V. (2022) *Thematic Analysis: A Practical Guide*. SAGE Publications, Limited.

Brown, T. and King, P. (2005) 'The Power to Choose: Effective Choice and Housing Policy', *European Journal of Housing Policy*, 5(1), pp. 59–97.

Bryman, A. (2012) *Social Research Methods*. 4th edn. Oxford University Press.

Buchanan, J.M. (1965) 'An Economic Theory of Clubs', *Economica*, 32(125), pp. 1–14.

Byrne, G. (1988) 'Interview with Jack Campbell of The Royal Dublin Fusiliers, 16th Irish Division', *The late late show*. RTE 1. Available at: https://www.youtube.com/watch?v=DWnc-ZlIo5s.

CABE (2009) *Space in new homes: what residents think*. Commission for Architecture and the Built Environment. Available at: https://www.designcouncil.org.uk/fileadmin/uploads/dc/Documents/space-in-new-homes-summary.pdf.

Cabré, E. and Andrés, A. (2018) 'La Borda: a case study on the implementation of cooperative housing in Catalonia', *International Journal of Housing Policy*, 18(3), pp. 412–432.

Cambridge Architectural Research (no date) *Cambridge Cohousing Ltd*, *Cambridge Architectural Research Limited*. Available at: http://www.carltd.com/news/cambridge-cohousing-ltd (Accessed: 12 June 2020).

Cambridge Cohousing Ltd (2018a) *About K1*, *Cambridge K1*. Available at: http://www.cambridge-k1.co.uk/about-k1/ (Accessed: 12 June 2020).

Cambridge Cohousing Ltd (2018b) *Joining K1*, *Cambridge K1*. Available at: http://www.cambridge-k1.co.uk/joining-k1/ (Accessed: 14 June 2020).

Cambridge Cohousing Ltd (2018c) *Questions and answers*, *Cambridge K1*. Available at: http://www.cambridge-k1.co.uk/home/faq/ (Accessed: 12 June 2020).

Carmichael, D.G. and Taheriattar, R. (2018) 'Valuing deliberate built-in flexibility in houses – exampled', *International Journal of Strategic Property Management*, 22(6), pp. 479–488.

Carmona, M. (2009) 'Design Coding and the Creative, Market and Regulatory Tyrannies of Practice', *Urban studies* , 46(12), pp. 2643–2667.

Carmona, M. (2019) 'Place value: place quality and its impact on health, social, economic and environmental outcomes', *Journal of Urban Design*, 24(1), pp. 1–48.

Carmona, M. *et al.* (2020) *Home Comforts: How the design of our homes and neighbourhoods affected our experience of the Covid-19 lockdown and what we can learn for the future*. Place Alliance. Available at: https://kb.goodhomes.org.uk/wp-content/uploads/2020/10/Place-Alliance-Homes-and-Covid-Report_2020.pdf.

Carmona, M. (2021) 'Home Comforts--Results from the lock-down stress test',

Town and country planning: the quarterly review of the Town and Country Planning Association, 891, pp. 64–66.

Carozzi, F., Hilber, C.A.L. and Yu, X. (2020) 'On the Economic Impacts of Mortgage Credit Expansion Policies: Evidence from Help to Buy'. Available at: https://papers.ssrn.com/abstract=3594250 (Accessed: 27 August 2020).

Centre for Social Justice (2019) *Putting down roots: Improving security for renting families and private landlords*. Centre for Social Justice. Available at: https://www.centreforsocialjustice.org.uk/wp-content/uploads/2019/03/putting-down-roots.pdf.

Centre for Social Justice (2021) *Pillars of Community: Why communities matter and what matters to them*. Centre for Social Justice. Available at: https://www.centreforsocialjustice.org.uk/wp-content/uploads/2021/06/Pillars-of-Community.pdf.

Chatterton, P. (2013) 'Towards an Agenda for post-carbon cities: Lessons from Lilac, the UK's first ecological, affordable cohousing community', *International journal of urban and regional research*, 37.5, pp. 1654–1674.

Chatterton, P. (2019) *Unlocking Sustainable Cities: A Manifesto for Real Change*. Pluto Press.

Cheshire, P. (2009) 'Urban land markets and policy failures'. Available at: http://eprints.lse.ac.uk/30837/ (Accessed: 28 February 2020).

Cheshire, P. (2018) 'Broken market or broken policy? The unintended consequences of restrictive planning', *National Institute Economic Review*, pp. R9–R19. Available at: https://doi.org/10.1177/002795011824500111.

Cheshire, P.C. and Hilber, C.A.L. (2017) *The economics of land markets and their regulation*. Edited by P.C. Cheshire and C.A.L. Hilber. Cheltenham, UK: Edward Elgar Publishing (The International Library of Critical Writings in Economics), p. 808.

Cheshire, P.C., Nathan, M. and Overman, H.G. (2014) *Urban Economics and Urban Policy: Challenging Conventional Policy Wisdom*. Edward Elgar Publishing.

Cheshire, P., Hilber, C.A.L. and Koster, H.R.A. (2018) 'Empty homes, longer commutes: the unintended consequences of more restrictive local planning', *Journal of public economics*, 158, pp. 126–151.

Chevalier, J.M. and Buckles, D.J. (2019) *Participatory action research: Theory and methods for engaged inquiry*. Routledge.

de Chile, T. and Verona, I. (2006) 'Elemental Program: Rethinking Low-Cost Housing in Chile', *PRAXIS: Journal of Writing + Building*, (8), pp. 52–57.

Chiodelli, F. (2015) 'What is really different between cohousing and gated communities?', *European Planning Studies*, 23(12), pp. 2566–2581.

Christodoulides, K. (2016) *Orchard Park, K1 Site: Report to planning committee*. S/3223/15/FL. South Cambridgeshire District Council. Available at: https://scambs.moderngov.co.uk/documents/s94083/S-3223-15-16%20K1%20Orchard%20Park.pdf.

Christophers, B. (2021) 'A tale of two inequalities: Housing-wealth inequality and tenure inequality', *Environment & planning A*, 53(3), pp. 573–594.

Clapham, D. (2018) *Remaking housing policy: An international study*. Routledge.

Clapham, D. and Foye, C. (2019) *How should we evaluate housing outcomes?* UK Collaborative Centre for Housing Evidence. Available at: https://housingevidence.ac.uk/wp-content/uploads/2019/03/190329_Evaluating_housing_outcomes_final.pdf.

Clapham, D., Foye, C. and Christian, J. (2018) 'The Concept of Subjective Well-being in Housing Research', *Housing, Theory and Society*, 35(3), pp. 261–280.

Clark, W.A.V. and Lisowski, W. (2017) 'Decisions to move and decisions to stay: life course events and mobility outcomes', *Housing Studies*, 32(5), pp. 547–565.

Coates, D., Anand, P. and Norris, M. (2013) 'Housing, happiness and capabilities: A summary of the international evidence and models', *International Journal of Energy, Environment, and Economics*, 21(3).

Colander, D. (2000) 'The death of neoclassical economics', *Journal of the History of Economic Thought*, 22(2), pp. 127–143.

Coleman, A. *et al.* (1985) 'Utopia on trial: Vision and reality in planned housing'. Available at: http://193.137.34.116/handle/123456789/101436 (Accessed: 19 August 2021).

Coleman, A. and Cross, D. (1995) 'DICE design potential in Canada', *Land use policy*, 12(2), pp. 145–164.

Community led homes (2020) *What is community led housing*, *Community led homes*. Available at: https://www.communityledhomes.org.uk/what-community-led-housing (Accessed: 29 August 2020).

Companies House (2019) *Pocket Living Limited - Overview*. Available at: https://beta.companieshouse.gov.uk/company/04538848 (Accessed: 24 May 2020).

Companies House (2020) *Cambridge Cohousing Limited*. Available at: https://beta.companieshouse.gov.uk/company/08640631 (Accessed: 26 May

2020).

Corbusier, L. (1967) *The Radiant City: Elements of a Doctrine of Urbanism to be Used as the Basis of Our Machine-age Civilization*. Orion Press.

Corlett, A. and Odamtten, F. (2021) *Hope to buy: The decline of youth home ownership*. Resolution Foundation. Available at: https://www.resolutionfoundation.org/app/uploads/2021/12/Hope-to-buy.pdf.

Costa, D. and Kahn, M. (2000) 'Power Couples: Changes in the Locational Choice of the College Educated, 1940-1990', *Quarterly Journal of Economics*, 115(4), p. 29.

Crawford, J. and McKee, K. (2018) 'Hysteresis: Understanding the Housing Aspirations Gap', *Sociology*, 52(1), pp. 182–197.

Crocker, D.A. (2008) *Ethics of Global Development: Agency, Capability, and Deliberative Democracy*. Cambridge University Press.

Cromarty, H. (2020) *Shared ownership (England): the fourth tenure?* 08828. House of Commons. Available at: http://researchbriefings.files.parliament.uk/documents/CBP-8828/CBP-8828.pdf.

Cromarty, H. (2022) *Leasehold Reform (Ground Rent) Bill 2021-22*. 09236. House of Commons Library. Available at: https://researchbriefings.files.parliament.uk/documents/CBP-9236/CBP-9236.pdf.

Crosby, N., Devaney, S. and Wyatt, P. (2020) 'Performance metrics and required returns for UK real estate development schemes', *Journal of Property Research*, 37(2), pp. 171–193.

Crosby, N. and Wyatt, P. (2019) 'What is a "competitive return"to a landowner? Parkhurst Road and the new UK planning policy environment', *Journal of Property Research*, 36(4), pp. 367–386.

David, P.A. (1985) 'Clio and the Economics of QWERTY', *The American Economic Review*, 75(2), pp. 332–337.

Delgado, G. (2012) 'Towards Dialectic Utopias: Links and Disjunctions between Collaborative Housing and Squatting in the Netherlands', *Built Environment*, pp. 430–442. Available at: https://doi.org/10.2148/benv.38.3.430.

Department for Levelling Up, Housing and Communities (2015) *Technical housing standards – nationally described space standard*. Department for Communities and Local Government. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1012976/160519_Nationally_Described_Space_Standard.pdf.

Department for Levelling Up, Housing and Communities (2017) *Fixing our broken housing market*. cm 9352. UK Department for Communities and Local Government. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/590464/Fixing_our_broken_housing_market_-_print_ready_version.pdf.

Department for Levelling Up, Housing and Communities (2020) *Building Safety Bill (Draft)*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/906737/Draft_Building_Safety_Bill_Web_Accessible.pdf.

Department for Levelling Up, Housing and Communities (2022) *A fairer private rented sector*. Department for levelling up, housing and communities. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1083381/A_fairer_private_rented_sector_print.pdf.

Devlin, P., Douglas, R. and Reynolds, T. (2015) 'Collaborative design of Older Women's CoHousing', *Working with Older People*, 19(4), pp. 188–194.

Dorling, D. (2014) *All That Is Solid: How the Great Housing Disaster Defines Our Times, and What We Can Do About It*. Penguin UK.

Doxiadis, C.A. (1975) 'Action for human settlements', *Ekistics; reviews on the problems and science of human settlements*, 40(241), pp. 405–448.

Doyon, A. and Moore, T. (2019) 'The acceleration of an unprotected niche: The case of Nightingale Housing, Australia', *Cities* , 92, pp. 18–26.

Driver, J. (2014) 'The History of Utilitarianism', *The Stanford Encyclopaedia of Philosophy*. Winter 2014. Edited by E.N. Zalta. Metaphysics Research Lab, Stanford University. Available at: https://plato.stanford.edu/archives/win2014/entries/utilitarianism-history/.

Duffy, F. *et al.* (1998) 'Design for change: the architecture of DEGW'.

Embury, D.C. (2015) 'Action research in an online world', *Bradbury, The Sage handbook of action research*, pp. 522–535.

English Housing Survey (2020) *Headline Report, 2018-19*. MHCLG. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/860076/2018-19_EHS_Headline_Report.pdf.

English Housing Survey (2021) *English Housing Survey: Headline report, 2020-21*. DLHC. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1039214/2020-21_EHS_Headline_Report.pdf.

Epstein, D. (2019) *Range: Why generalists triumph in a specialized world*. Penguin.

Femenias, P. and Geromel, F. (2020) 'Adaptable housing? A quantitative study of contemporary apartment layouts that have been rearranged by end-users', *Journal of Housing and the Built Environment*, 35(2), pp. 481–505.

Fischer, J. and Guy, S. (2009) 'Re-interpreting Regulations: Architects as Intermediaries for Low-carbon Buildings', *Urban studies* , 46(12), pp. 2577–2594.

Forty, A. (2004) *Words and Buildings: A Vocabulary of Modern Architecture*. Thames & Hudson.

Foye, C. (2017) 'The Relationship Between Size of Living Space and Subjective Well-Being', *Journal of happiness studies*, 18(2), pp. 427–461.

Foye, C. (2020) 'Ethically-speaking, what is the most reasonable way of evaluating housing outcomes?', *Housing, Theory and Society*, pp. 1–17.

Foye, C., Clapham, D. and Gabrieli, T. (2018) 'Home-ownership as a social norm and positional good: Subjective wellbeing evidence from panel data', *Urban studies* , 55(6), pp. 1290–1312.

Frediani, A.A. (2021) *Cities for Human Development: A Capability Approach to City-making*. Practical Action Publishing.

Friedman, D. (1998) 'On economic applications of evolutionary game theory', *Journal of Evolutionary Economics*, 8, pp. 15–43.

Fulcher, M. (2015) 'Pocket Homes: Five practices have won an invited competition to design compact and affordable two-bedroom flats in London for developer Pocket', *Architects' Journal*, 241(2), pp. 22–27.

Gallent, N., Durrant, D. and Stirling, P. (2018) 'Between the unimaginable and the unthinkable: pathways to and from England's housing crisis', *The Town planning review*, 89(2), pp. 125–144.

Gamble, P. (2015) *Building in Inclusive Design: A modern housing perspective*. Viewpoint 71. Housing Learning and Improvement Network. Available at: https://www.housinglin.org.uk/_assets/Resources/Housing/Support_materials/Viewpoints/HLIN_Viewpoint71_Inclusive-Design.pdf.

Gans, D. and Corbusier, L. (2006) *The Le Corbusier Guide*. Princeton Architectural Press.

Geraghty, B. (2015) 'Livinhome by Geraghty Taylor Architects', *Architects' Journal* [Preprint]. Available at: https://www.architectsjournal.co.uk/buildings/livinhome-by-geraghty-taylor-architects.

Gibbons, E. and Wilson, J. (2010) *Leasehold Enfranchisement Explained*. RICS.

Glaeser, E.L. and Gottlieb, J.D. (2006) 'Urban Resurgence and the Consumer City', *Urban studies* , 43(8), pp. 1275–1299.

Glaser, B.G. and Strauss, A.L. (1967) *The discovery of grounded theory: Strategies for qualitative research*. New Brunswick USA & London UK: Aldine Transaction.

Glass, A.P. (2012) 'Elder Co-Housing in the United States: Three Case Studies', *Built Environment*, pp. 345–363. Available at: https://doi.org/10.2148/benv.38.3.345.

Goldstein, B., Gounaridis, D. and Newell, J.P. (2020) 'The carbon footprint of household energy use in the United States', *Proceedings of the National Academy of Sciences of the United States of America*, 117(32), pp. 19122–19130.

Gompertz, S. (2018) 'Moving home is 'becoming a rarity', *BBC*, 27 March. Available at: https://www.bbc.co.uk/news/business-43541990.

Gordon, A. (1972) 'Designing for survival: the President introduces his long life / loose fit / low energy study', *Royal Institute of British Architects Journal*, 79(9), pp. 374–376.

Government Digital Service (2020) *Affordable home ownership schemes*, *www.gov.uk*. GOV.UK. Available at: https://www.gov.uk/affordable-home-ownership-schemes/shared-ownership-scheme (Accessed: 28 May 2020).

Gratton, L. and Scott, A. (2020) *The 100-Year Life: Living and Working in an Age of Longevity*. Bloomsbury Publishing.

Green, S.D. and Schweber, L. (2008) 'Forum Theorizing in the context of professional practice: the case for middle-range theories', *Building Research and Information*, 36(6), pp. 649–654.

Grimwood, G.G. (2022) *Planning for the Future: Planning policy changes in England in 2020 and future reforms*. 8981. House of Commons Library. Available at: https://researchbriefings.files.parliament.uk/documents/CBP-8981/CBP-8981.pdf.

Groak, S. (2002) *The Idea of Building: Thought and Action in the Design and Production of Buildings*. Taylor & Francis.

Grylls, G. (2019) 'Jam today', *RIBA Journal*, (September 2019), pp. 20–26.

Gustafsson, M. and McCurdy, C. (2020) *Risky business: Economic impacts of the coronavirus crisis on different groups of workers*. Resolution Foundation. Available at: https://www.resolutionfoundation.org/app/uploads/2019/10/Risky-business.pdf.

Guy, S. and Henneberry, J. (2000) 'Understanding Urban Development Processes: Integrating the Economic and the Social in Property Research', *Urban studies* , 37(13), pp. 2399–2416.

Habraken, N.J. (1972) *Supports: An Alternative to Mass Housing*. London: Architectural Press.

Habraken, N.J. (2000) *The Structure of the Ordinary: Form and Control in the Built Environment*. MIT Press.

Hamiduddin, I. and Gallent, N. (2016) 'Self-build communities: the rationale and experiences of group-build (Baugruppen) housing development in Germany', *Housing Studies*, 31(4), pp. 365–383.

Harris, J. (2021) *Health and wellbeing in the UK private rented sector: Enhancing capabilities*. UK Collaborative Centre for Housing Evidence.

Harris, J.H. and McKee, K. (2021) *Health and wellbeing in the UK private rented sector: Enhancing capabilities*. UK Collaborative Centre for Housing Evidence. Available at: https://housingevidence.ac.uk/wp-content/uploads/2021/07/HW-in-PRS-Part-2-final.pdf.

Harsanyi, J.C. (1977) 'Morality and the Theory of Rational Behavior', *Social research*, 44(4), pp. 623–656.

Healthy Homes Act (2021). Available at: https://edm.parliament.uk/early-day-motion/58026/healthy-homes-act.

Heath, S. *et al.* (2017) *Shared housing, shared lives: Everyday experiences across the lifecourse*. Routledge.

Hertzberger, H. (2005) *Lessons for Students in Architecture*. Translated by I. Rike. 010 Publishers.

Hertzberger, H. (2015) *Architecture and Structuralism: The Ordering of Space*. Nai010 publishers.

Hertz, N. (2021) *The lonely century: how to restore human connection in a world that's pulling apart*. Currency.

Heywood, A. (2016) *Local housing, community living: prospects for scaling up and scaling out community-led housing*. London: Smith Institute. Available at: http://www.smith-institute.org.uk/wp-content/uploads/2016/02/local-housing-community-living.pdf.

Hilber, C.A.L. and Lyytikäinen, T. (2017) 'Transfer taxes and household mobility: Distortion on the housing or labor market?', *Journal of Urban Economics*, pp. 57–73. Available at: https://doi.org/10.1016/j.jue.2017.06.002.

Hilber, C.A.L. and Vermeulen, W. (2016) 'The Impact of Supply Constraints on House Prices in England', *Economic Journal*, 126(591), p. 405.

Hill, S. (2017) *Hope for Housing*, *Power to Change*. Available at: https://www.powertochange.org.uk/blog/hope-for-housing/ (Accessed: 2020).

HM Treasury (2018) *The Green Book: Central government guidance on appraisal and evaluation*. HM Treasury. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938046/The_Green_Book_2020.pdf.

Hodson, M. and Marvin, S. (2010) 'Urbanism in the anthropocene: Ecological urbanism or premium ecological enclaves?', *Cityscape* , 14(3), pp. 298–313.

Holliss, F. (2021) 'Working from Home', *Built environment*, 47(3), pp. 367–379.

Holliss, F. and Barac, M. (2021) *Housing Space Use in the Pandemic and After: The Case For New Design Guidance*. London Metropolitan University. Available at: https://www.workhomeproject.org/documents/1/WORKHOME_SPACE_STANDARDS_Holliss-Barac-LondonMet.pdf.

Homes (Fitness for Human Habitation) Act 2018 (2018). Available at: https://www.legislation.gov.uk/ukpga/2018/34/enacted.

Honoré, T. (1987) 'Making law bind: essays legal and philosophical/Tony Honoré'. Oxford: Clarendon Press.

Horn, G. (2019) *Unpopular Taste: Formulating a Framework for Discussing Taste with Reference to English Volume-Built Housing and the Schism in Taste Between the Lay Public and the Architectural Elite*. Edited by F. Samuel. PhD. University of Sheffield. Available at: https://etheses.whiterose.ac.uk/25483/ (Accessed: 30 July 2022).

Hudson, J. *et al.* (2021) '"A slow build-up of a history of kindness": exploring the potential of community-led housing in alleviating loneliness', *Sustainability: Science Practice and Policy*, 13(20), p. 11323.

Hudson, N. (2022) 'What would a UK housing crash look like today?', *Financial Times*, 19 October. Available at: https://www.ft.com/content/be11c70b-cc3d-418f-999f-74ac218051ee.

Hudson, N. and Green, B. (2017) *Missing Movers: A Long-Term Decline in Housing Transactions?* Council for Mortgage Lenders. Available at: https://thinkhouse.org.uk/site/assets/files/1756/cmlmissing.pdf.

Hughes, C. *et al.* (2020) 'Implementing a land value tax: Considerations on moving from theory to practice', *Land use policy*, 94, p. 104494.

Imrie, R. and Street, E. (2009) 'Risk, Regulation and the Practices of Architects',

Urban studies , 46(12), pp. 2555–2576.

Instinctively Green (viewed 2020) *Instinctively Green*, *K1 Cohousing Project*. Available at: http://www.instinctivelygreen.co.uk/case-studies/cambridge-k1-cohousing-project (Accessed: 15 September 2020).

'Interview with Miranda at K1 Cohousing' (2015) *Available via: http://www.cambridge-k1.co.uk/*. BBC Radio Cambridge. Available at: https://doi.org/10.1007/978-1-4842-3849-3_3.

Jackson, B. (2012) 'Property-Owning Democracy: A short history', in M. O'Neill and T. Williamson (eds) *Property-Owning Democracy: Rawls and beyond*. Wiley Blackwell, pp. 33–52.

Jackson, T. (2009) *Prosperity without growth: Economics for a finite planet*. Routledge.

Jacobs, J. (1961) *The Death and Life of Great American Cities*. Random House.

Jane, W.S. and Sayce, S. (2020) 'Decarbonising real estate: The evolving relationship between energy efficiency and housing in Europe', *Journal of European Real Estate Research*, 13(3), pp. 387–408.

Jarvis, H. (2011) 'Saving Space, Sharing Time: Integrated Infrastructures of Daily Life in Cohousing', *Environment & planning A*, 43(3), pp. 560–577.

Jarvis, H. (2015) 'Towards a deeper understanding of the social architecture of co-housing: evidence from the UK, USA and Australia', *Urban Research & Practice*, pp. 93–105. Available at: https://doi.org/10.1080/17535069.2015.1011429.

Jarvis, H. *et al.* (2016) *CoHousing: Shared Futures*. ESRC Collaborative Housing and Community Resilience. Available at: https://eprints.lancs.ac.uk/id/eprint/80214/1/Cohousing_shared_futures_FINAL_web.pdf.

Jarvis, H. (2019) 'Sharing, togetherness and intentional degrowth', *Progress in Human Geography*, pp. 256–275. Available at: https://doi.org/10.1177/0309132517746519.

Jarvis, H. and Bonnett, A. (2013) 'Progressive Nostalgia in Novel Living Arrangements: A Counterpoint to Neo-traditional New Urbanism?', *Urban studies* , 50(11), pp. 2349–2370.

Jones, C. and Coombes, M. (2013) 'An Assessment of Tenure-Specific Housing Market Areas for Housing Planning', *Housing Studies*, pp. 993–1011. Available at: https://doi.org/10.1080/02673037.2013.783201.

Joseph Rowntree Foundation (2022a) 'Additional 400,000 people pulled into

poverty by mortgage rates of 5.5%', 4 November. Available at: https://www.jrf.org.uk/press/additional-400000-people-pulled-poverty-mortgage-rates-55.

Joseph Rowntree Foundation (2022b) *UK Poverty 2022: The essential guide to understanding poverty in the UK*. Joseph Rowntree Foundation. Available at: https://www.jrf.org.uk/file/58886/download?token=8bgbK-4t&filetype=full-report.

Kemp, P.A. and Keoghan, M. (2001) 'Movement Into and Out of the Private Rental Sector in England', *Housing Studies*, 16(1), pp. 21–37.

Kendall, S.H. (2021) *Residential Architecture as Infrastructure: Open Building in Practice*. Routledge.

Kendall, S.H. and Teicher, J. (2010) *Residential Open Building*. Routledge.

Kimhur, B. (2020) 'How to Apply the Capability Approach to Housing Policy? Concepts, Theories and Challenges', *Housing, Theory and Society*, 37(3), pp. 257–277.

King, P. (2004) *Private dwelling: contemplating the use of housing*. Routledge.

King, P. (2008) *In dwelling: implacability, exclusion and acceptance*. Oxon.: Ashgate.

Köppe, S. (2017) 'Britain's new housing precariat: housing wealth pathways out of homeownership', *International Journal of Housing Policy*, 17(2), pp. 177–200.

LaFond, M. and Tsvetkova, L. (2017) *CoHousing Inclusive: Self-organized, community-led housing for all*. Berlin: Jovis.

Larsen, H.G. (2019) 'Three phases of Danish cohousing: tenure and the development of an alternative housing form', *Housing Studies*, pp. 1349–1371. Available at: https://doi.org/10.1080/02673037.2019.1569599.

Law Commission (2020) *Leasehold home ownership: exercising the right to manage report*. Law Commission. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1041107/RTM-Report-final-N5.pdf.

Lawson, V. *et al.* (2022) *Public participation in planning in the UK: A review of the literature*. UK Collaborative Centre for Housing Evidence. Available at: https://housingevidence.ac.uk/wp-content/uploads/2022/04/220406-Public-participation-in-planning-in-the-UK_v3.pdf.

Layard, A. (2019) 'Privatising Land in England', *Journal of Property, Planning and Built Environment Law*. Available at: https://doi.org/10.2139/ssrn.3379677.

LB Waltham Forest (2020) *Minutes of the planning committee*. Available at:

https://democracy.walthamforest.gov.uk/documents/g5091/Public%20reports%20pack%2007th-Jul-2020%2019.00%20Planning%20Committee.pdf?T=10&utm_content=&utm_medium=email&utm_name=&utm_source=govdelivery&utm_term=.

Leasehold Reform (Ground Rent) Act 2022: Chapter 1 (2022). Available at: https://www.legislation.gov.uk/ukpga/2022/1/pdfs/ukpga_20220001_en.pdf.

Lees, L. and Warwick, E. (2022) *Defensible Space on the Move: Mobilisation in English Housing Policy and Practice*. John Wiley & Sons.

Lehavi, A. (2008) 'Mixing property', *Seton Hall law review* [Preprint]. Available at: https://heinonline.org/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/shlr38&section=8.

Leunig, T. (2011) *Community land auctions; Working towards implementation*. Centre Forum. Available at: https://www.bl.uk/britishlibrary/~/media/bl/global/social-welfare/pdfs/non-secure/c/o/m/community-land-auctions-working-towards-implementation.pdf.

Leupen, B., Heijne, R. and van Zwol, J. (eds) (2005) *Time-based architecture*. Rotterdam: 010 Publishers.

Levitt, D. and McCafferty, J. (2018) *The Housing Design Handbook: A Guide to Good Practice*. Routledge.

Lietaert, M. (2010) 'Cohousing's relevance to degrowth theories', *Journal of Cleaner Production*, pp. 576–580. Available at: https://doi.org/10.1016/j.jclepro.2009.11.016.

Lloyds Bank (2017) *Almost one in three Second Steppers need financial support*. Press Release. Lloyds Bank. Available at: https://www.lloydsbank.com/assets/media/pdfs/press-releases/2017/170624-second-steppers-press-release.pdf.

Mackintosh, S. (2020) 'Putting Home Adaptations on the Policy Agenda in England', *Journal of Aging and Environment*, 34(2), pp. 126–140.

Manzi, T. and Smith-Bowers, B. (2005) 'Gated Communities as Club Goods: Segregation or Social Cohesion?', *Housing Studies*, 20(2), pp. 345–359.

Mayor of London (2017) *The 2017 London Strategic Housing Market Assessment - Part of the London Plan evidence base*. Greater London Authority. Available at: https://www.london.gov.uk/sites/default/files/london_shma_2017.pdf.

Mazzucato, M. (2019) *The Value of Everything: Making and taking in the global economy*. Penguin.

McCall, V. (2022) 'Inclusive Living: ageing, adaptations and future-proofing

homes', *Buildings and Cities* [Preprint]. Available at: https://journal-buildingscities.org/articles/10.5334/bc.173/galley/229/download/.

McGlynn, S. (1993) 'Reviewing the rhetoric', in R. Hayward and S. McGlynn (eds) *Making Better Places: Urban Design Now*. Elsevier, pp. 3–9.

McGrath, K. *et al.* (2020) 'The Future of Real Estate Education: A Multi-Faceted Perspective', *Journal of Real Estate Practice and Education*, 22(1), pp. 40–55.

McLaren, D. and Agyeman, J. (2015) *Sharing Cities: A Case for Truly Smart and Sustainable Cities*. MIT Press.

Meen, G. (2013) 'Homeownership for Future Generations in the UK', *Urban studies* , 50(4), pp. 637–656.

Meen, G. (2018) *How should housing affordability be measured*. UK Collaborative Centre for Housing Evidence. Available at: http://housingevidence.ac.uk/wp-content/uploads/2018/09/R2018_02_01_How_to_measure_affordability.pdf.

Meen, G. (2019) *Tackling the UK housing crisis: is supply the answer? Peer review comments*. UK Collaborative Centre for Housing Evidence.

Meen, G. and Whitehead, C. (2020a) *Understanding affordability*. Bristol University Press.

Meen, G. and Whitehead, C. (2020b) *Understanding Affordability: The Economics of Housing Markets*. Bristol University Press.

MHCLG (2019) *Permitted Development Rights for Householders: Technical Guidance*. Ministry of Housing, Communities & Local Government.

MHCLG (2020) *English Housing Survey, Headline Report 2018-19*. Office for National Statistics. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/860076/2018-19_EHS_Headline_Report.pdf.

MHCLG (2021) *National Planning Policy Framework*. Ministry of Housing, Communities and Local Government. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf.

'Micro-homes: Part of the solution or part of the problem' (2015) *Architects' Journal*, pp. 10–11.

Miles, D. (2015) 'Housing, Leverage, and Stability in the Wider Economy', *Journal of Money, Credit and Banking*, 47(1), pp. 19–36.

Morrow-Jones, H.A. and Wenning, M.V. (2005) 'The Housing Ladder, the Housing Life-cycle and the Housing Life-course: Upward and Downward Movement among Repeat Home-buyers in a US Metropolitan Housing Market', *Urban Studies*, pp. 1739–1754. Available at: https://doi.org/10.1080/00420980500231647.

Muellbauer, J. (2018) 'Housing, debt and the economy: a tale of two countries', *National Institute economic review*, 245, pp. R20–R33.

Mulheirn, I. (2019) *Tackling the housing crisis: Is supply the answer?* UK Collaborative Centre for Housing Evidence. Available at: https://housingevidence.ac.uk/wp-content/uploads/2019/08/20190820b-CaCHE-Housing-Supply-FINAL.pdf.

Nanda, A. *et al.* (2021) 'Forced homeward: The COVID-19 implications for housing', *The Town planning review*, 92(1), pp. 25–31.

NatCen (2020) *Unresolved public policy challenges*. Office for National Statistics; Understanding Society; NatCen Social Research. Available at: http://www.natcen.ac.uk/media/1862834/NatCen_Unresolved_Public_Policy_Challenges.pdf.

Nationwide (07/2019) *House Price Index*. Available at: https://www.nationwide.co.uk/-/media/MainSite/documents/about/house-price-index/2019/Jul_2019.pdf.

Newman, O. (1973) *Defensible space: Crime prevention through urban design*. Collier Books New York.

Nussbaum, M. (2003) 'Capabilities as fundamental entitlements: Sen and social justice', *Feminist economics*, 9(2-3), pp. 33–59.

Nussbaum, M.C. (2011) *Creating Capabilities: The human development approach*. Cambridge, Massachusetts: Harvard University Press.

Ong ViforJ, R. *et al.* (2021) 'Tenure transitions at the edges of ownership: Reinforcing or challenging the status quo?', *Environment & planning A*, 53(8), pp. 1993–2011.

ONS (2017) *Childbearing for women born in different years, England and Wales: 2017*. Office for National Statistics. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/conceptionandfertilityrates/bulletins/childbearingforwomenbornindifferentyearsenglandandwales/2017.

ONS (2019) *Childbearing for women born in different years, England and Wales: 2018*. Office for National Statistics. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarri

ages/conceptionandfertilityrates/bulletins/childbearingforwomenbornindifferentyearsenglandandwales/2018.

ONS (2022) *Energy prices and their effect on households*, *Office for National Statistics*. Available at: https://www.ons.gov.uk/economy/inflationandpriceindices/articles/energypricesandtheireffectonhouseholds/2022-02-01 (Accessed: 8 March 2022).

Oosterlaken, I. (2009) 'Design for development: A capability approach', *Design issues*, 25(4), pp. 91–102.

Ostrom, E. (2015) *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press.

Park, J. (2017) *One hundred years of housing space standards: What now?* www.housingspacestandards.co.uk.

Parvin, A. (2016) 'Housing without debt: Our flawed housing economy, and what we can do about it', *Medium*, 16 February. Available at: https://medium.com/@AlastairParvin/housing-without-debt-5ae430b5606a.

Pelsmakers, S. (2019) *The Environmental Design Pocketbook*. Routledge.

Pelsmakers, S.L.J. (2016) *Pre-1919 suspended timber ground floors in the UK: estimating in-situ U-values and heat loss reduction potential of interventions*. Edited by C. Elwell, B. Croxford, and D. Shipworth. Doctoral. UCL (University College London). Available at: https://discovery.ucl.ac.uk/id/eprint/1505859/ (Accessed: 30 July 2022).

Pelsmakers, S., Poutanen, J. and Saarimaa, S. (2020) '(Hybrid) architecture in and over time', in M.P. Zari, P. Connolly, and M. Southcombe (eds) *Ecologies Design: Transforming Architecture, Landscape, and Urbanism*. Oxford & New York: Routledge, pp. 268–275.

Pelsmakers, S. and Warwick, E. (2021) 'Call for Papers: special issue on housing adaptability', *Buildings and Cities* [Preprint]. Available at: https://www.buildingsandcities.org/media/pdf/BCCFPHousingadaptability.pdf.

Peters, T. and Masoudinejad, S. (2022) 'Balconies as adaptable spaces in apartment housing', *Buildings and Cities*, 3(1), pp. 265–278.

Pickford, J. (2021) 'Home movers overtake first-time buyers to drive housing market', *Financial Times*, 4 June. Available at: https://www.ft.com/content/822c7abf-2697-4576-b9e1-beb7d7659f52#comments-anchor.

Pinder, J., Iii, R.S. and Saker, J. (2013) 'Stakeholder perspectives on developing more adaptable buildings', *Construction Management and Economics*, 31(5), pp.

440–459.

Pocket Design (2020) *Pocket Living*. Available at: https://www.pocketliving.com/design (Accessed: 19 April 2020).

Pocket Living (2015) *Marcon Place, Hackney E8, Floor Plans*. Available at: https://www.pocketliving.com/bucket/pocket/developments/current/1_54f5892131dd1.pdf.

Pocket Living (2018a) *Ground breaking partnerships*, *Pocket Living*. Available at: https://www.pocketliving.com/about/partners (Accessed: 13 June 2020).

Pocket Living (2018b) *Press release: Ground-breaking new scheme, backed by Mayor, for first-time buyers in Southwark*, *Pocket Living*. Available at: https://www.pocketliving.com/news/pressrelease/22 (Accessed: 13 June 2020).

Pocket Living (2018c) *TfL announce partnership with Pocket Living to build affordable homes for first time buyers*, *Pocket Living*. Available at: https://www.pocketliving.com/news/pressrelease/23 (Accessed: 24 May 2020).

Pocket Living (2019) 'Varcoe Road, SE16: Discounted homes for city makers'. Available at: https://www.pocketliving.com/bucket/pocket/developments/current/27_5d1a35d10f51f.pdf.

Pocket Living (2020a) 'Bollo Lane: Sales brochure'. Available at: https://www.pocketliving.com/bucket/pocket/developments/current/26_5c8a87f2d4ccd.pdf.

Pocket Living (2020b) *Our Story*, *Pocket Living*. Available at: https://www.pocketliving.com/about/pocket (Accessed: 18 April 2020).

Pocket Living (2020c) *Owning an affordable Pocket home*, *Pocket Living*. Available at: https://www.pocketliving.com/buying/pocket-homes (Accessed: 27 May 2020).

Pocket Living (2020d) *Pocket - Frequently Asked Questions*, *Pocket Living*. Available at: https://www.pocketliving.com/buying/faqs (Accessed: 14 June 2020).

Pocket Living (2021) *Owning the future: First-time buyers and the health of the nation*. Available at: https://www.pocketliving.com/bucket/pocket/documents/Pocket_Owning_The_Future_Document_01.10.21_03_615741ee431b8.pdf.

Pocket Living (2022a) *Our Developments*, *Pocket Living*. Available at: https://www.pocketliving.com/projects (Accessed: 2022).

Pocket Living (2022b) *Support more homes*, *Pocket Living*. Available at: https://www.pocketliving.com/buying/support-more-homes (Accessed: June 25

2022).

Preece, J. *et al.* (2020) 'Understanding changing housing aspirations: a review of the evidence', *Housing Studies*, 35(1), pp. 87–106.

Preece, J. *et al.* (2021) 'Urban rhythms in a small home: COVID-19 as a mechanism of exception', *Urban studies* [Preprint]. Available at: https://doi.org/10.1177/00420980211018136.

Public Services (Social Value) Act 2012 (2012). Available at: https://www.legislation.gov.uk/ukpga/2012/3.

Rabeneck, Sheppard and Town (1974) 'Housing: Flexibility/Adaptability', *Architectural design*, 44(2), pp. 76–91.

Ravasi, D. (2021) *Theorizing from qualitative: case studies*. UK: UCL School of Management, University College London. Available at: https://www.youtube.com/watch?v=YtOAkmeaKrM.

Read, D., MacDonald, R. and He, L. (2018) 'Intertemporal Choice: Choosing for the Future', in A. Lewis (ed.) *The Cambridge Handbook of Psychology and Economic Behaviour*. Cambridge University Press, pp. 167–197.

Reason, P. and Bradbury, H. (2001) *Handbook of Action Research: Participative Inquiry and Practice*. SAGE.

Resolution Foundation (2018) *A New Generational Contract: The Final Report of the Intergenerational Commission*. Intergenerational Commission. Available at: https://www.resolutionfoundation.org/app/uploads/2018/05/A-New-Generational-Contract-Full-PDF.pdf.

Reynolds, D. (2013) *The Long Shadow: The Great War and the Twentieth Century*. Simon and Schuster.

RIBA (2020) 'RIBA plan of work 2020 overview'. Royal Institute of British Architects (RIBA), London. Available at: https://riba-prd-assets.azureedge.net/-/media/GatherContent/Business-Benchmarking/Additional-Documents/2020RIBAPlanofWorkoverviewpdf.pdf?rev=4fb72169b1fd4e52a164bdd5f9aa202a.

RICS (2019) *RICS professional standards and guidance, global: Valuation of development property*. 1st edn. Royal Institute of Chartered Surveyors. Available at: https://www.rics.org/globalassets/valuation-of-development-property---first-edition.pdf.

Roberts-Hughes, R. (2011) *The case for space: The size of England's new homes*. RIBA. Available at:

https://www.architecture.com/-/media/gathercontent/space-standards-for-homes/additional-documents/ribacaseforspace2011pdf.pdf.

Robeyns, I. (2005) 'The Capability Approach: a theoretical survey', *Journal of Human Development*, 6(1), pp. 93–117.

Robeyns, I. (2019) 'What, if Anything, is Wrong with Extreme Wealth?', *Journal of Human Development and Capabilities*, 20(3), pp. 251–266.

Roth, A.E. (2015) *Who Gets What -- and Why: The New Economics of Matchmaking and Market Design*. Houghton Mifflin Harcourt.

Russell, B. (1935) 'In Praise of Idleness. In praise of Idleness and other Essays'. Taylor and Francis, Psychology Press, Abingdon (repr. 2004). Available at: https://ia801603.us.archive.org/24/items/in.ernet.dli.2015.458601/2015.458601.In-Praise-Of-Idleness-And-Other-Essays_text.pdf.

Ryan-Collins, J., Lloyd, T. and Macfarlane, L. (2017) *Rethinking the Economics of Land and Housing*. Zed Books Ltd.

Saarimaa and Pelsmakers (2020) 'Better living environment today, more adaptable tomorrow? Comparative analysis of Finnish apartment buildings and their adaptable scenarios', *Yhdyskuntasuunnittelu (The Finnish Journal of Urban Studies)*, 58(2), pp. 33–58.

Sampson, R.J. (2010) 'Eliding the Theory/Research and Basic/Applied Divides', in R.K. Marton (ed.) *Sociology of Science and Sociology as Science*. Columbia University Press, pp. 63–78.

Samuel, F. (2018) *Why Architects Matter: Evidencing and Communicating the Value of Architects*. Routledge.

Samuel, F. (2020a) *Impact of housing design and placemaking on social value and wellbeing in the pandemic*. UK Collaborative Centre for Housing Evidence. Available at: https://housingevidence.ac.uk/wp-content/uploads/2020/10/Impact-of-housing-design-and-placemaking-Final-30.10.2020.pdf.

Samuel, F. (2020b) 'RIBA social value toolkit for architecture'. Available at: http://centaur.reading.ac.uk/91970/2/RIBAUoR%20Social%20Value%20Toolkit%202020pdf.pdf.

Samuel, F. (2023) *Housing for hope and wellbeing*. Abingdon: Routledge.

Sandilands, L.D. (2015) *Paradise gardens*, *Lifschutz Davidson Sandilands*. Available at: https://lds-uk.com/projects/residential/paradise-gardens/ (Accessed: 5 June 2022).

Sardar, Z. (2010) 'Welcome to postnormal times', *Futures*, 42(5), pp. 435–444.

Sargisson, L. (2012) 'Second-Wave Cohousing', *Utopian studies*, 23(1), p. 28.

Savills (2019) *Marmalade Lane: Building a shared future*, *www.savills.com*. Available at: https://assets.savills.com/properties/GBCARDCAD180394/CAD180394_CAD19001203.PDF (Accessed: 26 May 2020).

Savills (2020) *Marmalade Lane*, *www.savills.com*. Available at: https://search.savills.com/property-detail/gbcardcad180394 (Accessed: 26 May 2020).

Savills (2021) *Cambridge: Thriving on Innovation*. Available at: https://pdf.euro.savills.co.uk/uk/spotlight-on/cambridge---thriving-on-innovation.pdf.

Sayce, S. *et al.* (2009) 'Greening leases: Do tenants in the United Kingdom want green leases?', *Journal of Retail & Leisure Property*, 8(4), pp. 273–284.

Sayce, S. *et al.* (2017) *Viability and the planning system: the relationship between economic viability testing, land values and affordable housing in London*. Kingston University, Ramidus, Royal Agricultural University, University of Reading. Available at: https://www.towerhamlets.gov.uk/Documents/London_Viability/Research_Viability_and_the_Planning_System_Research_January_2017.pdf.

Scanlon, K. and Arrigoitia, M.F. (2015) 'Development of new cohousing: lessons from a London scheme for the over-50s', *Urban Research & Practice*, 8(1), pp. 106–121.

Scanlon, K., White, T. and & Blanc, F. (2018) *Residents' experience of high-density housing in London*. LSE. Available at: https://www.london.gov.uk/sites/default/files/residents_experience_of_high-density_housing_in_london_lse_-_final_report_july_2018.pdf.

Schmid, S. *et al.* (eds) (2019) *A History of Collective Living: Models of Shared Living*. Berlin, Basel: Birkhäuser.

Schmidt, R., III *et al.* (2010) 'What is the meaning of adaptability in the building industry?', in J.A. Chica et al. (eds) *Open and Sustainable Building*. *16th International Conference on 'Open and Sustainable Building'*, pp. 233–242.

Schneider, T. and Till, J. (2005) 'Flexible housing: Opportunities and limits', *Architectural Research Quarterly*, 9(2), pp. 157–166.

Schneider, T. and Till, J. (2007) *Flexible housing*. London: Architectural Press.

Schultz, J. (2012) *Analysing your interviews* [Video]. UK: Southampton Education School. Available at: https://www.youtube.com/watch?v=59GsjhPolPs.

Scotland (2012) *The Property Factors (Scotland) Act 2011 (Modification) Order 2012*. Stationery Office.

Scruton, R. *et al.* (2020) *Living with beauty: Promoting health, well-being and sustainable growth*. Building Better, Building Beautiful Commission. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/861832/Living_with_beauty_BBBBC_report.pdf.

Self-Build and Custom Housebuilding Act 2015 (2015). Available at: https://www.legislation.gov.uk/ukpga/2015/17/pdfs/ukpga_20150017_en.pdf.

Sen, A.K. (1995) *Inequality Reexamined*. Harvard University Press.

Sen, A.K. (2010) *The Idea of Justice*. Penguin Books.

Serin, B. *et al.* (2018) *Design value at neighbourhood scale: What does it mean and how do we measure it?* UK Collaborative Centre for Housing Evidence.

Sharam, A. *et al.* (2018) *Matching markets in housing and housing assistance*.

Sharam, A. (2020) '"Deliberative development": Australia's Baugruppen movement and the challenge of greater social inclusion', *Housing Studies*, 35(1), pp. 107–122.

Sharam, A. and Bryant, L. (2017) 'The uberisation of housing markets: putting theory into practice', *Property Management*, 35(2), pp. 202–216.

Sharam, A., Bryant, L. and Alves, T. (2015) 'De-risking development of medium density housing to improve housing affordability and boost supply', *Australian Planner*, 52(3), pp. 210–218.

Sharam, A., Bryant, L. and Alves, T. (2015) 'Identifying the financial barriers to deliberative, affordable apartment development in Australia', *International Journal of Housing Markets and Analysis*, 8(4), pp. 471–483.

Shelter (2016) *Living home standard*. Shelter. Available at: https://assets.ctfassets.net/6sxvmndnpn0s/5KR1ksNEZBqZ1M5UBjychd/7ddcdc92fd4d09b054abfebbf781ad54/FINAL_Living_home_standard_report.pdf.

Shields, L. (2012) 'The Prospects for Sufficientarianism', *Utilitas*, pp. 101–117. Available at: https://doi.org/10.1017/s0953820811000392.

Simms, B. (2006) *Eric Lyons & Span*. Riba Publications Limited.

Simon, C.J. (2019) 'Migration and career attainment of power couples: the roles of city size and human capital composition', *Journal of Economic Geography*, pp. 505–534. Available at: https://doi.org/10.1093/jeg/lby009.

Simon, H.A. (1978) 'Rational Decision-making in Business Organizations'. *Nobel*

Memorial Lecture, 8 December, 1978, Nobel Media AB. Available at: https://www.nobelprize.org/uploads/2018/06/simon-lecture.pdf.

Simon, H.A. (1990) 'Bounded Rationality', in J. Eatwell, M. Milgate, and P. Newman (eds) *Utility and Probability*. London: Palgrave Macmillan UK, pp. 15–18.

Smektała, M. and Baborska-Narożny, M. (2022) 'The use of apartment balconies: context, design and social norms', *Buildings and Cities*, 3(1), p. 134.

Smith, J.M. and Price, G.R. (1973) 'The Logic of Animal Conflict', *Nature*, 246(5427), pp. 15–18.

Smith, S.J. (2015) 'Owner occupation: at home in a spatial, financial paradox', *International Journal of Housing Policy*, 15(1), pp. 61–83.

Smith, S., Whitehead, C. and Williams, P. (2013) *A role for equity finance in UK housing markets*. Joseph Rowntree Foundation. Available at: https://www.jrf.org.uk/file/44043/download?token=-z273Vl9&filetype=full-report.

Solari, C.D. and Mare, R.D. (2012) 'Housing crowding effects on children's wellbeing', *Social science research*, 41(2), pp. 464–476.

South Cambridgeshire District Council (2011) *Local Development Framework: Orchard Park Design Guidance Supplementary Planning Document (Adopted March 2011)*. South Cambridgeshire District Council. Available at: https://www.scambs.gov.uk/media/9821/orchard-park-design-guidance-spd.pdf.

South Cambridgeshire District Council (2020) 'Section 106 Agreement - S/3223/15/FL (Parcel K1, Orchard Park)'. Available at: https://applications.greatercambridgeplanning.org/online-applications/files/6C0A684F718EF08218D44DE796D833F4/pdf/S_3223_15_FL-SECTION_106_AGREEMENT-5425767.pdf.

Standing, G. (2011) *The Precariat: The New Dangerous Class*. Bloomsbury Academic.

Standing, G. (2014) 'The Precariat', *Contexts* , 13(4), pp. 10–12.

Standing, G. (2016) *The Corruption of Capitalism: Why rentiers thrive and work does not pay*. Biteback Publishing.

Stephens, M. *et al.* (2022) *UK Housing Review 2022*. Chartered Institute of Housing. Available at: https://www.cih.org/media/0zsndaj0/ukhr-2022-executive-summary.pdf.

Studio Weave (2018) *Living Closer: The many faces of co-housing*. Available at: https://issuu.com/studioweave/docs/living_closer_for_online_sharing_re (Accessed: 28 July 2022).

Swenarton, M. (2017) *Cook's Camden: The Making of Modern Housing*. Lund Humphries.

Sykes, C. (2012) *Leasehold Enfranchisement and the Right to Manage: A Practical Guide*. Law Society.

Taylor, P. (2022) *Developing a framework for describing, planning and evaluating empowerment in architectural making projects*. Edited by C. Vasilikou. PhD. University of Reading.

TCPA (2020) *The healthy homes bill*. Town and Country Planning Association. Available at: https://www.tcpa.org.uk/Handlers/Download.ashx?IDMF=3ecf26b8-a418-4bae-83d2-3ec1b624d3e6.

'The Oxford Handbook of Value Theory' (2015) in *The Oxford Handbook of Value Theory*. 1st edn. Oxford University Press.

Till, J. (2009) *Architecture Depends*. MIT Press.

Till, J. and Schneider, T. (2005) 'Flexible housing: the means to the end', *arq: Architectural Research Quarterly*, 9(3-4), pp. 287–296.

Town (2019a) *Marmalade Lane, a collective custom-build development in Cambridge*, *TOWN*. Available at: http://www.wearetown.co.uk/marmalade-lane/ (Accessed: 15 June 2020).

Town (2019b) *Our approach*, *TOWN*. Available at: https://www.wearetown.co.uk/about-town/ (Accessed: 23 September 2021).

Town (2019c) 'Town launches community partnering fund', *Town*, 31 October. Available at: http://www.wearetown.co.uk/town-launches-community-partnering-fund/ (Accessed: 25 May 2020).

Town (2020) *About*, *TOWN*. Available at: http://www.wearetown.co.uk/about-town/ (Accessed: 13 June 2020).

TOWNhus (2015a) 'K1 Cambridge Cohousing, Orchard Park Housing Statement - S/3223/15/FL'. Available at: https://applications.greatercambridgeplanning.org/online-applications/files/7CAF1A84E489E91183143D863B3F41A4/pdf/S_3223_15_FL-Housing_Statement-4501485.pdf.

TOWNhus (2015b) 'K1 Housing, Design & Access Statement - S/3223/15/FL'. Available at: https://applications.greatercambridgeplanning.org/online-applications/files/FFE11B3895223B2FD6B8D400178F669A/pdf/S_3223_15_FL-Design___Access_Statem

ent-4263558.pdf.

Transport for London (October 15, 2018) *TfL announce partnership with Pocket Living to build affordable homes for first-time buyers*, *Transport for London*. Available at: https://tfl.gov.uk/info-for/media/press-releases/2018/october/tfl-announce-partnership-with-pocket-living-to-build-affordable-homes-for-first-time-buyers (Accessed: 26 May 2020).

Trivselhus (2020) *Marmalade Lane - Cambridge's first cohousing community*, *Marmalade Lane*. Available at: https://marmaladelane.co.uk/ (Accessed: 14 June 2020).

Trivselhus, U.K. (2019) 'Press Release, Marmalade Lane Cohousing, Orchard Park, Cambridge'. Available at: https://marmaladelane.co.uk/uploads/MarmaladeLaneCohousing_Press_Release_30July2019.pdf.

Tummers, L. (2016) 'The re-emergence of self-managed co-housing in Europe: A critical review of co-housing research', *Urban studies* , 53(10), pp. 2023–2040.

Tunstall, R. (2015) 'Relative housing space inequality in England and Wales, and its recent rapid resurgence', *International Journal of Housing Policy*, 15(2), pp. 105–126.

Tunstall, R. (2020) *The Fall and Rise of Social Housing: 100 Years on 20 Estates*. Policy Press.

Tunstall, R. (2021) 'The deresidualisation of social housing in England: change in the relative income, employment status and social class of social housing tenants since the 1990s', *Housing Studies*, pp. 1–21.

UK Cohousing Network (2020) *Case Study: K1 – Cambridge Cohousing*, *UK Cohousing Network*. Available at: https://cohousing.org.uk/case-study/k1-cambridge-cohousing/ (Accessed: 12 June 2020).

UK Cohousing Network (2021) *About cohousing*, *UK Cohousing Network*. Available at: https://cohousing.org.uk/about-cohousing/ (Accessed: 18 August 2021).

Urbed (2021) *Quality of life framework*. Quality of Life Foundation. Available at: https://www.qolf.org/wp-content/uploads/2021/02/PD20-0742-QOLF-Framework_v09_LR.pdf.

Varoufakis, Y. (2002) 'Against Equality', *Science & Society*, 66(4), pp. 448–472.

Wainwright, O. (2019) 'Marmalade Lane: the car-free, triple-glazed, 42-house oasis', *The Guardian*, 8 May. Available at:

http://www.theguardian.com/artanddesign/2019/may/08/marmalade-lane-co-housing-cambridge (Accessed: 15 June 2020).

Warwick, E.J.P. (2015) *Defensible space as a mobile concept: the role of transfer mechanisms and evidence in housing research, policy and practice*. Edited by T. Butler and L. Conway Lees. Doctoral. King's College, London. Available at: https://kclpure.kcl.ac.uk/portal/files/45224699/2015_Warwick_Elanor_0641131_ethesis.pdf.

Waugh Thistleton Architects (no date) *Marcon Place: Flourishes within tight constraints*, *Waugh Thistleton Architects*. Available at: http://waughthistleton.com/marcon-place/ (Accessed: 24 May 2020).

Whitehead, C. (2012) 'The Neo-Liberal Legacy to Housing Research', in D.F. Clapham, W.A.V. Clark, and K. Gibb (eds) *The SAGE Handbook of Housing Studies*. London: SAGE, pp. 113–130.

Whitehead, C. (2018) 'Housing policy and the changing tenure mix', *National Institute Economic Review*, pp. R34–R39. Available at: https://doi.org/10.1177/002795011824500113.

Whitehead, C. and Williams, P. (2018) *Evaluation of the Help to Buy Equity Loan Scheme 2017*. Ministry of Housing Communities and Local Government. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/751359/Evaluation_of_the_Help_to_Buy_equity_loan_scheme_2017.pdf.

Whitehead, C. and Williams, P. (2019) *From ideas to reality: longer term tenancies and rent stabilisation - principles and practical considerations*. London School of Economics. Available at: https://thinkhouse.org.uk/site/assets/files/2314/rla-research-2-lse-london.pdf.

Whitehead, C. and Williams, P. (2020) *Thinking outside the box: Exploring innovations in affordable home ownership*. UK Collaborative Centre for Housing Evidence. Available at: https://housingevidence.ac.uk/wp-content/uploads/2020/11/Thinking-outside-the-box-Exploring-innovations-in-affordable-home-ownership-Final-for-publication-11.11.20.pdf.

White, J. *et al.* (2020) *Delivering design value in places and homes: The housing design quality conundrum*. UK Collaborative Centre for Housing Evidence. Available at: https://housingevidence.ac.uk/wp-content/uploads/2020/12/12506_CaCHE_Delivering_Design_Main_Report_IA-1.pdf.

Wilkinson, S., Sayce, S. and Christensen, P. (2015) *Developing Property Sustainably*. Routledge.

Wilson, R. (2020) ‘First Pocket Living development in Southwark completed by Maccreanor Lavington’, *Architects’ Journal* [Preprint]. Available at: https://www.architectsjournal.co.uk/buildings/first-pocket-living-development-in-southwark-completed-by-maccreanor-lavington.

Wilson, W. and Barton, C. (2021a) *Leasehold and commonhold reform*. 8047. House of Commons Library. Available at: https://researchbriefings.files.parliament.uk/documents/CBP-8047/CBP-8047.pdf.

Wilson, W. and Barton, C. (2021b) *The end of ‘no fault’ section 21 evictions (England)*. 08658. House of Commons Library. Available at: https://researchbriefings.files.parliament.uk/documents/CBP-8658/CBP-8658.pdf.

Wood, G.A. *et al.* (2017) ‘Life on the edge: a perspective on precarious home ownership in Australia and the UK’, *International journal of housing policy*, 17(2), pp. 201–226.

XCO2 (2018) *Pocket Living POE: Residents’ Survey*.

Yu, E. and Liu, J. (2007) ‘Environmental impacts of divorce’, *Proceedings of the National Academy of Sciences of the United States of America*, 104(51), pp. 20629–20634.

Zoopla (2020) ‘House prices in Marmalade Lane, Cambridge CB4’, *Zoopla*. Available at: https://www.zoopla.co.uk/house-prices/cambridgeshire/cambridge/marmalade-lane/?property_type_code=F (Accessed: 14 June 2020).