A pattern language for urban commons:
Case studies of cohousing residents' involvement in shared residential landscapes.

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Abstract

This research aims to create a pattern language for urban commons to understand how communities design and manage shared residential landscapes. Shared outdoor spaces have various benefits that support community building and sustainable placemaking. However, shared landscapes have previously been overlooked or unsuccessfully implemented in UK urban housing developments. A new urban commons movement underpinning bottom-up approaches to managing shared resources in cities provides a way of rethinking how residential landscapes are delivered. Despite its growing use in urban design discourse, there remains a gap in understanding how to implement urban commons in practice. Cohousing, an alternative community-led housing model with a high level of resident involvement in the design, delivery and management of shared landscapes, provides a real-world example of how such spaces can operate as urban commons.

Through the lens of assemblage theory, this study combines pattern languages with grounded and participatory approaches to develop a methodology for studying complex urban places. Qualitative data is collected using this grounded pattern approach to study resident participation in shared landscapes across four cohousing cases in UK cities. The thesis presents 72 solutions for urban commoning identified in cohousing landscapes as a pattern language card, alongside detailed empirical accounts of four urban cohousing communities. The results reveal five tensions negotiated by cohousing residents and five concepts for dealing with these tensions by combining the empirical case study findings with wider urban commons discourse. Together, these findings reframe urban commons as complex and dynamic assemblages utilising 'middle-ground' strategies to negotiate multiple conflicting states. The outputs of this research provide a practical tool for residents and design practitioners to get involved in shared residential landscapes, a grounded pattern methodology for researchers studying complex urban environments, and concepts that build upon urban commons theory.

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1 INTRODUCTION

This thesis presents a pattern language for urban commoning in cohousing landscapes as a tool to help understand and apply ideas for involving residents in shared outdoor spaces. This research frames residential landscapes as a type of urban commons to examine residents' involvement in shared outdoor spaces in four cohousing cases located in urban areas in the UK. It aims to identify the solutions and problems of getting residents involved in shared outdoor spaces experienced in cohousing. The pattern language format is chosen both as a methodological tool for identifying issues and solutions within complex urban environments and as a communication tool to share the research outcomes with cohousing stakeholders. This chapter outlines the motivation and rationale behind the research, the gap in knowledge, research aims and questions, the contributions of the study, followed by an overview of the thesis structure.

1.1 Rationale

The limitations of current shared residential landscapes

This thesis focuses on shared residential landscapes as spaces that significantly influence how people live together in cities. The consideration of urban design at the neighbourhood and human scales is important for improving residents quality of life and enabling forms of self-organisation and local adaption (Romice *et al.*, 2016). Residential landscapes are the outdoor spaces between dwellings, including front and back gardens, streets, and parks. Together, they make up a large proportion of space within cities, forming the immediate environments where people live out their everyday routines and interactions (Cooper Marcus and Sarkissian, 1988). People's interactions with their environment and other people are fundamental in shaping people's sense of identity and belonging and influencing mental and physical wellbeing (Thwaites, Mathers and Simkins, 2013). Therefore, the outdoor spaces between buildings are key spheres in which these interactions occur (Gehl, 2006) and play an essential role in the sustainability of housing schemes (Smith, Clayden and Dunnett, 2009). In addition to private and public space, shared outdoor spaces can help to fulfil people's *"need to relate to a group which is larger than the family unit but smaller than a planner-designated neighborhood"* (Cooper

Marcus, 2003, p. 36). Cooper Marcus defines shared outdoor spaces as being owned and primarily accessed by a defined group of residents, such as community gardens and the communal outdoor areas associated with flats, clustered housing and assisted-living facilities (2003).

When appropriately designed, shared outdoor spaces can provide a critical transition between the private spaces associated with the home and the public areas such as parks and streets (ibid.). Unlike private spaces that afford interaction within the household, close family and friends, or public spaces where more passive and fleeting interactions with strangers take place, shared spaces afford frequent and informal neighbourly interaction and safe spaces for children's play (Coolen and Meesters, 2012). As such, design guidelines recommend incorporating well-considered shared outdoor spaces, alongside both private and public spaces, within medium-density residential schemes (for example, Cooper Marcus *et al.*, 1988; MoHCLG 2019, pp. 38–40).

Despite the recommendations for incorporating shared residential landscapes into medium-density housing developments and their comparative popularity in other European countries, this approach remains uncommon in the UK. The English Housing Survey (2021) estimates that most dwellings in England (81%) have a private outdoor space, a minority (16%) have access to a shared outdoor space, while 3% (773,000 dwellings) have no private or shared outdoor space whatsoever. One reason for this is that most housing in the UK has adjoined typologies, primarily historic terraced or semi-detached houses (Piddington *et al.*, 2020; DfLUHC 2021), typically associated with residential landscapes consisting of fragmented private gardens and car-dominated public streets. More modern housing developments, such as the post-war Garden City inspired new town housing estates and higher-rise housing of the 1960s and 70s, typically incorporate more significant areas of shared residential landscapes (Colquhuon, 2008). Although this approach produced large urban green matrices as part of housing developments (Jorgensen, 2004), such spaces have been widely criticised (Forsyth, 2019) due to poorly designed layouts (Greenhalgh, 2016) and insufficient or inappropriate maintenance (Smith, Clayden and Dunnett, 2009). In recent years, house building has moved towards producing purpose-built flats (DfLUHC 2021), often accompanied by shared courtyard spaces, delivered through top-down approaches and managed by private management and maintenance companies. Smith *et al.* (2009) highlight concerns that anything more complex than a lawn in communal landscapes would be too costly to maintain, resulting in oversimplistic and sterile landscapes that minimise residents' opportunities to make adaptions to the immediate environment. The provision of shared residential landscapes in UK housing is often overlooked or doesn't support the intended social function and requires more significant consideration for implementing and maintaining such spaces (Smith, Clayden and Dunnett, 2009).

Involving local communities in shared residential landscapes

Placemaking is an idea that shifts the approach of implementing and maintaining shared residential landscapes by involving local communities and responding to the needs of local people. Good placemaking requires the participation of local people in everyday use, organising of events, and ongoing management and maintenance of shared outdoor spaces (Campbell and Wiesen, 2012; Dempsey, Burton and Smith, 2014). Resident involvement in shaping their surrounding environment can have significant social benefits, including empowerment over the way they live (Aernouts and Ryckewaert, 2018; Fox-Kämper *et al.*, 2018), opportunities for social interaction (Felbinger and Jonuschat, 2006), encouraging the adoption of more sustainable lifestyles and ecological services (Smith, Clayden and Dunnett, 2007).

Despite these benefits, there continue to be many obstacles to community involvement in the design and maintenance of urban residential spaces. An aspect adding to this issue is the separation between top-down and bottom-up approaches to the design, implementation and management of urban development. Top-down approaches to the design and management of shared and public spaces tend to be overly deterministic, with limited capacity to respond to inevitable changes in users' needs and contexts (Habraken, 1998, 2008). For example, when residents pay compulsory fees to private management companies, they may have little say in or direct involvement in influencing shared spaces. More recently, a move towards participatory planning approaches, such as 'planning for real' and the implementation of neighbourhood plans, recognises the importance and benefits of incorporating users in planning and delivering those spaces. The National Design Guide (2019) and BBBBC report (2020) further recommend long-term stewardship of places through community participation and community management systems at an early stage to involve users and stakeholders during the design and management processes. These recommendations support the creation of places that can change over time and develop local people's sense of ownership and belonging (MoHCLG 2019, pp. 47–48). Although many design guidelines recommend the involvement of residents in the design and maintenance of new places, there are few successful exemplars of this, with issues remaining around maintaining genuine and balanced input from residents (see Chapter 2.1 for examples). Given the ongoing challenges in implementing such practices, successfully integrating top-down and bottom-up approaches to support community engagement in shared residential landscapes needs in practice must be understood.

Rethinking residential landscapes as urban commons

The idea of urban commons is applied in this research in residential landscapes to rethink how to successfully design and maintain shared outdoor spaces in UK housing projects. Applying the economics theory of commons to the self-managed sharing of resources and services in cities has given

rise to the 'urban commons' concept. Commons are shared resources sustained and governed by self-organised communities (Ostrom, 1990). The idea reorientates the design and governance of cities towards collectively using and governing resources in urban space and underpin grassroots movements that utilise sharing as an alternative to dominant top-down planning and governance models. Examples of urban resources conceptualised as commons include digital platforms (e.g. Baibarac and Petrescu, 2017; Parker and Schmidt, 2017), independent culture and art spaces (e.g. Bresnihan and Byrne, 2015), community gardens and farms (e.g. Colding *et al.*, 2013; Ela, 2017; Rogge and Theesfeld, 2018), housing (e.g. Huron, 2015), libraries (e.g. Williams, 2018), parks (e.g. Robson, Sinclair and Diduck, 2015) and even cities themselves (e.g. Harvey, 2012; Foster and Iaione, 2016). The resurgence in interest in commoning within the city has emerged in response to the challenges of urban living, offering broader access to urban space and resources and increasing opportunities for social interaction and power to urban dwellers in shaping those spaces (Harvey, 2008). Shared residential landscapes designed and managed as urban commons could provide broader access to local outdoor spaces, greater social interaction with neighbours, and involve local people in making and maintaining those spaces.

Although the concept of urban commons provides a bottom-up approach to the provision and ongoing maintenance of residential landscapes as a shared resource, there are gaps in the existing knowledge for applying this in practice. The topic of urban commons has been of growing interest to researchers in a broad range of fields, including architecture and urban design, with recent literature elaborating on its definition and furthering the theory of urban commons (discussed in Chapter 2). However, there remains a challenge in understanding how shared residential landscapes are implemented as urban commons in practice. Although researchers have given examples of community gardens, parks and housing as manifestations of urban commons, there are insufficient examples presenting shared residential landscapes from this perspective. Furthermore, several researchers highlight a lack of spatial understanding of urban commons in general (Giordano, 2003; Moss, 2014; Pelger *et al.*, 2017) and, as such, there is a lack of integration between urban commons and urban design theory. An empirical exploration of shared residential landscapes functioning as urban commons could provide further insight into the spatial understanding and theoretical development of urban commons and examples of how such spaces are implemented in practice.

Challenges for new housing in the UK

To identify potential examples of shared residential landscapes as urban commons, it is firstly important to situate this research within the broader housing context of the UK. The term 'housing crisis' has frequently been used in major news headlines to describe the UK's chronic shortage of

affordable housing (for example, Grissell *et al.*, 2021). A long-term lack of new house building to meet the demand arising from growing population levels and increased single occupancy homes has created a considerable and ongoing housing shortage in the UK (Wilson, 2017). This demand has seen the cost of housing follow a continued and dramatically rising trend. In recent years, the pandemic has seen an even greater need for housing with access to large outdoor spaces (Cheshire, Hilber and Schoni, 2021) and price increases of over 10% in 2021 (Office for National Statistics, 2021). The impact of housing demand is numerous, including increased overcrowding, homelessness, and substandard living conditions (Wilson and Barton, 2021). The urgent need for new housing has prompted plans by the government to build 300,000 new homes a year in England (Wilson and Barton, 2021).

Although the quantity of new housing is an essential consideration in dealing with the housing crisis, the quality of that new housing and its delivery is also crucial. A report by the Joseph Rowntree Foundation describes the perception of new-builds as *"housing estates consist[ing] of endless rows of unimaginative, identical, 'box-like' houses"* (Leishman *et al.*, 2004, p. 9) and that the layout and atmosphere of developments are an important factor when buying a house. The report also highlighted widespread build quality issues in new houses, the disparity between buyers' and builders' expectations, no direct access to shared gardens, a lack of privacy due to housing layout, concerns over density and the maintenance of shared outdoor spaces (Leishman *et al.*, 2004). Part of the problem is that the majority of new housing in the UK is delivered by a few large commercial developers (DCLG, 2017), inhibiting competition, diversity and resilience in the housing market (Wilson and Barton, 2021). When building at scale, commercial developers face significant financial risk, which reduces their incentive to explore innovative methods of construction and design (DCLG, 2017). The dominance of commercial housing developers in the market has failed to deliver a good variety and choice of housing required to meet resident needs. In the worst cases, this has led opportunistic developers to produce lower quality housing (BBBBC 2020). In addition, commercial housing schemes adopt predominantly top-down approaches to design and delivery, resulting in overly constrained plans that restrict residents' ability to adapt the surrounding spaces to reflect changing lifestyles or a sense of identity. A sustainable approach to new housing provision in the UK also requires diversified ways of delivering housing schemes with outdoor spaces that are responsive to the needs of local people.

Community-led housing: an alternative approach to new housing in the UK

Community-led housing is a more recent, alternative approach to housing development that positions residents as critical decision-makers in the design, delivery and management of housing developments. It presents an alternative model to commercial housing development. Although it only currently accounts for a fraction of new homes built in the UK, the sector has seen significant growth in recent years. There are reports of over 21,000 new community-led homes in the pipeline

(Community Led Homes, 2018b), partly due to support provided by Homes England in the form of the £163 million Community Housing Fund (Homes England, 2019). Government plans to support community-led and self-build homes (MoHCLG 2020) and recommendations to incorporate neighbourhood groups, and small businesses in delivering new homes and places (BBBBC 2020) suggests community-led housing will continue to play an important role in the future.

In community-led housing, community groups own, manage or steward their own homes, meaningfully participating in the development process to ensure the new housing development benefits the residents and wider community (Community Led Homes, 2018c). It differs from community consultation on commercial projects, where most of the decision making remains with design practitioners, planners and developers. Instead, community groups work independently of, or in equal partnership with, external housing organisations, associations or developers. Examples of community-led development include cohousing, community land trusts, community self-build projects, development trusts, housing co-operatives and self-help housing (Community Led Homes, 2018c). The outcomes are unique residential developments that respond to the specific needs and preferences of the community and residents who live there. The focus on the community scale encourages the provision of shared resources and outdoor spaces at the heart of the scheme and frequently incorporate aspects of community-build, -management and -maintenance. As such, community-led housing provides examples of shared residential landscapes functioning as urban commons, by reorientating many aspects of housing as shared and managed by the community of residents who use them.

Cohousing: a growing community-led housing model in the UK

Cohousing is a specific model of community-led housing that demonstrates how shared residential landscapes can function as urban commons and provides a valuable context for conducting this research. Cohousing makes up a small, but growing, sector of UK housing provision, with an estimated 21 completed projects and a further 47 in progress according to figures from the UK Cohousing Network in 2020, and mentioned as a new model of homeownership in the National Design Guide (2019, p. 5). The cohousing model combines—smaller than average—private dwellings with shared community resources—such as shared gardens—within the development site (McCamant, Durett and Hertzman, 1994; Fromm, 2012). Cohousing is different from other types of community-led housing models because it emphasises community involvement in all stages of the development, from the initial group formation and site selection to ongoing day-to-day decision-making and management of the site (McCamant, Durett and Hertzman, 1994). In particular, residents demonstrate notably high levels of involvement in the design, management and creation of shared outdoor spaces. Cohousing is

recognised for its benefits to residents' wellbeing and sense of community (Brenton, 1998; Ruiu, 2016b). Therefore, it is of growing interest to both urban design professions and housing researchers as a socially sustainable approach to residential placemaking that collaboratively combines resident-led development with design professionals (e.g. Devlin *et al.*, 2015; Ruiu, 2016a). In this way, cohousing presents an exciting testing ground for exploring ideas around sharing residential outdoor spaces and resident involvement in those spaces by providing empirical evidence of what does and doesn't work in treating shared residential landscapes as urban commons (Felstead, Thwaites and Simpson, 2019).

Although many authors advocate for the benefits of cohousing, through an appraisal of pioneering cases, predominantly in Europe and the United States, as examples of how to live more sustainably together (for instance, McCamant *et al.*, 1994; Brenton, 1998; Durrett, 2009), recent research (summarised in Chapter 2.4) presents a more complex picture. The key design principles for cohousing, such as inward-facing housing clusters, centrally positioned commonhouse, reduction in private space, car-free landscapes, and shared circulation routes, have been replicated in cohousing projects around the world, including in the more recent UK cohousing revival. However, in comparison to other European countries and the US, the uptake of the model in the UK is slow due to a tendency of newly forming groups to 'reinvent the wheel' and a lack of support from planning and institutional frameworks (Jarvis *et al.*, 2016), bringing into question the role of a new type of professional in helping to bridge this gap (Fernandez Arrigoitia and Tummers, 2019). Others highlight broader issues associated with cohousing, including challenges around dealing with internal conflicts within cohousing communities (Williams, 2005; Jarvis, 2015), wider integration into the surrounding neighbourhood (Fromm, 2012; Tummers, 2016), and potentially exclusionary aspects of the current model (Jarvis *et al.*, 2016; Tummers, 2016). Therefore there is a need to shed more light on cohousing cases to understand the complex interactions between the design of shared outdoor spaces, residents' motivations, social dynamics of the community, and the role of design practitioners occurring from a UK perspective.

A pattern language approach to research

This research draws upon the idea of pattern languages as a methodological tool to capture a more detailed understanding of how shared residential landscapes in cohousing operate as urban commons and share this knowledge with other cohousing groups. This research on residents' participation in shared landscapes as an example of urban commoning requires a methodology to capture the complex relationships between people and place. In addition, this research attempts to produce an output that can be communicated to and used by other community-led housing residents and design professionals. A pattern language, a shared vocabulary for the design of spaces, was first proposed by Christopher Alexander and colleagues (Alexander *et al.*, 1977) to enable anyone to remake

their own environment relevant to their needs, providing a conceptual tool to address these methodological challenges. Each pattern within the language describes a reoccurring design solution to everyday problems within the urban environment and is catalogued so that anyone can read and apply those patterns in their specific context. Pattern languages are a practical urban design and research tool (Deming and Swaffield, 2011; Leitner, 2015) that offer a way to recognise, depict and then apply commonly occurring relations between people and space in everyday settings. The challenge in implementing a pattern language for research is that there is no established methodology for developing a pattern language. Some have also drawn criticism for lack of rigour and objective evidence-base (Dawes and Ostwald, 2017). Therefore, this study progresses a grounded methodology for developing a pattern language to collate and communicate a set of recurring problems and solutions experienced through cohousing residents' involvement in shared landscapes.

1.2 Research Gaps & Objectives

The above rationale sets out why this research focuses on shared residential landscapes as urban commons in the context of UK cohousing. Several research gaps are highlighted, elaborated on in the literature review (Chapter 2), and summarised to frame the research questions.

- **Urban commons theory:** Further empirical evidence is required to substantiate how residential landscapes can operate as a manifestation of the concept of urban commons and further demonstrate examples of urban commons. The social and economic theory of urban commons is currently disconnected from the spatial concepts of urban design and landscape architecture, limiting its application within the design professions. Further theoretical development is required to link and apply the idea of urban commons within urban design theory and practice to provide a greater spatial understanding of commons and collaborative bottom-up practices in urban design.
- **UK cohousing knowledge & practice:** Shared residential landscapes remain uncommon or underutilised in current housing developments in the UK. Further knowledge is required to understand how such spaces should be designed and managed, the challenges involved and what is needed to make it work. Although cohousing provides a working example of residents' collective involvement in shared landscapes, such practices are developed in an ad-hoc way, leaving residents to slowly reinvent the wheel when it comes to negotiating the challenges involved. Compared to other countries, there are fewer studies on how cohousing operates in an urban UK context and the role of design practitioners in enabling bottom-up practices to negotiate top-down frameworks. Therefore a detailed understanding of the solutions and

challenges involved in UK cohousing, as an example of urban commoning in shared residential landscapes, is needed in a format that allows this information sharing with cohousing groups.

- **Pattern language methodology:** Capturing and then sharing the solutions and challenges involved in considering residential landscapes as urban commons is methodologically challenging. Urban environments are complex and dynamic real-world contexts to research. The research topic of resident involvement in shared outdoor spaces requires consideration of spatial, social, and organisational aspects and their relationships. In addition, the research output should enable the sharing of solutions with other cohousing residents in an understandable, digestible and implementable way. To fully explore the pattern languages as a methodological tool that can identify and share solutions in complex contexts requires further work to develop a rigorous evidence-based methodology to support theoretical development.

This research aims to address the above gaps by identifying what works and what doesn't when involving residents in the UK's shared outdoor spaces of urban cohousing cases. Developing a methodology to produce a pattern language as a collaborative tool to share these ideas with other resident groups and collaborating design professionals will help achieve this aim. The pattern language and observations of cohousing cases also provide empirical contributions to urban commons discourse and theory development. The following three objectives outline how the research will contribute to making 'urban commoning' an implementable idea within residential landscapes for communities and urban design practitioners.

OBJECTIVE 1: Identify patterns of urban commoning in cohousing landscapes

The first research objective explores the problems and solutions of collective participation in shared residential landscapes as urban commoning. This research examines UK urban cohousing cases as examples of resident involvement in shared landscapes to identify the enablers of urban commoning,

Research Question: What patterns of urban commoning occur in the shared residential landscapes of urban UK cohousing cases?

OBJECTIVE 2: Create a pattern language for urban commoning

The second research objective is to understand the practical application of the patterns identified by developing and testing a pattern language with new and forming cohousing groups. The pattern language endeavours to act as a collaborative tool used by both design practitioners and cohousing communities.

Research Question: How can a pattern language methodology for urban commoning in shared residential landscapes be developed and applied in the context of UK cohousing?

OBJECTIVE 3: Contribute to the theory of urban commons

The final objective of this thesis is to build upon the theory of urban commons by producing an evidence base of empirical examples of resident involvement in shared cohousing landscapes. The urban commons concept provides a valuable theoretical underpinning for collective participation in residential landscapes. This research will connect urban commons theory and urban design concepts to recognise the spatial, social, and organisational aspects of collective participation.

Research Question: How can urban theory be integrated with traditional commons theory to understand residents' participation in shared landscapes better?

1.3 Research Contributions

This research makes four main theoretical, methodological and practical contributions to knowledge on the topics of urban commons, cohousing and shared residential landscapes:

1. **Usable patterns of urban commoning** that enable collective participation in residential landscapes. Both designers and residential communities are encouraged to apply the practices in their collaborative projects.
2. **A methodological approach** for studying complex urban commons phenomena to identify, develop and apply a pattern language. The methodology is intended for academics and design practitioners interested in community participation in residential landscapes.
3. **In-depth case studies** of residents' collective involvement in shared outdoor spaces in four urban cohousing sites in the UK for academics and design practitioners interested in understanding cohousing in the specific context of UK cities.
4. **Socio-spatial concepts for urban commons** combining theory and ideas from urban design, commons economics and empirical cohousing case studies. The framework is intended for academics studying urban commons, designers and residential communities looking to apply urban commons thinking.

1.4 Thesis Outline

The above research objectives are addressed across eight chapters in the thesis. Chapter 2 presents a literature review from a UK perspective on resident participation in shared outdoor spaces,

cohousing, commons, urban theory and pattern languages. The literature review contributes to the rationale for this research, outlines the research gaps in more detail and builds towards an approach for the study of cohousing landscapes as urban commons. Chapter 3 outlines a methodology for developing a pattern language adapted from a review of previous pattern research and underpinned by urban assemblage thinking. It also provides a detailed outline of the fieldwork and analysis protocol. Chapter 4 describes a thorough reflection on the fieldwork in cohousing communities and implementing the pattern language methodology. Chapter 5 presents the research findings documented through a summary of the cohousing cases, the patterns in a card game format, explorative mapping of connections between the patterns as a language, and the outcomes of some initial workshops to test the pattern language. Chapter 6 is structured around six emergent tensions to provide a detailed account of the forces within the case studies that produce the patterns and their relevance to existing cohousing literature. Chapter 7 then discusses these emergent themes within the broader commons and urban design theory to outline six new socio-spatial concepts for urban commons. Finally, Chapter 8 concludes the thesis by framing the research contributions and outlining recommendations, limitations and future research directions.

2 LITERATURE REVIEW

This chapter firstly provides a more in-depth presentation of the existing research on resident participation in shared residential landscapes, cohousing, and urban commons to demonstrate the research gaps and justify the rationale for the research questions. This is achieved through a brief history of the design and management of housing typologies in the UK and their associated residential landscapes in section 2.1, an introduction of cohousing as an example of community-led shared residential landscapes in section 2.2, outlining urban commons to conceptually reorientate residential landscapes as shared community-managed resources in section 2.3. Following this, an overview of urban theory and its relevance to the concept of urban commons in section 2.3 provides an initial step towards connecting urban and commons theory. The chapter concludes by building a provisional conceptual framework, which guides the theoretical lens and approach to the research towards an assemblage inspired ontology and pattern language research design, as outlined in Chapter 3. Therefore, the second purpose of this literature review is to frame the approach to the research methodology expanded upon within chapters 3 & 4 later in the thesis.

2.1 Resident participation in shared residential landscapes

The benefits and challenges

Shared residential landscapes are the outdoor spaces between residences primarily accessed and used by a group of residents (Cooper Marcus, 2003). According to MacQueen *et al.,* the word community can be defined as *"a group of people with diverse characteristics who are linked by social ties, share common perspectives, and engage in joint action in geographical locations or settings"* (2001, p. 1936). In the context of landscape research, community describes people who are involved in landscape decision-making, have some level of shared experience, knowledge or interests, and collaborate to achieve a collective goal. This includes "*communities of place – the people who live together in a particular place or landscape*", "*[c]ommunities of practice [–] people who share distinctive knowledge, skills and habits of action*", and "*[c]ommunities of interest [–] people who share a material,*

financial, spiritual or other interest in the outcomes of landscape management and landscape change" (Stahlschmidt *et al.*, 2017, pp. 27–28).

In this research, community refers to a group of residents bound by place and their social ties as neighbours and their shard practices and interest in a shared residential landscape. Community participation in shared residential landscapes comprises a potentially broad spectrum of activities, spaces and people. Activities may include more everyday actions such as placing plant pots in shared areas and formal, such as organising maintenance days and agreeing on policies for the use of space. The spaces in which these activities occur could include community gardens, shared allotments, outdoor utility spaces, pedestrianised streets, or courtyards. The definition of community can also potentially extend to incorporate temporary or remote involvement from neighbours, friends, visitors, peers, practitioners, organisations and broader networks. Therefore, community participation in shared residential landscapes could manifest in different ways and practices. The following brief overview of community participation literature on residential landscapes includes a broad range of projects to reflect this variety. The following section, therefore, covers tenant governance in social housing, open space management by housing companies, neighbourhood planning, residents' involvement in park woodland management, community-based land regeneration and community management of urban parks.

Community participation presents a potential solution to the associated challenges of shared residential landscapes, such as misuse, no sense of ownership or lack of maintenance, and numerous benefits to those involved. A solid literature base demonstrates various benefits of community participation in residential landscapes. Many of these stem from US centred studies focusing on the contributions of community gardening to the regeneration of urban residential areas to create places that bring residents together (e.g. Schmelzkopf, 1995; Glaser, Denhardt and Grubbs, 1997; Glover, 2003). For example, an in-depth study of a community garden in New York demonstrated how the project had created new places for *"children and adults to work and play and learn about nature, and…sanctuaries away from the dangers, stresses, and temptations of the street"* (Schmelzkopf, 1995, p. 379). Further benefits highlighted in similar studies included improved maintenance of urban parks (Jones, 2002), increased resident satisfaction and place attachment (Nannini, Sommer and Meyers, 1998), the creation of new services and resources (Shared Assets, 2016), and a beneficial impact on sustainable practices and biodiversity (Matteson and Langellotto, 2010; Turner, 2011).

In addition to the benefits for place creation and regeneration, community participation has numerous social benefits for the residents and communities involved. For individual residents, these include increased social interaction (Glover, Shinew and Parry, 2005), more significant influence over their living situation (Castell, 2006) and empowerment (Myers, 1998). In a study of community

gardens in St. Louis, Missouri, Glover *et al.* (2005, p. 89) found that *"[c]ommunity gardens appear to be mediums through which democratic values are practised and reproduced"*, creating spaces in which communities find ways to resolve differences and find consensus. Similarly, participation in the urban environment relates to aspects of community development, such as social cohesion (Castell, 2006; Lawrence *et al.*, 2015) and the integration of marginalised groups (Giraud, 1990; Shinew, Glover and Parry, 2004). Further to this, studies involving community participation demonstrate links to health and well-being for those involved, such as improved access to healthy food (Twiss *et al.*, 2003) and a positive impact on mental health (Armstrong, 2000). Finally, studies suggested potential economic benefits to community participation, including a positive effect on the image and value of surrounding property and land (Lindgren and Castell, 2008; Fors *et al.*, 2018; Preece, 2019), and savings for community gardeners who spent less by growing food themselves (Schmelzkopf, 1995; Corrigan, 2011).

Studies also highlight several drawbacks and challenges to community participation despite the potential benefits. In some cases, this has made those in charge reluctant to give residents higher levels of control, presenting challenges for communities to achieve and sustain input inclusively. Examples include clashes between the objectives of governing bodies and community needs (Kintrea, 1996; Wargent and Parker, 2018); unequal division of resources and ambiguous responsibilities (Castell, 2006; Hansen and Langergaard, 2017); residents feeling excluded or unheard (Hansen and Langergaard, 2017); being overly time consuming (Lindgren and Castell, 2008; Fors *et al.*, 2018); and a general perception from figures of authority that the process is *"unconventional, complicated or even strange"* (Castell, 2006, p. 703; Fors *et al.*, 2018). In the long term, participation can be hard to sustain, with even previously active and successful resident groups disbanding due to a loss of interest over time, fatigue from continuous setbacks, internal conflict or the sudden withdrawal of a core member of the community (Schmelzkopf, 1995; Castell, 2010). Research highlights a lack of resources, such as time, skills and professional input, as critical barriers to effective participation, which can unequally favour more affluent communities, who already have the knowledge, funding, time, and skills required and reduce the distribution of empowerment (Wargent and Parker, 2018). Therefore, the group of residents involved may not represent the wider community's interests and even exclude others, challenging the inclusivity of community participation projects (Schmelzkopf, 1995; Castell, 2006; Lindgren and Castell, 2008; Fors *et al.*, 2018).

This brief overview of community participation literature highlights a need to harness the multiple benefits of involving residents in residential and neighbourhood landscapes whilst finding ways to overcome the drawbacks and challenges. Further empirical knowledge is required on the factors that support or hinder community participation, but more importantly, identify the mechanisms or 'manoeuvres' (Castell, 2006; Jabareen, 2014) by which groups effectively overcome these barriers. This requires understanding the relationships between internal and external

community relations, specifically how communities navigate top-down frameworks to effectively use professional expertise and resources. Using Arnstein's Ladder of Citizen Participation presents scales of power between residents and others in positions of authority, the following section reviews community participation in housing from a UK perspective to address this research gap.

Theory of community participation

Arnstein's *'Ladder of Citizen Participation'* (1969) provides a model for understanding top-down, bottom-up dynamics of community participation by identifying types of relationships that give greater control to communities. The ladder illustrates varying types of participation across a hierarchy of categories reflecting the extent of citizen power they afford, from genuine to more contrived forms (see figure 2.1). The bottom two rungs of the ladder; (1) *Manipulation* and (2) *Therapy;* describe forms of 'non-participation' that appear genuine but with a hidden purpose of steering or educating participants into a preferred way of thinking. The third, fourth and fifth rungs; (3) *Informing*, (4) *Consultation* and (5) *Placation*; are 'tokenistic' forms of participation that allow participants *"to hear and to have a voice"* (1969, p. 217), but limit power to create real change. The top three rungs of the ladder; (6) *Partnership,* (7) *Delegated Power* and (8) *Citizen Control*; describe degrees of real decision-making powers assigned to participants, from negotiation to complete control. P*artnerships* and *delegated power* share the power between authorities and communities, whereas *citizen control* provides high levels of control and the most significant potential benefit for communities.

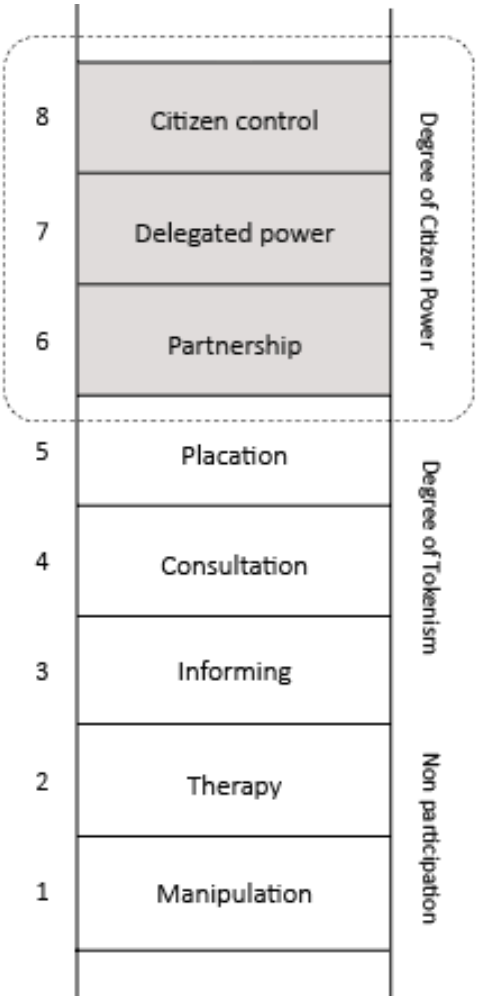


Figure 2.1: *The Ladder of Citizen Participation (adapted from Arnstein 1969, p217).*

Although the ladder of participation helps evaluate the level of empowerment given to participating communities, several scholars, including Arnstein herself, highlight that it fails to recognise the complexity of such activities in practice. For example, the variation in power afforded to some citizens over others, the gradation of participatory forms in-between categories and the variety

of groups and organisations positioned between citizen and government (Silverman, 2005; Arnstein, 2019; Gaber, 2019). Silverman (2005) begins to address these issues by building on Arnstein's ladder with The Citizen Participation Continuum (see figure 2.2), a sliding scale between 'Instrumental Participation', top-down task and project implementation, and 'Grassroots Participation', community action in response to neighbourhood threats. The continuum highlights a gradation of participatory groups, including intermediary organisations. It reflects a more recent shift towards governance in the planning, design and maintenance of residential landscapes, which emphasizes engaging multiple stakeholders and the benefits of community involvement in multiple ways. Together, the ladder and continuum, highlight not only the need to recognise and promote more genuine forms of citizen control in participation, but the range of stakeholders and a variety of potentially participatory activities involved. Together, these two frameworks, provide a basis with which to review the recent history of community participation in urban residential and neighbourhood spaces in the UK.

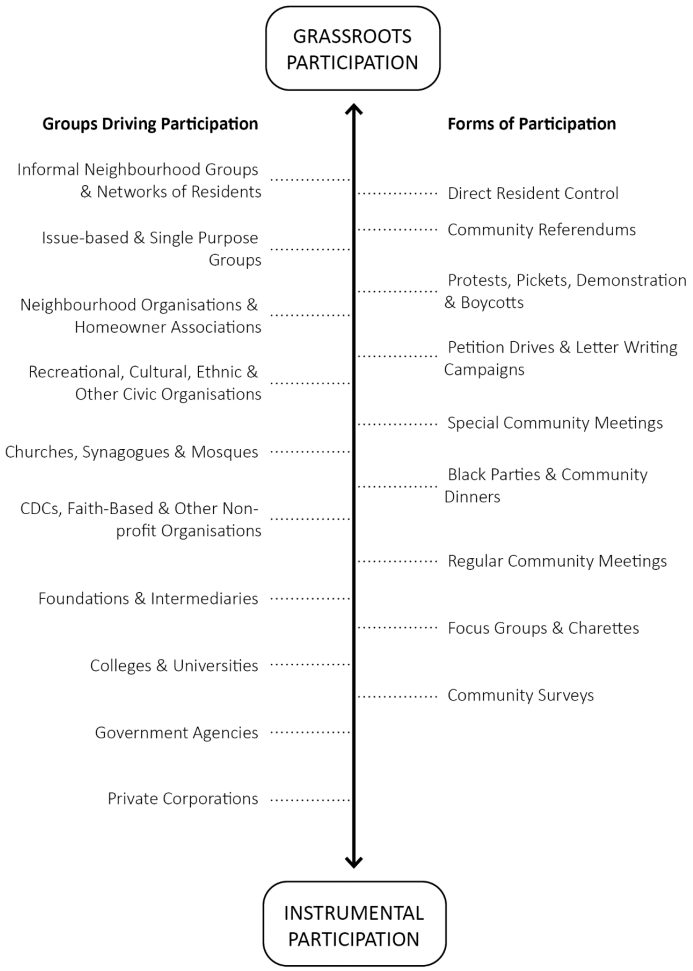


Figure 2.2: *The Citizen Participation Continuum (adapted from Silverman 2005) presents a gradation of participating actors and activities.*

Community Participation in Shared Residential Landscapes from a UK perspective

Over 20% of housing in the UK was built before 1919 (Piddington *et al.*, 2020). The Victorians built masses of affordable housing for the growing cities during the industrial revolution. Low cost and compact back-to-back terraced houses were built as affordable mass-produced housing for workers, with larger end terraces, townhouses, semi-detached or detached villas providing more spacious accommodation for the middle and upper classes. Although large quantities of lower-quality back-to-back housing were demolished during the slum clearances beginning in the 1930s (Colquhuon, 2008), the terraced and semi-detached house remains a popular and common housing typology in the UK,

Figure 2.3. *"Back of housing on Chippingham Street, Darnall, Sheffield" from The JR James Archive, University of Sheffield (2013) licensed under CC BY-NC 2.0. Available at https://www.flickr.com/photos/jrjamesarchive/*
Figure 2.4. *"Wilstrip Road, Darnall, Sheffield" from The JR James Archive, University of Sheffield (2013) licensed under CC BY-NC 2.0. Available at https://www.flickr.com/photos/jrjamesarchive/*
Figure 2.5. *"Gated Entry. Langworth, Salford" by Keith Williamson (2005) licensed under CC-BY-SA 2.0. Available at: https://www.geograph.org.uk/photo/33215*

particularly in post-industrial towns and cities. Although sizes and layouts vary, such typologies typically consist of regular straight rows of housing facing the street, with back gardens or yards, often containing a row of outhouses (see figure 2.3 & 2.4). Previously these were predominantly utilitarian, but today, residents use these gardens primarily as individual private spaces. Although the street provides a shared realm, they are now often dominated by car parking and traffic due to a lack of off-street parking. As such, terraced and semi-detached housing typologies often lack any shared residential landscapes that residents can get involved in, in a meaningful way. However, surviving back-to-back housing examples with back-alleys provide an example of shared residential landscapes associated with this typology. Although the primary intention of these spaces was utilitarian for the use of deliveries and services, residential communities have these as shared spaces (see figure 2.5) (Addley, 2020). These projects have been possible where residents have protected these spaces from

crime and antisocial behaviour, sometimes achieved through alley-gating schemes promoted by local councils (Johnson and Loxley, 2001; Landman, 2003). In this case, there is a *partnership* between *'Informal Neighbourhood Groups'* and *'Government Agencies'*, whereby the local authorities agree to install alley-gates if residents request them to reduce crime and delegate residents' *direct control* over the development of the alley as a community space.

Figure 2.6. *"Housing at Welwyn Garden City" from The JR James Archive, University of Sheffield (2013) licensed under CC BY-NC 2.0. Available at https://www.flickr.com/photos/jrjamesarchive/*
Figure 2.7. *"Housing Letchworth Garden City" from The JR James Archive, University of Sheffield (2013) licensed under CC BY-NC 2.0. Available at https://www.flickr.com/photos/jrjamesarchive/*
Figure 2.8. *"Darcy Close viewed from Fairfax Road, Manor Estate, Sheffield" from The JR James Archive, University of Sheffield (2013) licensed under CC BY-NC 2.0. Available at https://www.flickr.com/photos/jrjamesarchive/*

The Garden City Movement significantly influenced new housing built during the early part of the 20th Century. In a move away from the dense and industrialised house-building of the previous century, Ebenezer Howard looked towards the countryside and rural villages to inspire a vision for self-sufficient and socially-driven cities (Howard, 2007). The Garden City vision consisted of a central core of mixed development surrounded by clusters of widely spaced garden suburbs and surrounded by an agricultural green built to limit further urban development. The houses typically consisted of semidetached or short rows of terraces, with wide frontages and generously spaced apart. The

architects Raymond Unwin and Barry Parker realised Howard's vision in garden cities, including Letchworth and Welwyn (see figures 2.6 & 2.7), which closely followed the original garden city principles.

Regarding residential landscapes, garden cities typically provided generously sized private gardens, often surrounding at least two sides of the house and shared spaces afforded by large ornamental public parks and squares. The land was to be held in trust for the community, and any profit arising would be used to benefit the people living there. Therefore residential groups were *'delegated power'* to decide how that money should be spent, resembling *'Neighbourhood Organisations & Housing Associations'*. Despite the success of some of the early examples of Garden Cities, later examples were characterised by a general lowering of quality in response to funding cuts and the simplification and rationalisation of the fundamental design principles (Colquhuon, 2008). As such, planners interpreted the garden city ideals as expansive edge-of-city suburbs (for example, The Manor Estate in figure 2.8), which were not held in trust for the community as Howard had envisioned, leaving residents with little participatory influence. These estates lacked the design standards, funding, maintenance and sense of ownership of the pioneering garden cities and the low-density urban sprawl attracted criticism for its detrimental impact on green field landscapes.

Figure 2.9. *"Housing, Blackstock Road, Sheffield, 1972" from The JR James Archive, University of Sheffield (2013) licensed under CC BY-NC 2.0. Available at https://www.flickr.com/photos/jrjamesarchive/*

Following the two world wars, the government placed renewed focus on house building, with the Addison Act of 1919 instructing local authorities to survey and prepare programmes for meeting local housing needs. The result was a new wave of affordable semi-detached houses, prefabricated houses, and later Scandinavian inspired medium and high-rise developments. The design of larger-scale developments emphasized creating small neighbourhoods of mixed-use development including

community facilities such as schools and local shops (Colquhuon, 2008). As the challenge of housing a growing population became apparent, Patrick Abercrombie recommended building new towns, balanced communities of 50,000-100,000 people as neighbourhood units. Gleadless Valley development in Sheffield (figure 2.9) embraced many of these ideals, consisting of three distinct planned communities with schools, shops, pubs, a church and other community facilities. Although the focus on creating new self-sufficient neighbourhoods was forward-thinking at the time, neighbourhood units as planned communities experienced unforeseen challenges, such as isolation from city centres, "ghettoisation", and the simultaneous degradation of facilities. Therefore, the provision of large-scale infrastructure and facilities that are pre-empted and implemented in a top-down way is now considered overly 'deterministic', reducing the opportunities for residents to personalise and adapt their surroundings over time.

Figures 2.10. *"Le Corbusier's apartment house in Berlin (Germany)" by Alexander Savin (2017) licensed under FAL. Available at: https://commons.wikimedia.org/wiki/File:Corbusierhaus_B-Westend_06-2017.jpg*
Figures 2.11. *"Park Hill, Sheffield" from The JR James Archive, University of Sheffield (2013) licensed under CC BY-NC 2.0. Available at https://www.flickr.com/photos/jrjamesarchive/*
Figures 2.12. *"Ponderosa, Netherthorpe, Sheffield" from The JR James Archive, University of Sheffield (2013) licensed under CC BY-NC 2.0. Available at https://www.flickr.com/photos/jrjamesarchive/*

During the 1950s, there was pressure for the government to build more significant numbers of new dwellings, fuelled by further slum clearances, which placed greater emphasis on building at higher housing densities due to a lack of available urban land. The 60s and 70s became synonymous with high-rise buildings as a general move away from the suburban housing sprawl of previous decades towards building inner-city flats continued (Colquhuon, 2008). The Unité d'habitation in Marseilles, completed in 1952, manifested Le Corbusier's vision of medium-high rise housing positioned within green parkland settings using mass-produced building technologies and modern materials significantly influenced housing development. Both the architecture and landscapes of these higher density developments were highly influenced by industrialised methods of construction, using concrete and steel were also seen as a way of coping with the volume of houses required, and the high densities made way for increased areas of open space and community facilities within inner urban areas (figure 2.10 & 2.12). Park Hill flats in Sheffield, built 1957-1961 and consisting of three curved arms of 4-13 stories high, was considered the epitome of Corbusier inspired mass housing built in the UK (Banham, 1961). Residents had access to a balcony, instead of a private garden, to enjoy the views of the city and access to shared facilities and playgrounds within the inner courtyards and surrounding sloping lawns (figure 2.11). The design of the building's main architectural feature, the 'streets in the sky', ensured *"[t]heir width [wa]s sufficient to accommodate children's games and small-wheeled vehicles for deliveries and furniture removals…[f]unctionally and socially they [we]re streets without the menace of through vehicular traffic…"* (Banham, 1961, p. 409). The streets were named after those of the back-to-back housing that the scheme replaced so that rehoused residents could remain living close to their neighbours and retain a strong sense of community. Although the development received a mostly positive response at the outset, a combination of design oversight, lack of maintenance and management, and unforeseen changes in the socio-economic context ultimately led to the social failure of Park Hill Flats (Stillitoe, 2014). Many also criticised the development's "fortress-like" appearance due to the disconnection of residential units from the ground level and a lack of ownership and maintenance of shared facilities. The story of park hill's deterioration was typical of the continued deterministic design of the high-density housing estates of the time, which provided little opportunity for residents to take ownership over the surrounding residential landscapes.

In the early 80s, the right-to-buy legislation gave tenants in council housing and some housing associations the opportunity to buy their own homes at a discounted price. Although this policy gave people more opportunity to gain an economic stake in their homes, it was controversial and blamed for increases in house prices, a lack of affordable housing and the isolation and stigmatisation of a small concentration of remaining council housing (Colquhuon, 2008). At the same time, growth in unemployment, crime, vandalism, and anti-social behaviour in high-density housing estates resulted in their decline and became unfavourable places to live. There was a move towards either demolishing

tower blocks or regeneration schemes to modernise and improve the developments. Although many issues arose from the overly deterministic social housing design in the 1960s and 70s, it also triggered a move towards resident involvement in housing. A shift in political focus onto 'consumer rights', accountability, governance and empowerment (Jenkins, Milner and Sharpe, 2009; Mouland and Grenier, 2015; Preece, 2019) recognised the importance of creating a sense of ownership of the surrounding spaces in housing developments by involving residents in the decision making was also recognised. Government policies during the 1980s and 1990s emphasised the importance of resident input into social housing management, providing new consultation rights to local authority tenants and communities on the design and management of urban regeneration strategies (Mouland and Grenier, 2015).

Figures 2.13. *"Long Headlam, south side of Byker Wall" by Andrew Curtis (2010) licensed under CC BY-SA 2.0. Available at: https://www.geograph.org.uk/photo/1776413*
Figure 2.14. *"Shipley Walk, Byker Wall" by Andrew Curtis (2010) licensed under CC BY-SA 2.0. Available at: https://www.geograph.org.uk/photo/1775643*
Figure 2.15*. "Gardens behind the Byker Wall" by Andrew Curtis (2010) licensed under CC BY-SA 2.0. Available at: https://m.geograph.org.uk/photo/1776258*

Several standout architect-led regeneration schemes undertaken to improve council estates by encouraging resident participation were known as community architecture. One such example was Byker, a low-medium rise social housing development in Newcastle (see figures 2.13-2.15), facilitating residents' participation in its design (Jenkins, Milner and Sharpe, 2009). It includes a range of shared outdoor spaces, including private ground floor gardens, that makes it stand out from its more brutalist counterparts at the time. This approach represented a return towards encouraging residents' participation in the form of *'consultation'* whereby the design practitioner acts as an *'intermediary'* by involving residents through *'focus groups and charettes'*. In addition, Housing associations played an important role in involving tenants in delivering housing regeneration schemes through Tenant Management Organisations, Tenant & Resident Associations, Forums and other similar engagement initiatives. However, despite tenant participation becoming standard practice for many housing providers (Preece, 2019), the form and extent to which tenants were involved varied considerably. A recent evidence review of tenant participation in social housing (Preece, 2019) highlights concerns for the extent to which tenants are meaningfully involved, including examples of landlords wanting to retain control over participatory processes (Hickman, 2006) or not listening to residents (McKee, 2011). Other researchers found cases where participation in social housing was unrepresentative and individualistic (Mouland and Grenier, 2015), hindered by resistance from those with authority (Kintrea, 1996; Bradley, 2008). The literature highlights that although tenant participation in social housing is often viewed as inherently empowering for residents, it can become tokenistic or non-participative.

***Figure 2.16**. "Bishops Lydeard: Cotford St Luke" by Martin Bodman (2006) licensed under CC BY-SA 2.0. Available at: https://www.geograph.org.uk/photo/159243*
***Figure 2.17**. "Mock Tudor House, Catton Lane" by Mick Malpass (2011) licensed under CC BY-SA 2.0. Available at: https://www.geograph.org.uk/photo/2505676*

In parallel to the regeneration of social housing schemes in the 80s and 90s, private housing developments became increasingly common. Those who could afford moved towards lower-density towns and villages away from the decline in urban centres to buy new houses in low-density housing estates built by private housing developers (Colquhuon, 2008). Mass car ownership and a lack of local facilities meant car dependency and low-density housing layouts designed around car access and off-street parking. The resulting housing estates echoed the 'Radburn-esque' layouts of American suburbs,

which characteristically have houses set back from the streets with large front gardens and driveways, connected by winding cul-de-sac roads (figures 2.16-2.17). These developments saw a nostalgic return to the Garden-city low-density principles and mock Tudor-Edwardian architectural features, with little focus on providing shared residential spaces or community involvement outside residents' individualised gardens.

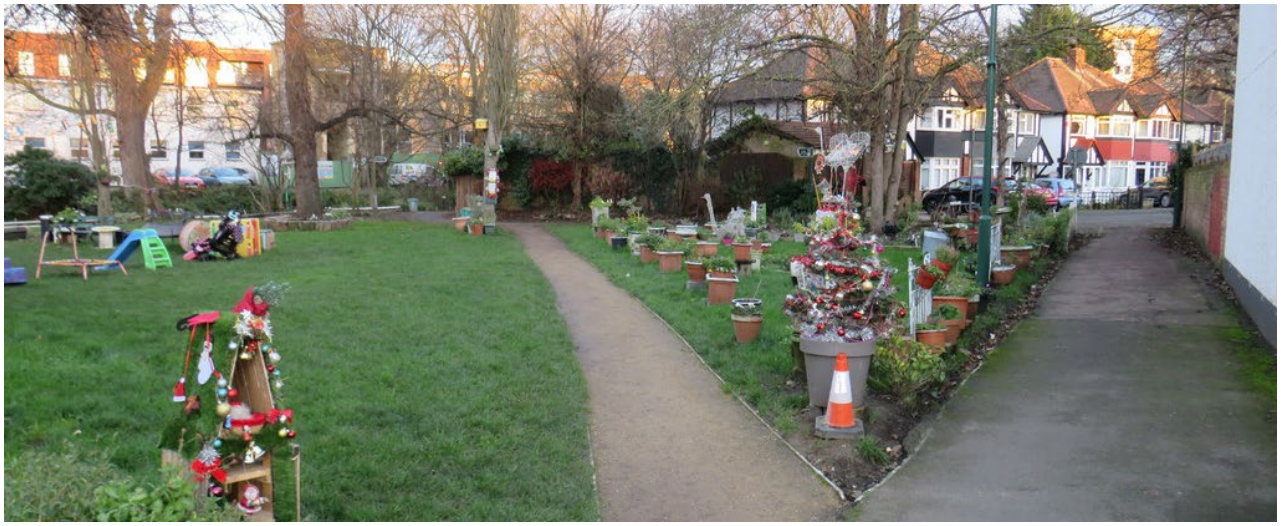


Figure 2.18. *"A yarn bombed bench at Thrupp" by Steve Daniels (2019) licensed under CC BY-SA 2.0. Available at: https://www.geograph.org.uk/photo/6168490*
Figure 2.19. *"Guerilla Gardening in front of Flying Pigeon LA" by Umberto Brayj (2008) licensed under CC BY 2.0. Available at: https://www.flickr.com/photos/45152500@N00/2964626825/*
Figure 2.20. *"Community garden in Hackbridge" by Malc McDonald (2020) licensed under CC BY-SA 2.0. Available at: https://www.geograph.org.uk/photo/6365419*

There has been a new wave of community participation in more recent years through experimentations in sharing economies, ecological living and affordable housing models (Fernandez Arrigoitia and Tummers, 2019), triggered in part by austerity measures brought in after the 2008 Global Financial Economic Crisis (Czischke, 2018), which negatively impacted public spending, house prices and job security. The effect of the crisis on the urban environment and the more informal modes of urban design that emerged has been described as 'Austerity Urbanism', describing how *"the urban*

environment is affected by difficult economic conditions…created by government strategies to systematically reduce public expenditure" (Sara, Jones and Rice, 2021, p. 1). Alongside widespread cuts to public sector services, austerity-imposed cuts were made to urban outdoor spaces and their management and maintenance services, detrimentally affecting their use and quality (Heritage Lottery Fund, 2016). Some public spaces were privatised or privately managed to address resource gaps, such as Business Improvement Districts, giving commercial organisations, rather than residents, control (Harvey, 2012). The gaps created from cuts in public funding and withdrawal of the private sector has driven alternative practices of spontaneous, smaller-scale urban interventions by individuals and community groups to 'take back control' of public spaces. Practices, such as 'community gardening' (Crossan *et al.*, 2016), 'guerrilla gardening' (Adams, Hardman and Larkham, 2015), or 'yarn-bombing' (Hahner and Varda, 2014), are variously described as 'DIY', 'tactical', 'insurgent', and 'makeshift' urbanism (Tonkiss, 2013; Douglas, 2014) are just some examples (figures 2.18-2.20). Together, these examples describe bottom-up, small-scale, and often temporary interventions by individual citizens and organised groups. However, such practices often emerge outside of official capacities and are therefore limited by a lack of support from the top-down (Sara, Jones and Rice, 2021) and can be viewed by authorities as 'illegitimate', insignificant or even illegal (Douglas, 2014). These small acts may be considered a form of *'citizen control'* whereby residents employ tactics to exercise control of public spaces where there are voids in regulation, ownership or formality. The downside to this unsanctioned approach to *'citizen control'* is that it tends to be short-lived, fragile and scattered.

In 2011, 'the Localism Act' sought to engage with these emergent grassroots efforts by emphasizing communities to get involved in the planning, management and maintenance of public open spaces and planning. A shift towards volunteerism and a general decline in parks facilities across the UK has been the catalyst for collaboration between park users, who wish to volunteer to improve their local parks, and council officers, who want to incorporate local community views and resources into park regeneration, as 'Friends of groups' (Jones, 2002; Dempsey and Burton, 2012). The devolved responsibility granted to volunteer communities such as 'Friends of groups' gives them an active role in decision-making and a higher level of control on the ladder (Jones, 2002), such as *'partnership'* or *'delegated power'*. However, maintaining engagement of communities in place management in the long term can be challenging, requiring ongoing support and training for community groups (Dempsey, Burton and Smith, 2014). A key part of the Localism Act was the introduction of Neighbourhood Development Plans, which allowed local communities to influence how their local area was developed. This gave approved Town or Parish Councils and Neighbourhood Forums the power to earmark land for development and permit planning for community-led affordable housing (Brownhill and Bradley, 2017). The intention behind neighbourhood planning was to enlist community support for increased house-building in the UK through devolved community control, emphasising achieving a 'sense of

place' and place identity (Bradley and Sparling, 2017). Importantly, the Localism Act ensured the rights of communities to a '*degree of citizen power'* over decisions in their local neighbourhood are protected in legislation. However, a lack of uptake from communities in urban areas (there are five neighbourhood plans in Sheffield (Sheffield City Council, 2021)) raises concern for how authorities are supporting communities and that those communities are inclusive to a wide range of people.

Figures 2.21. *"The Walter Segal self-build house" by Richard Hoare (2019) licensed under CC BY-SA 2.0. Available at: https://www.geograph.org.uk/photo/6033354*
Figures 2.22. *"Eco Houses Mina Rd St Werburghs" by Nigel Mykura (2010) licensed under CC BY-SA 2.0. Available at: https://www.geograph.org.uk/photo/1698950*
Figures 2.23. *"BedZED eco-village, England" by Tom Chance (2007) licensed under CC BY 2.0. Available at: https://www.flickr.com/photos/tomchance/1008213420/*

The focus of Neighbourhood planning on affordability and sustainability progressed alternative approaches to housing development that reiterated social and environmental approaches,

including smaller-scale affordable community-led, custom-build and ecologically-focused developments (Bradley and Sparling, 2017, see for e.g. figures 2.21-2.23). The government have emphasised a shift away from larger developer volume building in the *Self-build and Custom Housebuilding Act 2015* and the 2018 £162 million Community Housing Fund *"to support an increase in housing supply in England", "provide housing that is affordable", "and to deliver a lasting legacy for the community-led housing sector…within the house building industry in England"* (Homes England, 2019). Community-led housing covers a range of developments, including Community Land Trusts (CLTs), community self-build, development trusts, housing co-operatives, self-help housing and cohousing. They represent an alternative to commercial housing development where *"open and meaningful community participation…takes place throughout the process"*, *"the community…owns manages or stewards the homes in whichever way they decide"*, and *"is of true benefit for the local community, a specific group of people, or both"* (Community Led Homes, 2018c).

Community-led housing enables a bottom-up approach to development that shifts residents' roles from end-users to engaged participants, enabled by input and collaboration from experts, such as architects and landscape architects, to help groups negotiate the complex technical design and planning frameworks. Recent political support for community-led housing has triggered a new wave of community housing developments with collectively managed shared facilities, including shared outdoor spaces, providing a timely example of resident involvement in shared landscapes that embodies a high *'degree of citizen power'*. Although community-led housing presents exciting new models to experiment with different ways residents can participate in shared residential landscapes, compared to other European countries, with less than 27,000 homes completed (Community Led Homes, 2018b), it currently makes up less than 0.01% of housing in the UK. Therefore, there is still a long way to go before the fundamental ideas within community-led housing significantly impact housing in the UK. The following section focuses on urban commons as a concept to reorientate the idea of residential landscapes in housing models in the UK toward community-governed shared resources.

2.2 Urban commons

Urban commoning is a user-led approach to maintaining shared resources in cities and provides a potentially helpful way of framing resident involvement in shared landscapes. In recent years, the concept of the urban commons has gained momentum in response to an emerging sharing culture in cities (Katrini, 2018) and participatory approaches to creating the city (Harvey, 2008). It is relevant to urban design and landscape architecture practice, as grassroots action and participatory design in urban spaces are increasingly recognised as important for creating meaningful places, as has already been highlighted in the previous section. As such, some urban design practitioners have

embraced the concept of the urban common by exploring and practising ways for practitioners to engage in community and grassroots urban design (for example, Petrescu *et al.*, 2016). At the same time, the growing community-led housing sector in the UK has created opportunities for community groups and practitioners to work together in creating urban commons in residential landscape settings. Although the literature on urban commons has exploded in recent years (Bollier, 2007; Hess, 2008), the implications for applying commoning theory within the city have only recently been broached. This section provides an overview of the origin of urban commons theory, from the traditional medieval common to its reinterpretation within the city. In doing so, it summarises the current discourse on urban commons and highlights the theoretical implications for applying the traditional concept in the contemporary and complex context of the city.

Defining commons

The recent interest in reinterpreting 'the commons' has diversified its meaning and relevance to contemporary life, but in doing so, it has become a somewhat ambiguous term that is *"frequently applied yet rarely defined"* (Hess, 2008, p. 3). Before addressing the full breadth of what an urban commons could be, the traditional medieval common can help to explain Ostrom's economic theory of common-pool resources (1990) in defining what commons are. In the UK, most people may be familiar with the term 'common' as a shared area of uncultivated land allocated to medieval villagers for grazing and foraging. During Britain's industrialisation, the succession of 'enclosure acts essentially ended this practice, transforming traditional commons into privately owned farmland or as designated areas of public access land used for leisure and dog walking. Hardin (1968) had in mind the concept of the traditional common when he argued that the destruction of open-access natural resources is inevitable because those who use them will always act in their self-interest to exploit them. He labelled the analogy *'the tragedy of the commons'* and wrote an article of the same title to highlight the destructive exploitation of the world's natural resources at the hand of man. However, it also became synonymous with the successive acts of enclosure that ended an era of traditional commoning in favour of private parcels of land and was subsequently viewed as a key argument against the sharing of land and resources.

Elinor Ostrom (1990) successfully challenged the idea that all commons were destined for self-destruction by reasoning that users had a mutual interest to work together to avoid the tragedy. Ostrom highlights that the open-access resources vulnerable to exploitation that Hardin speaks of are defined by two characteristics: *subtractability*—the likelihood of a resource being depleted by consumption—and *excludability*—the ability to restrict access to a resource. 'Common-pool resources' describe resources that are both subtractable, or impacted by overuse, and nonexcludable, have unrestricted access, making them vulnerable to exploitation. Game theory modelling and empirical

observations of commons by Ostrom revealed critical but previously overlooked social and organisational dimensions of common-pool resources. Ostrom identified vital characteristics of successful examples of common-pool resources as being restricted to a defined group of resource users, who actively participated in defining their own rules, boundaries and agreements, enforcing the rules and resolving differences. Unlike Hardin's scenario, where people continued to exploit land until the tragedy was fulfilled, Ostrom proved resource users could transcend their self-interests to find agreements that would sustain the land for the common good.

> *Design principles illustrated by long-enduring CPR [common pool resource] institutions:*
>
> 1. *There are **clearly-defined boundaries** of the CPR.*
> 2. *There is **congruence between the resource environment and its governance structure** or rules.*
> 3. *Decisions are made through **collective-choice arrangements** that allow most resource appropriators to participate.*
> 4. *Rules are enforced through effective **monitoring** by monitors who are part of or accountable to the appropriators.*
> 5. *Violations are punished with **graduated sanctions.***
> 6. *Conflicts and issues are addressed with low-cost and easy-to-access **conflict resolution mechanisms.***
> 7. *High-level authorities **recognize the rights** of the resource appropriators to self-govern.*
> 8. *In the case of larger common-pool resources: rules are organised and enforced through multiple layers of **nested enterprises.***
>
> (Adapted from Ostrom 1990, p.90)

Ostrom's eight Principles for managing common-pool resources highlight that commons can not be defined simply as a type of shared resource but that the social and organisational dimensions are equally essential to its existence. Linebaugh famously stated, *"there is no commons without commoning"* (Linebaugh 2008 cited in Foster and Iaione, 2016), referring to the essential part collective action and governance plays in the commons. Harvey goes further than this to emphasise that commons are produced from the relationship between both the physical aspects of the shared resource and the social processes that produce or sustain it, as described in his own words:

> *"The common is not to be construed, therefore, as a particular kind of thing, asset or even social process, but as an unstable and malleable social relation between a particular self-defined social group and those aspects of its actually existing or yet-to- be-created social and/or physical environment deemed crucial to its life and livelihood"* (2012, p. 73).

Commons are therefore defined in this thesis by the relationship between three essential components: (a) a *shared resource*, (b) a *community* of resource users and (c) collective *governance* (figure 2.24).

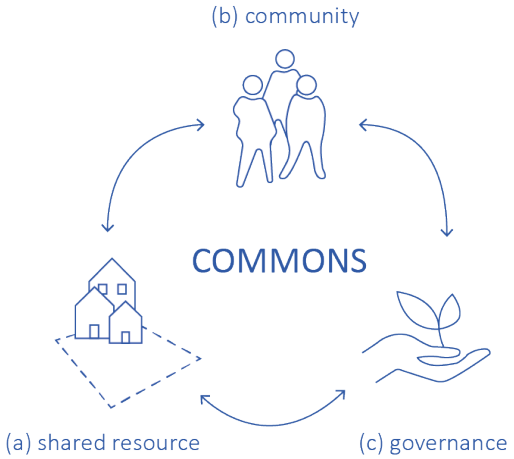


Figure 2.24. *The defining elements of a commons: (a) a shared resource, (b) a community of users, and (c) collective governance.*

Defining urban commons

Ostrom's work, empirically rooted in a rural context, not only justified commoning as a sustainable approach to managing shared resources but also paved the way for applying the concept into new areas, including both physical and intangible resources, such as knowledge (Hess and Ostrom, 2011) and culture (Gidwanii and Baviskar, 2011). Of particular interest to this research is the reinterpretation of commons within the city (Harvey, 2012; Susser *et al.*, 2013; Foster *et al.*, 2016) to address limited resources, community building and participatory placemaking. Foster and Iaione argue *"the city is a commons in the sense that it is a shared resource that belongs to all of its inhabitants"* and *"is an open access good subject to the same types of rivalry, or contestation, and congestion that needs to be managed to avoid the kinds of problems or tragedies that beset any other commons"* (2016, p. 288). Hess describes urban commons as being part of a 'new commons movement', a societal drive to take back control of public space and resources in reaction to *"increasing commodification, privatisation, and corporatisation, untamed globalisation and unresponsive government"* (2008, p. 3). The movement expands the idea of the commons as a sustainable and collective approach to resource management to include socio-political engagement on social justice, inclusiveness and open access within the city.

The idea of the city as a commons is underpinned by *'The Right to the City'* (Lefebvre, 1996), which Harvey (2012) points out describes not only a right of access to city spaces but also a right to remake those spaces, to reflect the needs and aspirations of its residents. Harvey argues for *"a right to change ourselves by changing the city"* (2008, p. 23), echoing the words of Berleant, *"what we do in*

environment, we do to ourselves" (1997, p. 121) to acknowledge the need for citizens to be able to change their surroundings as a way of gaining control over how they want to live and whom they become. Therefore, affording agency for everyday citizens over their urban environment is a central theme of urban commons.

The urban characteristics of the city provide a new context for the commons, which was previously only defined by rural examples in Ostrom's work, and as such, has implications for commons theory. The word urban describes socio-spatial characteristics associated with the city, including scale, proximity, density, diversity, anonymity, and materiality (Wirth, 1938). The city, therefore, not only offers a new setting for commons to exist within, but it also presents new conditions and challenges from which commons may emerge. In the recent literature on urban commons, authors have begun to identify characteristics that distinguish urban commons from their rural counterparts, summarised in the following key points.

Dynamic emergence and adaption: High densities and proximity of people in cities create increased demand for resources, a key driver for people to share resources as urban commons (Foster and Iaione, 2016; Helfrich and Bollier, 2019). However, demands on urban resources are never static; as social and economic factors shift, different city areas go through cycles of development, deterioration, abandonment and regeneration. Commoning, therefore, emerges in response to shifting drivers and opportunistic availability of resources. In the literature, examples include urban commoning emerging in response to privatisation (Bresnihan and Byrne, 2015), the threat of eviction (Huron, 2015), resistance against demolition (Thompson, 2015) and climate change action (Dobson, 2017). Further to this, other scholars highlight that urban commons emerge within and occupy areas of ambiguity, in unused and in-between spaces or where there are otherwise voids in occupation, maintenance or governance (Stavrides, 2015; Foster and Iaione, 2016). Therefore, like the city, urban commons are dynamic, temporal and adaptive (Esopi, 2018).

Transient, highly networked and diverse populations: Ostrom bases the success of commoning on trust and long-term mutual benefit found within the relatively close-knit and stable rural communities that *"share a past, and expect to share a future"* (Ostrom, 1990, p. 88). However, urban commons seemingly occur without the expected established commonality and stability of rural communities. Lofland (1973) describes an urban mentality of indifference and civility towards others due to an intense copresence of strangers in everyday life in the city. Huron, in her study of housing cooperatives in Washington DC, identifies *"the collective work of strangers"* (2015, p. 936) as a defining characteristic of urban commons, suggesting urban commons arise from the cooperation between transient and indifferent strangers around a shared interest, rather than the close-knit communities

in rural settings. Unlike traditional commons, there is no assumption that an established community is a prerequisite for urban commons formation. However, instead, there is a simultaneous relationship between commoning activity and community formation triggered by a shared interest and dynamic urban drivers (Huron, 2015, 2017).

Contested and conflicted territories: How space is used and for whose benefit is an ongoing debate within cities where space is highly contested. Huron identifies an essential characteristic of urban commons as created within environments that are *"saturated with people, competing uses, and financial investment"* (2015, p. 936). Harvey (2012) highlights that when commons are created, this can be at the expense of other uses and users or even replace other existing forms of commoning. Many scholars highlight the apparent contradiction between the bounded nature of commons that may exclude certain groups and the open-access and inclusive ideology of the commons. The city's contested nature makes the tension between inclusion and exclusion within the commons more apparent. For example, where Ostrom (1990) highlights that commons require well-defined boundaries to control access to a specific group of users, Harvey (2012), by contrast, emphasises the need for openness, spatial justice, and inclusivity.

Urban frameworks, institutions and governance: Urban commons play a role in producing urban places or place-making. Moss (2014) highlights that by understanding commons as something produced by the process of "commoning", commons can shape socio-spatial structures. Blomley reinforces this in the statement, *"[if it] is true to say that place helps make the commons, it is equally the case that the commons is a form of place-making"* (2008, p. 320). Foster goes further in saying that commons have the potential *"to provide a framework and set of tools to open up the possibility of more inclusive and equitable forms of 'city-making'"* (2016, p. 285). This resonates with architecture, planning, and urban design professions, which have begun to explore the implementation of commoning as a form of place-making (Petrescu, Petcou and Baibarac, 2016). Urban commoning, like other forms of place-making, is instigated in the context of the city's institutional, legal, and planning frameworks. Commoning groups, therefore, often need to negotiate planning policies and processes and may require additional support and funding to do so. Even when urban commoning groups emerge outside of official or legal frameworks, in time, they are likely to require collaborations with various professions, organisations or institutions to negotiate the complexities of place-making in dynamic and contested contexts (Foster and Iaione, 2016).

Multi-scalar: Cities are multi-scalar and, therefore, commoning occurs in cities across multiple scales. Smaller-scale, localised commons, *"where people living in close proximity come*

together to strengthen, manage, preserve, or protect a local resource" (Hess, 2008, p. 16), have more recognisable similarities to traditional commons, such as urban community gardens. Infrastructure, such as transport, communication, and public services, have also been conceptualised as commons networks (Hess, 2008). Further to this, urban commons have become synonymous with political activism and 'the right to the city' calling for citizens' collective need to influence and reshape the city as a whole (Harvey, 2012; Foster and Iaione, 2016). Thus, urban commons can be described as spatially pluralistic, meaning they can manifest in different forms and sizes or exist within and be connected to other commons. Although it is theorised that commoning in cities occurs across multiple scales, it is equally recognised that scaling-up commons beyond the local in practice is challenging (Giordano, 2003; Moss, 2014; Foster and Iaione, 2016).

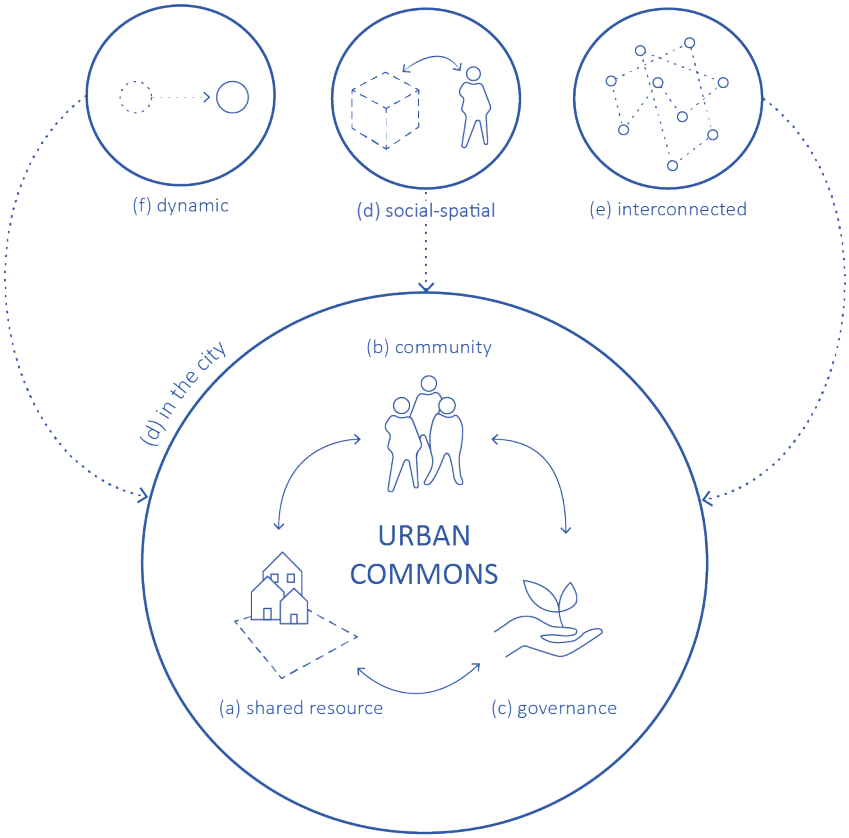


Figure 2.25. *Urban commons exist within and interact with other complex urban phenomena.*

Urban commons retain the underlying definition of a commons that lies in the relationship between a shared resource, a community of end-users and collective organisation. However, beyond this, they have distinctly urban characteristics that negotiate the city's complexity, density, diversity, dynamism, and governance. In this way, urban commons are spatially ambiguous, opportunistic, and cross multiple scales; their communities are diverse, loosely knit and highly networked; and they seek ways to negotiate professional, organisational and institutional frameworks. This summary of urban commons literature points towards three inherent characteristics of urban commons. Firstly, urban

commons are particularly dynamic due to their emergence from and adaption to the fluid context of the city. Secondly, urban commons exhibit socio-spatial interactions between a community of end-users and shared resource that has a physical presence or impact on the city. Thirdly, urban commons are made up of components interconnected to the broader processes of the city and other types of commoning. Together, this helps define an urban commons as a shared resource governed by a community of end-users that acts as a dynamic, interconnected, and socio-spatial component of the city, which is visually summarised in figure 2.25.

The urban common provides a valuable concept for understanding resident involvement in shared landscapes, as it begins to frame and capture some of the characteristics, tensions and challenges that develop from community placemaking in the city. However, the implications for commoning in the city are yet to be fully explored within commons theory. Several authors in urban commons research highlight that the topic remains under- or incompletely theorised. Foster explains, *"it remains a challenge to transpose [commons] insights in the urban context in a way that captures the complexity of the "urban"—the way that density of an urban area, the proximity of its inhabitants, and the diversity of users interact with a host of tangible and intangible resources…"* (2016, p. 285). Despite a growing body of literature written by geographers, planners, urban designers and architects, several authors highlight a lack of research on the spatiality of commons. Pelger (2017), Moss (2014), and Giordano (2003) highlight a lack of knowledge on the spatiality of commons *and "issues of space, place, territory or scale are ubiquitous to the study of the commons, yet have rarely been accorded prime attention"* (Moss, 2014, p. 459). Pelger points out that this is because collective action plays such an essential role in the formation of space in commons and *"the urban commons as a spatial system and the degree that spatial production is conditioned by action—therefore deserve more detailed investigation"* (2017, p. 5).

One ambition of this research is to contribute to the growing body of commons theory through the empirical investigation of shared residential landscapes and incorporating relevant urban theory. To achieve this, the urban theory underpinning the relationship between people and the urban environment is reviewed in the following section around the concept of urban commons.

2.3 The urban theory of commons

So far, this chapter outlines the potential benefits of and need to explore ways of implementing community participation in shared residential landscapes. Urban commons are defined to conceptually frame shared residential landscapes as community governed resources and outline the theoretical complexities of similar practices within an urban context. This section addresses the spatial understanding of urban commons by summarising the urban theory from a commons perspective. This includes presenting urban commons through the urban theories of place, territory, threshold and assemblage. This review forms the basis for developing a theoretical framework for conceptualising shared residential landscapes as urban commons (section 2.5) and goes on to inform the methodological (Chapter 3) and theoretical discussion (Chapter 7) in furthering the integration of commons and urban design theory with the empirical findings of the fieldwork.

Urban commons as places

Place is a setting that is *"made up of a range of spatial and non-spatial dimensions…"* which allow *"a broad understanding of the setting as not only physical but also economic, social and environmental"* (Dempsey, Burton and Smith, 2014, p. 6). Dovey highlights that *"place is an inextricably intertwined knot of spatiality and sociality"* (2010, p. 6), and unlike space, which its numerical extensivity can measure, place is measured by the intensity of its qualities. The unpredictable and complex qualities of urban life produced from this intricate relationship between people and the urban environment have been studied and advocated for by notable urban theorists, such as Jacobs (1961) and Gehl (2006). Their work sought to move away from any simplification and rigidness in top-down design and planning that failed to recognise the crucial contributions of everyday people and their routines lives to places.

Habraken (1998) conceptualises the interplay of top-down and bottom-up levels of human control over the built environment through a framework of three interrelated concepts: *form, place,* and *understanding*. *Form* describes the physical and stable structures of space, often (but not always) designed and implemented by professionals. *Place* then describes the everyday human occupation, adaption and expression of who has access to those spaces. Finally, *understanding* is the social recognition of the norms and expressions of others through their occupation and adaption of places. By framing place in this way, Habraken emphasises the human inclination to manipulate their environment through their occupation and control of spaces to identify and express a sense of ownership and belonging.

Several authors highlight that urban commoning is a form of collective action that creates or regenerates urban spaces and, therefore, can be described as place-making (Blomley, 2008; Foster and

Iaione, 2016). However, this phrase can be limiting when it evokes an approach to creating places by multiple stakeholders that, once made, is static and complete and therefore fails to account for change over time (Dempsey, Burton & Smith 2014). The idea of 'place-keeping' seeks to address this issue by incorporating processes of maintenance and appropriation by multiple stakeholders into a long-term governance strategy for place-making. In Blomley's words, *"commons [are] not so much found as produced"* (2008, p. 320); thus, urban commons should be thought of not only as a form of place-making but a cyclical process of place-making and -keeping, achieved through the autonomous governance by multiple actors to sustain shared resources.

Urban commons as territory

Territory is an area of space with levels of control that define who has access to it and who does not. According to Thwaites, Mathers and Simkins (2013), territorial awareness relates to a human need to achieve self-esteem through others' recognition of their actions in their surrounding environment. Territory, therefore, differs from legal ownership in that it is subjective, perceived through a person's sense of belonging to and control over space. This perceptual notion of territory can be described and understood simply as *'mine', 'yours', 'ours',* or *'theirs'* (Thwaites, Mathers and Simkins, 2013). For example, a person's recognition of ownership over their private garden may be described as *mine*; places belonging to someone else such as a neighbour's garden as *yours*; areas recognised as belonging to a group they aren't a part of, such as a community centre, as *theirs*; and finally an area that they share with others, such as a residential courtyard or neighbourhood park, as *ours*. According to Thwaites *et al.*, ours is conceptually tied to Habraken's concept of *understanding*, described in the following extract:

> *"When we experience ours, we are subconsciously acknowledging a sense of belonging to something, or somewhere, to which others may also feel the same…Ours and understanding share common ground as a kind of psychological realm which binds us together with others in mutually supporting groups, enabling and indeed encouraging, independent expression to project a sense of individual identity within the group, while recognising the presence of boundaries beyond which our sustained acceptance within the group might be jeopardised"* (2013, pp. 64–65).

Urban commons, therefore, represent a collective control over space that can be described as a territorial expression of *ours*, or from the perceptive of someone who is part of the commoning group, *theirs*.

Humans perceive and express territory through markers such as physical barriers, symbolic boundaries, personalisation, appropriation, and physical occupation (Habraken, 1998). These markers are commonly located at boundaries and entrances of a territory, such as gates and doors, to control physical access and convey the appropriate social norms and behaviours expected of visitors or others using the space. Using the example of a social club, markers include *"…territorial expressions, such as*

freedom of access, duration of stay, degrees of personalisation…[of] communities that have control over these territories through possession" (Thwaites, Mathers and Simkins, 2013, pp. 47–48). Urban commons as shared territories are no different in that territorial markers are used to carve out protected spaces for sharing resources within the city. This allows commons to function within the primarily market-driven and contested spaces that make up cities, which can create precarious and sometimes conflicting environments within which to practice resource sharing and mutuality (Huron, 2015). This resonates with Ostrom's first rule for sustaining common-pool resources, corroborating a need to 'create defined boundaries' for both commoning groups and resources to protect them from exploitation and allow rules to be developed to suit local needs conditions.

Urban commons as thresholds

The edges of territories and their expression are significant in either protecting from or opening territorial realms to others. For example, physical barriers such as walls, gates and hedges are commonly used to define the edge of territorial realms to keep others out. However, boundaries, where complete exclusion of others is not required, may be expressed in ways that allow physical or visual access while still communicating that they are entering a realm belonging to another. As Newman describes, *"real barriers include elements like buildings, fences and walls"* whereas *"symbolic barriers include elements like low fences, shrubs, steps, changes in ground level, changes in paving texture, light standards, open portals and so on"* (1976, pp. 108–109). Stavrides describes this type of edge that defines a territorial boundary while still allowing some level of access to others as a *threshold*.

> *"Thresholds may appear to be mere boundaries that separate an inside from an outside, as in a door's threshold, but this act of separation is always and simultaneously an act of connection. Thresholds create the conditions of entrance and exit; thresholds prolong, manipulate and give meaning to an act of passage."* (Stavrides, 2015, p. 12)

The 'threshold' is an important spatial concept that may have significant relevance to urban commons. Boundaries that act as physical barriers that limit access entirely are controversial in commons theory because they act as a form of enclosure or privatisation that at first sight conflicts with the broader idea of commons being open and inclusive. Therefore, 'thresholds' are a potentially helpful spatial concept that defines the territorial edges of urban commons and the expectations of rules and behaviours for using a shared resource while still allowing some openness and broader access.

Others have recognised thresholds that enable a gradual transition between two territorial realms for their social value. Described as a 'soft edge' (Gehl, 2006), margin (Habraken, 1998) or transitional edge (Thwaites, Mathers and Simkins, 2013), the depth of the gradual transition between one territory and another provides an opportunity to create a habitable space within the threshold

itself. This type of transitional edge is common in residential settings, between private dwellings and the public or shared realm, and is what Williams (2005) refers to as a buffer zone. Newman (1973) describes this zone as defensible as it affords residents some level of control over the transition between their front door and the public realm, creating a feeling of privacy and safety. The threshold space also provides more significant opportunities for residents to personalise edges through territorial markers and physical occupation. Finally, a mixture of edge treatments that afford different levels of enclosure and transparency along the gradient of the transitional edge creates a variety of opportunities for what Martin (1996) calls 'hidden-ness' and 'revealing-ness'. Giving options for residents to hide away from or be visible to neighbours, provided additional options for residents to comfortably socialise and were, therefore, less likely to feel threatened and then withdraw from interaction. Therefore, the spatial form and treatment of the edges between shared outdoor spaces and residents' private homes are important in determining the level and type of social interaction and participation in shared residential settings.

Urban commons as assemblages

Assemblage theory provides an orientation for understanding urban places as complex wholes that cannot be reduced to individual components (Dovey, 2010; McFarlane, 2011; Kamalipour and Peimani, 2015). An assemblage refers to the arrangement and putting together of a mix of components, their relations to one another and the processes that bring them into existence. To understand urban places as assemblages, Dovey uses this example of a street:

> *"...a street is not a thing or a collection of things. The buildings, houses, shops, signs, shops, shoppers, cars, hawkers, rules, sidewalks, goods, trolleys, ect. All come together to become the street, but it is the assembled connections among them that are crucial – the relations of buildings to sidewalk to roadway; the flows of traffic, people and goods; the interconnections of public to private space, and of the street to the city...From this view all cities and parts of cities are assemblages."* (Dovey, 2012, p. 353)

The above account describes how the street, as an example of an urban place, is a 'whole' whose qualities emerge from the interaction between parts, emphasising that urban places cannot be fully understood by studying their components separately. Assemblages, thus, have complex causal relations between components that constantly react and adapt to each other, reflecting the broader unpredictable and adaptive processes of cities. Assemblage theory grapples with the idea of cities as open and emergent systems by acknowledging that an assemblage, its components and relationships always react to each other. Dovey describes assemblages as 'complex-adaptive', unpredictable interactions between independent and interdependent parts; when change occurs within one component, all the other parts will respond (2012). Further to this, key contextual socio-economic drivers can destabilise place assemblages, instigating further change, ongoing cycles of growth,

stabilisation, release and re-organisation (Dovey, 2012). This results in an assemblage or urban place that is constantly changing. Described as a state of "becoming" as opposed to "being" (Dovey, 2010), the outcomes can not be foreseen but rather 'emerge'. Harvey has a similar view of urban commons as *"unstable and malleable social relation between a particular self-defined social group and those aspects of its existing or yet-to-be-created social and/or physical environment…"* (Harvey, 2012, p. 73). At the city scale, these dynamic changes occur as cycles of place creation, densification, decline, abandonment, and regeneration, reflecting broader socio-political-economic dynamics, such as changes to public funding, leadership and policy. Therefore, complex adaptive assemblage thinking helps explain the interactions within urban commons and the broader urban context. As Helfrich describes, "*commons do not result simply by combining certain rules and building blocks…the sum of building blocks does not constitute the whole because integrated systems have their own, larger logic…"* (2015, pp. 29–30). As such urban commons as assemblages are never static, but constantly changing and dynamic, and therefore require a holistic understanding that takes into consideration the relationships between its internal components and external components of the city.

Assemblage theory also provides a more complex understanding of territory as a temporary stabilisation within the assemblage subject to abandonment, new claims or negotiation over time. Dovey (2010) describes these inscriptions and erasures of territorial boundaries over time as processes of territorialisation and deterritorialization. Territorialisation produces a temporary stabilisation of place, whereby the rules of use, occupation and personalisation become ordered and familiar, staying the same or similar for the duration of that territorial occupation. As contextual forces continue to change, new conditions can cause territorial boundaries to destabilise, become more porous or even entirely erased, such as when land becomes abandoned or unused, known as a process deterritorialisation. The process of deterritorialisation subsequently creates a void with a high potential to be reoccupied by others, providing further opportunity for new cycles of territorialisation to occur.

Ideas of adaptable and flexible territories are closely linked to Franck and Steven's concept of 'loose space', *"characterised by an absence or abeyance of the determinacy which is common in place types with assigned and limited functions"* (Franck and Stevens, 2006, p. 17). Looseness can occur in planned public spaces that provide accessibility, freedom of choice, diversity in spaces, uses and users, and anonymity between users. By contrast, looseness may be discovered in 'non-places' (Augé, 2008), leftover, abandoned or transient spaces which are open to new uses because they have no intended or fixed use, fall outside of control or regulation or otherwise lack a sense of identity or territorial belonging. Such spaces afford unanticipated forms of appropriation, mainly when the design intention is absent or ambiguous. Open and adaptable design approaches attempt to incorporate looseness into

the design of space by leaving some elements incomplete, such as self-build, infill, plot-based or self-finish architecture (Porta and Romice, 2010; Thompson, 2015; Porqueddu, 2018).

Urban commons as assemblages imply that their emergence, formation, and existence are difficult to predict, understand, and document due to their constant becoming. As Williams describes, *"[c]ommons are always imperfect, becoming, and always in process"* (2018, p. 24). This helps to explain why available, unused, abandoned or forgotten spaces in the city can become a catalyst for new commons and how their physical properties can afford certain behaviours and activities. This was the case in the guerrilla food growing project 'Incredible Edible' where *"activism began with a visual statement of intent: neglected spaces, including a derelict health centre, a canal towpath and a graveyard, were planted with edible produce"* (Dobson, 2017, p. 1024). Colding *et al.* attribute urban green commons to "*the release and reorganization phases of the adaptive renewal cycle, i.e. when cities need to address pertinent and emerging problems…"* (2013, p. 11). Further to this, Ghorbani and Herder link assemblage thinking to the idea of urban commons at a meta-level in recognising that "*the knowledge on the urban commons is built through continuous additions and exchanges of information…"* (2021, p. 3). Assemblage theory, therefore, provides an advanced understanding of urban commons that requires us to recognise its processual, complex and emergent characteristics.

Urban commons as slippages

Dovey often uses dualistic concepts to describe the inner dynamics of places as urban assemblages (e.g. Dovey and Polakit, 2010) that occur due to shifting tensions between two states, such as territorialisation and deterritorialisation. Although these are seemingly opposing ideas, one always inevitably follows the other, which are inherently linked and dependant. Dovey describes the *"conceptual oppositions that resonate with each other…co-exist[ing] in a mixture rather than a dialectic relation"* (2010, p. 22) as 'twofold concepts' with potential for 'slippages' to occur between the two states. Another example of a twofold concept is the tree and rhizome, terms describing the structure of places as either *"tree-like systems organized hierarchically with roots, stem and branches"* or *"the rhizome (grass, potato, bamboo) which is characterized by horizontal lines of movement, networks and connectivity"* (2010, p. 20). According to Dovey, cities are a mix of both. Tree-like structures exist where there are hierarchies of spaces, power, and organisation, such as government implemented planning regulations, which primarily seek to impose structure and rules on spaces in a top-down manner. Rhizomatic structures, by contrast, describe horizontal, network like connections that encourage movement and interconnectivity. Dovey likens rhizomes to open markets that depend on *"networks of information, goods and people"* (2010, p.21) and other forms of modes of sharing stemming from organic and bottom-up actions. Although tree-like and rhizomatic structures contrast, each system can either enable or discourage the other. The idea of urban slippage (Dovey & Polakit 2010) recognises

the ability for shifts to occur across the continuums of polarised opposites, such as tree-rhizome structures, private-public, interior-exterior, and temporary-permanent, in urban places (Dovey, 2010; Dovey and Wood, 2015).

The top-down, bottom-up relations associated with the two-fold concept of trees and rhizomes are instrumental processes in creating urban spaces. Top-down processes, including laws, planning policies, building regulations, and their associated professions, are necessary to enable the technical know-how to efficiently implement stable and large-scale infrastructure (Habraken, 1998). By contrast, bottom-up processes are found in the routine, incremental practices of everyday people, communities and grassroots movements, described as being *"analogous with processes of growth characterized as more evolutionary and dynamic and often associated with small scale organizational systems"* (Heath, Thwaites and Simpson, 2017, p. 1). Although top-down processes are necessary to provide infrastructure and coherent urban forms and planning, large-scale and overly rigid outputs can limit the ability of places to adjust to change over time (Porta and Romice, 2010; Madanipour, Miciukiewicz and Vigar, 2018). By contrast, the incremental characteristics of small-scale, bottom-up processes are more readily adaptable to change and associated with greater 'community resilience' (Montelongo Arana and Wittek, 2016; Baibarac and Petrescu, 2017), but bottom-up community-led practices may struggle to make meaningful change beyond very local scales without additional support, funding and resources (as discussed in section 2.1). A need to balance these two approaches to maximise adaptability is a key consideration for the design and planning of urban places (Romice, Porta and Feliciotti, 2020)

Although assemblage theory highlights that urban places are produced dualistically from top-down and bottom-up approaches (Dovey, 2010), contemporary urban design practice has primarily tended to take a polarised view of professional and grassroots input (Madanipour, Miciukiewicz and Vigar, 2018; Porqueddu, 2018; Arefi and Kickert, 2019). In this sense, community-led or informal practices may be seen to be an inconvenience to generally exist outside of official planning, policy and legal frameworks. 'Scalar slippage' is a concept seeded from assemblage theory that emphasises the reciprocal and complementary aspects of top-down and bottom-up processes within urban design (Heath, Thwaites and Simpson, 2017). Others have previously recognised this idea in placemaking and -keeping (Burton, Dempsey and Mathers, 2014). On this basis, scalar slippage entails enabling the operation of bottom-up modes of place delivery within top-down dominated urban decision-making. Several authors provide examples of partnerships with design practitioners, organisations and local institutions as a potential route to easing the 'slippage' between top-down and bottom-up approaches (Petrescu, Petcou and Baibarac, 2016; Fernandez Arrigoitia and Tummers, 2019; Lang, Carriou and Czischke, 2020).

At the surface level, bottom-up rhizome-like processes most closely align with the concept of 'commoning' as a non-hierarchical community-led practice of governing and maintaining shared resources. However, as discussed in the previous section, commoning in the city's dense, contested, and planned spaces may place greater demand on commoning groups to negotiate top-down planning and legal frameworks. Further to this, emerging examples demonstrate that urban design practitioners, such as architects and landscape architects, may have important roles to play in this. Ostrom refers to this partnership between *"individuals who are not 'in' the same organization"* contributing to *"produc[ing] a good or service"* (1996, p.1073) as 'co-production', a term that emphasises the equal inputs of both professionals and end-users into the design process. Therefore, urban commons may provide examples of scalar-slippage in practice through co-production with urban design practitioners and other intermediary consultants and organisations.

2.4 Cohousing

Cohousing is a type of community-led housing model that demonstrates residential involvement in shared landscapes as urban commons. Cohousing is frequently described as an alternative housing form integrating smaller-than-average private residences with communal spaces, such as the 'common house', laundry facilities and gardens (McCamant, Durett and Hertzman, 1994; Meltzer, 2001; Jarvis, 2011; Ruiu, 2014). Although the specific layout, size and density of other cohousing developments are unique to a particular site and community, cohousing developments often follow key design principles for promoting social interaction (Williams, 2005; Ruiu, 2014). Common spatial characteristics in cohousing include clusters of inward-facing dwellings, centralised communal facilities including a common house, and pedestrianised central green spaces with car parks at the site's edges (figure 2.26).

In addition to the typical spatial characteristics of cohousing, the social aspects are essential to defining cohousing (Fromm, 2012; Tummers, 2015). High levels of resident participation, self-organisation and collective governance (Chiodelli and Baglione, 2014; Ruiu, 2014; Jarvis, 2015) distinguish cohousing from other housing with shared facilities, such as 'condominiums' or commercially managed facilities (Jarvis, 2011; Ruiu, 2014, 2016b). Cohousing groups typically form from people with a shared ambition to live more communally and act as their own developers. As such, cohousing groups are often formed around shared values and intentions (Sargisson, 2010; Chatterton, 2013; Tummers, 2015, 2016), enabling group cohesion and consensus in participatory decision-making. In this way, cohousing groups are recognised as an intentional community. Cohousing values for sharing resources are driven by a shared desire to find alternatives to mainstream housing and lifestyles that are ideological (communitarian, political activism and sustainable) and pragmatic (shared childcare, independence in older age and affordable housing). However, increasingly groups

are partnering with 'mid-way' developers, such as housing associations, non-profit organisations, design professionals and project managers, to negotiate complex planning and build processes and share the risks involved (Lietaert, 2010; Fernandez Arrigoitia and Tummers, 2019).

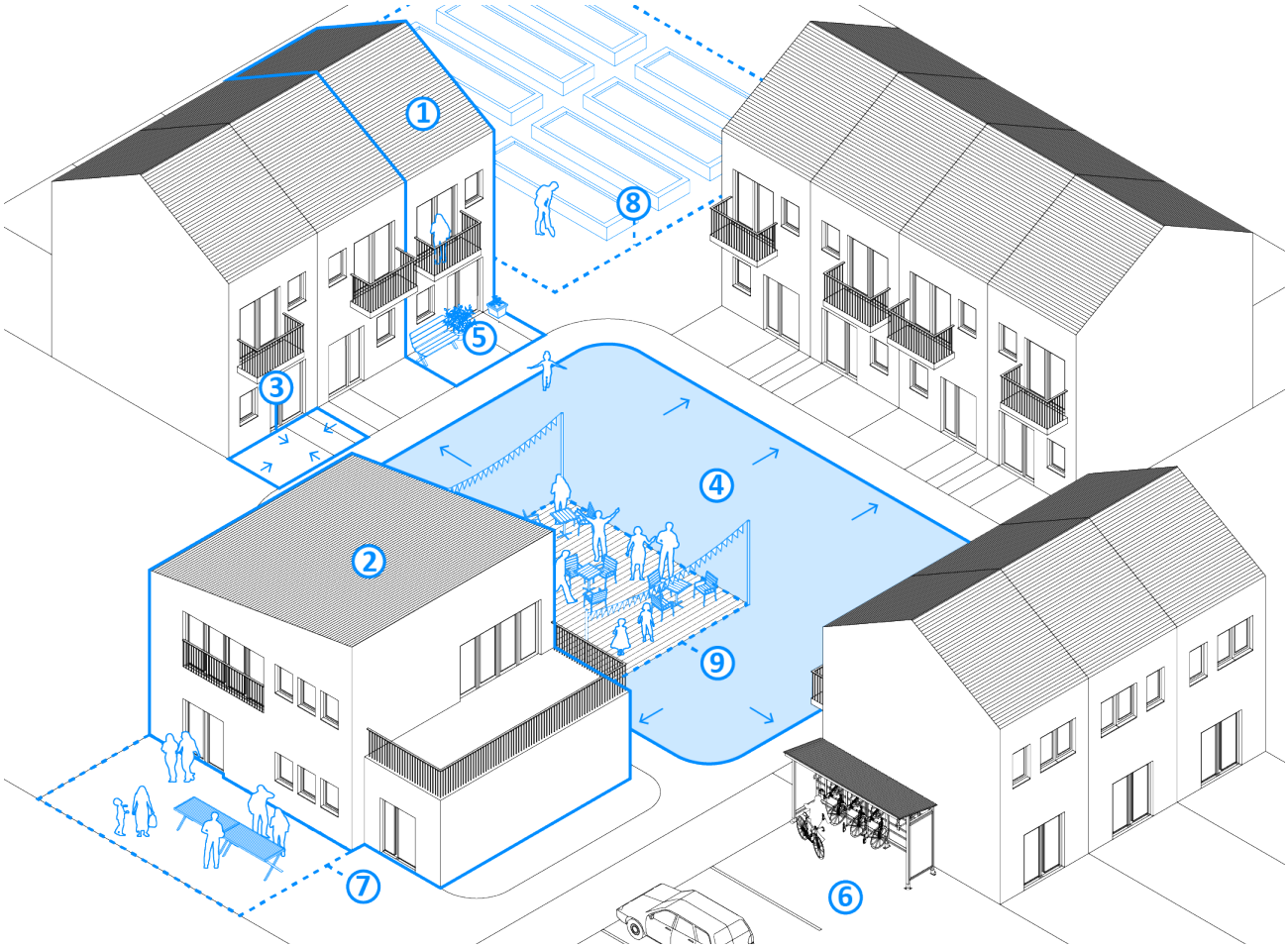


Figure 2.26. *A typical established cohousing development illustrating some of the defining spatial characteristics. These include the combination of private dwellings (1) and communal resources such as the common house (2); the design of spaces to promote social interaction through smaller private spaces (3), larger communal spaces (4), natural surveillance and buffer space (5) and car parking at the edges of the site (6); and residents participating in the wider community (7), through the maintenance of communal spaces (8) and communally organised events (9).*

Unlike co-operatives or Community-Land Trusts, which are specific organisational and legal models of community-led housing developments, cohousing does not specify a particular tenure or ownership regime. The community-led nature of cohousing allows the development to respond to the specificities of the site and group, and the ability for each group to choose the most appropriate legal, financial and governance structure, so that no two cohousing developments are the same. However, what all cohousing groups have in common is an intention to incorporate sharing and participation within multiple aspects of residential living. This includes shared participation in the commonhouse and communal outdoor spaces, mutual support and exchange between residents, design and decision-making processes, and long-term governance and maintenance.

In summary, cohousing is defined by the following characteristics identified in the literature:

- An intentional community founded on shared values.
- A development combining private dwellings and communal resources, including a commonhouse.
- The site is designed according to principles that promote social interaction.
- Residents participate in all stages of the development, often with support from various professionals.
- Communities are self-organised and collectively governed, making decisions, defining rules and selecting new members by consensus.
- Becoming an increasingly urban phenomenon.

  (McCamant, Durett and Hertzman, 1994; Brenton, 1998; Williams, 2005; Sargisson, 2010; Jarvis, 2011; Fromm, 2012; Ruiu, 2014)

Cohousing has been selected as the case in this research as it provides a helpful example of resident involvement in shared landscapes. Although other types of community-led housing may demonstrate community involvement in shared landscapes, they do not consistently incorporate aspects of sharing and participation in the same way as cohousing. For example, *Community Land Trusts*, not-for-profit community organisations that protect land and buildings for community use, do not necessarily involve residents in the design and management processes of the development. Similarly, *self-build housing*, a development where residents build their own houses, do not always have the same collective approach to the site design and maintenance. Furthermore, *housing co-operatives*, a specific form of affordable ownership and management model, do not always focus on the design of outdoor spaces for sharing and social interaction. Eco-villages, which have the most significant overlap with cohousing (Tummers, 2016, see figure 2.27), are more closely linked with rural typologies. Cohousing is set apart from other rurally centred intentional communities, such as eco-villages, as it is more commonly located within cities. According to Tummers, contemporary cohousing groups seek the advantages of urban locations, including proximity of services, public transport and accessibility, with rural qualities *"such as gardens, space for children or village-like settings for informal interaction and small-scale enterprises"* (2016, p. 2035).

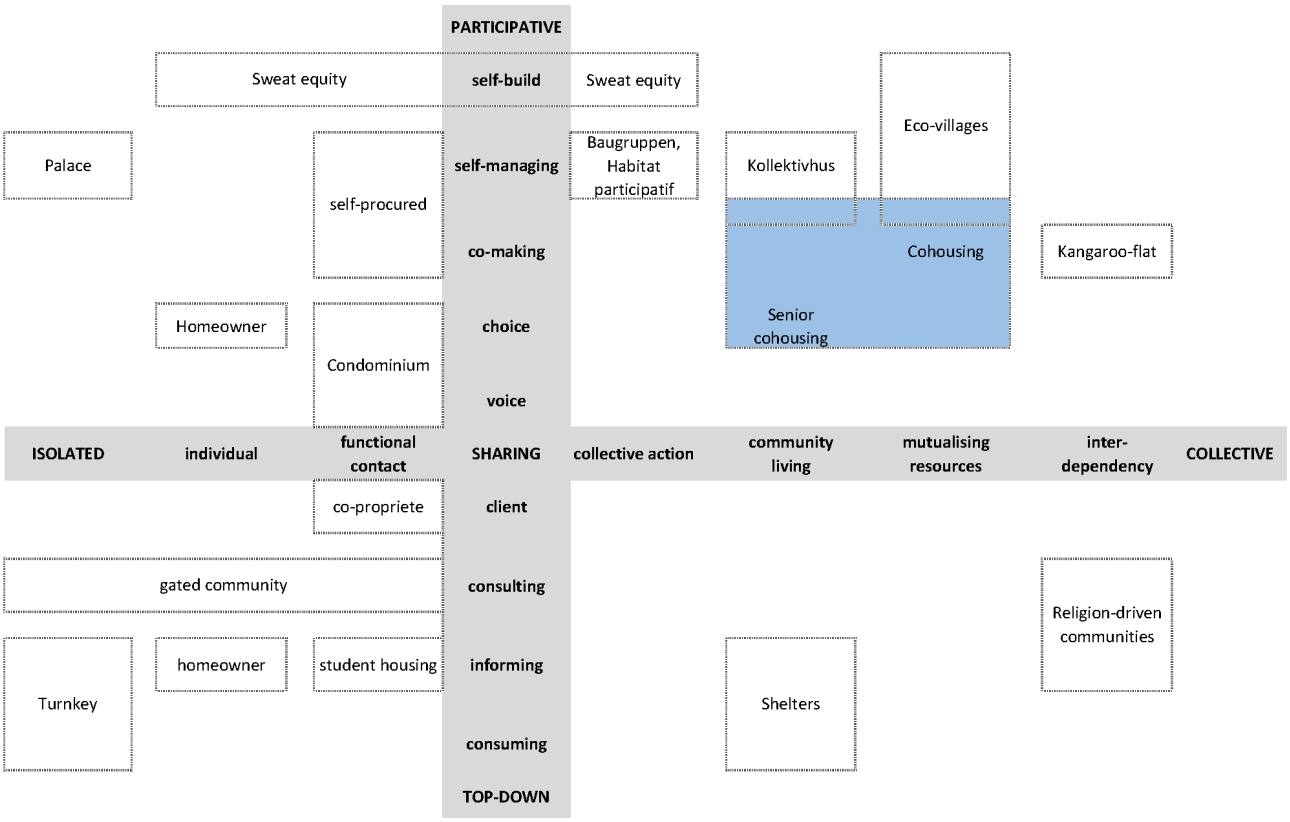


Figure 2.27. *Diagram positioning cohousing among other shared housing* (adapted from Tummers, 2016, p. 2034).

Confusingly, cohousing incorporates different types of development, including architect-designed, retrofitted and self-build (Beck, 2020), and therefore can adopt elements from other community-led housing types, such as a co-operative ownership model or self-build elements. However, the specific governance principles that guide the participative sharing ethos and design principles that promote a shared neighbourhood layout, combined with its increasing popularity in the UK urban context, make cohousing a relevant case study in this thesis. The recent wave of urban cohousing in collaboration with 'mid-way developers' and 'intermediary organisations' provides potential insight into how resident participation can be achieved as a part of a sustainable approach to urban development. To understand what is already known about these two aspects more clearly, this section will summarise the historical and global context of cohousing, followed by a critical review of cohousing in the UK.

Historical and Global Context

The underlying ethos of cohousing can be traced back to similar experiments in radical living in the utopian communities and communes of the 1960s. Cohousing is widely believed to have originated in Denmark in the 1970s (McCamant, Durett and Hertzman, 1994; Lietaert, 2010), although comparable collective housing projects were simultaneously emerging in other parts of Northern Europe around the same time (Meltzer, 2001). The first Danish cohousing hoped to build *"better social relationships and a deeper sense of community"*, whilst Swedish 'kollektivhuser', similar to the Dutch

interpretations of cohousing, *"sought to reduce the burden of housework…and improve the lot of children with working (often, single) parents"* (Meltzer, 2001, p. 154). In Northern Europe, the benefits of communal living have been widely recognised, and in some countries, cohousing has quickly become established and institutionalised as a mainstream form (Meltzer, 2001; Lietaert, 2010).

In the 1980s, a second wave of cohousing emerged in North America, attributed mainly to the advocacy and publications on cohousing by American architects McCamant and Durret (1994). Although 'second wave' cohousing shared similar design principles with Danish cohousing, unlike European models, North American cohousing was mostly resident funded and developed without public financial support, leading to the exploration of new procurement methods. Another distinct difference is the focus on environmental sustainability and reduction in material consumption as fundamental values driving cohousing development, with practices such as recycling, composting and car-pooling key features of cohousing lifestyles. The 'first' European and 'second' American waves of cohousing are well documented in cohousing literature, but Meltzer (2001) suggests there is a third wave of cohousing around the Pacific Rim across New Zealand, Japan, and Korea. The third wave highlights the cohousing model's continued application worldwide and adaption to different cultural contexts in addressing the challenges of accessibility, affordability, and ecological sustainability. (Meltzer, 2001)

Cohousing did not reach the UK until the end of the 1990s; Springhill cohousing was the first purpose-built cohousing project (Jarvis, 2011), but collective forms of living existed in the form of small housing co-operatives since the 1970s (Jarvis, 2015). The initial uptake of cohousing in the UK has been slower than in other countries, but pioneering projects have generated a current demand for cohousing (Jarvis *et al.*, 2016; Fernandez Arrigoitia and Tummers, 2019). Various government policies and funding, such as the Community-led Housing fund (Homes England, 2019), have animated a renewed interest in cohousing and a wave of new developments. Despite this, cohousing still only accounts for a tiny proportion of new housing construction in the UK (Jarvis, 2011), with an estimated 21 completed projects and a further 47 in the pipeline (UK Cohousing Network, 2019). Jarvis *et al.* suggest this is because establishing a cohousing project is *"a long and difficult process"* in which *"many cohousing groups struggle to get off the ground"* and that it would be *"more widely adopted if planning, financial and institutional infrastructures were better designed to support it"* (2016, p. 6). Despite recent government financial support, residents themselves mainly finance projects (Ruiu, 2015) with funding remaining a crucial barrier to development. To combat this, more recently, some groups have created partnerships with community-focused developers such as housing associations to share the financial risk and negotiate top-down barriers (e.g. Ruiu, 2015; Arrigoitia *et al.*, 2020). The most recent wave of contemporary cohousing in the UK also demonstrates multiple drivers that differ from other countries' cohousing movements in the 1970s (Jarvis, 2011). These include focusing on critical approaches to

energy efficiency, housing affordability, reduced energy bills, tackling loneliness in older age, and supporting family lifestyles (Tummers, 2015). This variety can be seen in the cases of LILAC cohousing, which focuses on low impact and affordable living (Chatterton, 2013), and New Ground cohousing, a scheme for older women (Brenton and Argent, 2020; Fernández Arrigoitia and West, 2020). A diversification of cohousing reflects the continued interest in the UK to address specific needs and realistic approaches for more sustainable lifestyles.

New cohousing development in the UK has led to an increased academic output on the topic, based on several seminal works focusing on the architectural aspects from the European and American waves of cohousing. Books by Fromm (2012), McCamant and Durrett (1994; 2011), Durrett (2009), and Meltzer (2005) advocate cohousing for its positive attributes, promoting it as a more sustainable housing form, and acting as a handbook for advice and guidelines for aspiring groups. They provide extensive information and anecdotal evidence from multiple case studies suggesting numerous benefits of cohousing. Cohousing is typically considered a strategy for sustainable urban residential development by offering compact densities, high-quality neighbourhood space and architecture, and access to community amenities. In the context of globalisation and increasing urbanisation, cohousing presents an opportunity for creating local identities and communities, a sense of belonging and companionship in older age (Brenton, 1998; Brenton and Argent, 2020), and well-being and mutual care (Jarvis *et al.*, 2016). From an environmental and ecological perspective, the social practices of sharing in cohousing lessen residents' environmental impact by reducing consumption and waste production and by incorporating advanced environmental technologies and building standards (Meltzer, 2005; Lietaert, 2010; Jarvis *et al.*, 2016). In addition, the centralising of resources and services, such as household appliances, enables a more affordable cost of living (Jarvis *et al.*, 2016). Finally, some cohousing groups have sought out models that ensure the long-term affordability of housing (e.g. Chatterton, 2013) or collaborated with Housing Associations or employing self-build methods to reduce costs (Ruiu, 2015; Fernández Arrigoitia and West, 2020).

Although the wide-ranging potential of cohousing as a sustainable approach to residential development is well supported, others have criticised cohousing literature for a tendency to focus only on the positive aspects and overlook its challenges and downsides (Chiodelli and Baglione, 2014; Chiodelli, 2015; Tummers, 2015). Recent literature begins to address some of these issues surrounding cohousing, and as such, a more complex and critical picture is emerging. The following subsections, around the topics of starting out, working with professionals, internal social dynamics and external relations, explore what is known about cohousing in the UK, including the more critical and complex narratives emerging.

Starting out

As outlined in the definition of cohousing, shared intentionality is a driver for cohousing groups forming, setting them apart from similar housing forms such as gated communities (Ruiu, 2014). In a structured literature review of cohousing literature, Lang *et al.* (2020, p. 11) identify *"a large continuum of motivations ranging from pragmatic to more radical intentions"* with residents not necessarily sharing the same political ideologies and beliefs. However, cohousing residents do share an intention to create new ways of living through collective participation, an *"ethos of sharing"* (Jarvis, 2015) and often share a broad intention for an 'eco-friendly' way of life (Meltzer, 2005).

Before realising their shared intentions, cohousing groups must tackle the challenges of working *"across a set of complex institutional and governance frameworks…including legal, financial, planning, ecological, community liaison, design and governance"* (Chatterton, 2013, p. 1667). Early adopters describe extensive difficulties in negotiating the legal, planning and construction frameworks structured around conventional building procurement (Chatterton, 2013). In contrast to Northern Europe, where some cohousing communities are state-financed as part of social housing policy (Sargisson, 2010), UK cohousing groups are mainly self-funded. Finding affordable land, competing with developers, raising funds and negotiating complex planning and building procedures are common barriers to cohousing groups in the UK (Scanlon and Fernández Arrigoitia, 2015). A lack of social, technical and financial expertise results in groups 'struggling to get off the ground' and 'a tendency to reinvent the wheel' (Jarvis *et al.*, 2016; Fernandez Arrigoitia and Tummers, 2019). As such, the UK's cohousing development process is long-winded, with residents liable for the total costs, risks, and long-term maintenance. Some argue that the upfront costs of cohousing contribute to an elite housing model with communities dominated by an older, well-educated, middle-income demographic (Ruiu, 2014, 2015; Tummers, 2016). In addition, forming groups around similar values and self-selecting recruitment processes reinforce homogeneity within the community (Williams, 2008; Jarvis *et al.*, 2016). As such, there are concerns that those who could most benefit from cohousing face more restrictions in accessing it (Epting, 2018). This echoes the challenges around how cohousing can be 'scaled-up' to become a widely implementable sustainable housing model for a large segment of society (Tummers, 2016).

Working with professionals

To address these skill and knowledge gaps, cohousing communities reach out to various networks, organisations, and professionals for external input (Hacke, Müller and Dütschke, 2018). In the UK, Community Led Homes, *"a partnership project between the Confederation of Co-operative Housing, Locality, the National Community Land Trust Network and UK Cohousing"* (Community Led Homes, 2018a), act as a network for similar community-led housing groups and support hubs, as well

as a providing resources of information, guidance, case studies, funding and contacts (Fogele, 2016; Lang, Chatterton and Mullins, 2020). Individual residents utilise family, friends and professional, activist and political networks to share knowledge and skills in tackling challenges such as lobbying local governments (Chatterton, 2013; Fernandez Arrigoitia and Tummers, 2019). Further to this, cohousing groups may hire and tender a range of professionals such as financial advisors, lawyers, designers, engineers, and contractors, to gain the technical expertise needed for housing development. There are three main approaches to cohousing development: firstly, an outside developer works with the group to build the site to their specification; secondly, cohousing communities become their developers financing the land acquisition and construction themselves; or thirdly, an outside developer constructs a cohousing site without the input of any future residents, and sells them to prospective buyers (Scanlon and Fernández Arrigoitia, 2015; Jakobsen and Larsen, 2019).

Although external developers, design professionals and building contractors are often necessary for cohousing communities to realise the building of their project, the pioneering and experimental nature of cohousing in the UK is often counter to the standard conventions of traditional developers and professions. As such, these professional stakeholders may conflict with the fundamental ethos of the cohousing group. Arrigoitia & Tummers (2019) suggest that many typical housing professionals are not sensitive enough to community needs and 'lay' knowledge. Instead, they observe specialists emerging from traditional professions, including designers, projects managers, housing associations, academics and cohousing residents, who have been able to develop a niche in cohousing development from personal interests and experiences. Identifying as mid-way professionals and acting as consultants, cohousing specialists can take on multiple roles, including design, management, and group facilitation. Partnering with social housing providers (Ruiu, 2015; Fernández Arrigoitia and West, 2020) and built environment professionals (Fernandez Arrigoitia and Tummers, 2019) has been adopted as a procurement route by several recent cohousing developments in the UK to create more inclusive cohousing models. By partnering with a Housing Association, The Threshold Centre in Dorset reduced the cost and time of construction and offered a mixed tenure with 50% allocation of social housing, suggesting partnerships with external bodies could create more inclusive cohousing models (Ruiu, 2015). However, the same study also highlights that collaborating with external bodies can restrict the 'intentionality' and sense of community among residents due to the instigation of a 'top-down' logic affecting the group's internal cohesion. Therefore, a specific skill set may be required to balance top-down dissemination of expertise and facilitate bottom-up participation, know-how and capacity.

Designers such as architects and landscape architects play an essential role in facilitating top-down and bottom-up processes within the participatory design process. The participation of residents in designing the buildings, site layout, and outdoor spaces is argued to be emblematic of cohousing

and is noted for its importance in strengthening relationships and establishing decision-making processes (Ruiu, 2016a). As well as contributing traditional technical design specialism, designers also use social skills to facilitate group dynamics, communication and decision-making in the participatory design process (Devlin, Douglas and Reynolds, 2015; Hammond, 2018). Designers' experience with the planning process allows them to act as 'middle-agents' between cohousing groups and local authorities to negotiate planning frameworks (Fernandez Arrigoitia and Tummers, 2019). Finally, designers may take on expanded roles in cohousing development, including identifying sites, developing the brief and time and cost management (Tummers, 2016; Hammond, 2018; Fernandez Arrigoitia and Tummers, 2019). Although a few studies have begun to explore the new role of designers in cohousing, the 'mid-way' profession is still emerging, and professionals specialising in cohousing development are rare (Fernandez Arrigoitia and Tummers, 2019). Hammond highlights that there is not enough critical understanding of participatory design within cohousing *"beyond the notion that cohousers should be "involved" in the design process to some extent"* (2018, p. 201). In addition, residents may not be aware of the expanded roles designers can play in the process and their value in the facilitation process (Fernandez Arrigoitia and Tummers, 2019). Of the limited texts that do explore the role of designers in cohousing, they are architecture centred, with little discussion on the role of landscape professions or how participation in the design of outdoor spaces differs from that of building design.

Internal Social Dynamics

A key feature of cohousing is creating a way of life focused on building communities. Both 'self-created' groups and those assisted by professionals and organisations are formed around shared intentions that act as the 'glue' binding cohousing communities together in the longer term (Jarvis, 2015). This social 'glue' is required in the early stages to form initial bonds and enable decision-making between the initial core members in the design development stages. The shared intentions of the group also act as a mechanism for attracting new members with compatible motivations, values and attitudes. Over time, the shared intention reinforces ideological homogeneity through the groups' self-selection of new members (Chiodelli and Baglione, 2014; Ruiu, 2016b). Even though communities require ideological homogeneity, in terms of shared intention, studies found that homogeneity in group demographics was not required for group cohesion and social interaction. Williams (2005) found that diversity within the group demographically, such as age and income, fostered more social interaction because it added to the variety of activities, relationships, and resources offered to residents, providing residents' mindsets remained similar. The groups' intentionality and a sense of purpose are enacted in everyday life through shared activities, such as preparing shared meals, communal maintenance, contributing to management tasks, sharing equipment, food and knowledge, mutual care and emotional support (Jarvis, 2015; Ruiu, 2016b). According to Sanguinetti (2014),

cohousing creates more sustainable communities by encouraging social and environmental connections.

The design of cohousing developments are focused around design principles that reinforce a sense of community, encourage social interaction and enactment of shared intentions, including: the provision of communal facilities, natural surveillance, car parking at the peripheries of the site, buffer zones between private and public spaces, shared facilities positioned on busy shared routes, clusters of smaller-than-average private dwellings, and a centrally positioned Common House (Williams, 2005). These design principles aim to create more opportunities for residents to cross paths and interact with each other face-to-face frequently. Although cohousing design promotes social interaction, 'social interaction by design' is not sufficient to guarantee community on its own. It is argued that organisational structures and personal social skills are required in combination with socially designed space to enable positive social relationships and cohesive communities (Williams, 2005; Jarvis, 2015).

Organisational and governance structures in cohousing communities are self-defined by residents to reflect their shared intentions; as described by Brenton and Argent, *"we made agreements about how we wanted to live and drew up policies to underpin our aims and values"* (2020, p. 1). Governance in cohousing requires non-hierarchical participation from all residents in the decision-making process to ensure all members' views are considered. The whole group must consult actions and decisions affecting the shared spaces or community way of life before making changes (Ruiu, 2014). Many cohousing groups adopt a "consensus-based" approach to decision-making, requiring unanimous agreement to ensure all residents' views are considered (Ruiu, 2015). Consensus-based decision-making is considered to be a highly democratic system, but many point to the challenges in managing the process, which can quickly become time-consuming, tedious and contentious (Williams, 2005; Renz, 2006; Sargisson, 2010; Jarvis, 2011; Axelsson, 2014; Ruiu, 2016b). Participation in decision-making can produce conflict, 'meeting fatigue' or withdrawal from the group. To conclude decisions promptly and deal with conflict, some groups fall back on majority voting or ask individuals not to block decisions so they can be acted upon (Ruiu, 2015).

Interpersonal social skills play an essential role in resolving conflict and making the decision process more efficient (Williams, 2005). Jarvis speaks of residents practising *"respectful dialogue and conscientious listening"* and a need for a *"culture of openness…to enable participants to transcend their own prejudices, habits and narrow interests"* (2015, p. 100). Residents of the Older Women's Cohousing in London also describe a process of learning to become comfortable with a difference in opinions (Brenton and Argent, 2020). Although cohousing relies on 'highly evolved' people skills, Jarvis observes that these skills are *"not always fully developed"* (2015, p. 100). Differences can emerge between the communities' core values and how they are played out in everyday private lives, creating 'toxic'

relationships (Jarvis, 2015), reducing social interaction and increasing withdrawal from the community (Williams, 2005; Axelsson, 2014). Although these might be extreme scenarios, they highlight the importance of groups having mechanisms to deal with conflict if it arises.

External relations

The strong internal social relationships formed within cohousing developments are well documented, but the external relationships between cohousing and wider neighbourhoods are unclear. Several authors criticised the lack of integration between cohousing and surrounding neighbourhoods (Sargisson, 2010; Chiodelli, 2015). The challenges for wider neighbourhood integration stems from both the spatial and social characteristics of cohousing. The inward-facing housing clusters and centrally located common spaces promote internal community cohesion, markedly contrasting with conventional 'street-facing', 'private-back' orientated housing layouts, discouraging spatial and social integration with surrounding neighbourhoods (Meltzer, 2005; Durrett and McCamant, 2011). Secondly, cohousing communities' self-sufficiency and cohesive identity can further segregate them from surrounding neighbourhood communities (Chiodelli and Baglione, 2014). Finally, Fernandez Arrigoitia and West (2020) suggest that residents' capacity to maintain relationships with external friends and family alongside the internal relationship within cohousing can become stretched.

The shared-yet-private nature of cohousing has led some authors to align cohousing with other private residential communities such as 'gated communities' (Chiodelli and Baglione, 2014; Chiodelli, 2015). Gated communities are viewed negatively regarding their social sustainability and integration with the wider neighbourhood, representing a retreat from societal responsibility. However, Ruiu (2014) highlights several key aspects that differentiate cohousing from gated communities. Firstly, unlike gated communities, cohousing groups commonly intend to create connections with neighbours and become a part of the wider community. To transcend the limitations of the inward-facing spatial layouts, cohousing communities may open communal facilities to the public by hosting public events or renting out facilities to external groups, neighbours and the wider public. Although it is common for cohousing groups to experience disapproval from neighbours during the planning, construction and early phases of living on the site, this can dissipate over time as cohousing communities establish relationships with neighbours (Ruiu, 2016b). Secondly, cohousing groups are less likely to impose physical boundaries around the entirety of the site and restrict outside access entirely like gated communities. Any gates are typically kept unlocked or open during the day, and a feeling of security is achieved through a neighbourhood watch approach with high levels of trust and natural surveillance. Tummers (2015) suggests that cohousing can considerably impact the local scale, although this is still limited at the urban and regional scales. Although debates remain around whether the benefits of

cohousing extend beyond cohousing residents and the site boundaries, how cohousing communities achieve local integration are worthy of further understanding.

Challenges for cohousing in the UK

The review of current literature on cohousing highlights several challenges and research gaps related to residents' involvement in shared outdoor landscapes. Firstly, new groups are challenged by a lack of experience and expertise required to negotiate the complexity of housing development. Even with sufficient funding, knowledge and resources, the process of new cohousing development remains slow and complex in the UK, creating additional barriers to more marginalised groups and promoting potentially exclusive cohousing communities. Secondly, working with external 'mid-way' development partners is necessary for most groups to address these challenges. However, a lack of understanding of how this affects the roles and skills required of built environment professions and the participatory design process within cohousing. Thirdly, cohousing groups appear to boast strong internal social relationships that support shared involvement in outdoor spaces, but this is often complex and conflicted in reality.

Further empirical evidence is required to understand how individual social relationships, community governance and spatial organisation combine to address conflict and enable collective involvement over time. Finally, although the debate around how cohousing groups benefit wider society continues, the underlying presumption is that co-housing communities interact positively with the wider neighbourhood. More needs to be understood about how cohousing groups can remain open to the outside while balancing internal community relations and a feeling of security.

Various resources for cohousing groups are already available, including handbooks, design principles, and case studies. However, these resources are predominantly architecturally focused and based upon case studies in the US and mainland Europe. Less is known about how these are applied in the UK context, what outdoor spaces residents create themselves and how they are used, maintained and managed over time. Further to gaining a multidimensional understanding of cohousing from a landscape perspective in the UK, there remain questions of how this information can be applied by future cohousing groups, particularly as the context-specific nature of cohousing means that communities cannot simply be designed or formulated generically. This suggests that less emphasis should be placed on standard design principles and models and more on tools that enable the interaction between residents and professionals to flexibly implement 'learnt lessons' from other groups to suit their circumstances. Sharing lessons learnt from existing UK cohousing groups in an implementable way could contribute to making cohousing more accessible in the future.

The research gaps within the cohousing literature also mirror those found more broadly in community participation in residential landscapes. Addressing the challenges and gaps in cohousing

literature can also help to contribute empirical knowledge on what supports and hinders community participation in residential settings. Although cohousing is a special case when considering the topic of community participation more broadly, there are lessons to be learnt from cohousing that have the potential to be tested and applied in other community residential settings. These lessons could help overcome some of the drawbacks and challenges related to community participation, such as finding effective ways to apply professional expertise and promote a balance between internal group cohesion and external relationships. This research responds to these challenges by identifying patterns of urban commoning in cohousing landscapes to capture the existing knowledge of resident participation in shared landscapes held by cohousing communities and delivered in a format that can be shared with and applied by other residential communities. In doing so, this research will document other cases of cohousing, providing further empirical examples from a landscape perspective in the UK.

2.5 A Conceptual Framework for Cohousing landscapes as Urban Commons

Cohousing has been identified as a real-life case of residents' collective participation in shared landscapes, potentially identifying what can enable or deter urban commoning phenomenon. The urban commons concept, relevant urban theory and cohousing literature reviewed so far in this literature are combined here to create a framework for conceptualising cohousing landscapes as urban commons. It conceptualises resident participation in cohousing landscapes as the dynamic relationships between social, spatial and organisational components, occurring across multiple scales and as part of a complex urban whole. This provides a good foundation for the research methodology, outlined in the following chapter, by defining the scope of data and research field required to answer the research questions.

Multiple authors highlight the different dimensions involved in cohousing, including visions, values, organisational, relational and physical aspects (Williams, 2005; Bouma and Voorbij, 2009; Beck, 2020). For example, Williams (2005) identifies personal, informal, and formal social and physical aspects that enable social interaction in cohousing landscapes. Although Williams's study does not seek to address community participation in shared residential landscapes specifically, she highlights that social interaction often takes place through using, creating and maintaining spaces together and designing spaces and developing organisational structures and rules. The key components of the urban commons (social, spatial and organisational) reinforce this view and provide a framework in which to collate and understand what type of data could reveal the enabling factors of urban commoning in cohousing landscapes, as summarised in figure 2.28.

Spatial

Social

Organisational

Spatial	Social	Organisational
Density, proximity, size, use of buffer spaces, and provision of communal spaces. (Williams 2005)	*Personal characteristics, attitudes, availability, circumstance, health, motivations, previous experiences, and similarity in values. (Williams 2005)*	*Management, maintenance, organising activities, planning events, decision-making, involvement in the design process. (Williams 2005)*
Physical materiality, private dwelling units, semi-private common, public areas, and facilities (Beck 2020)	*Values, formal or informal social relations (Beck 2020)*	*Vision, Finance, legal, social, layout and self-organisation (Beck 2020)*

Figure 2.28. *A summary of the spatial, social and organisational aspects of urban commoning in cohousing.*

In terms of spatial factors, higher densities of community, and therefore increased proximity between residents, provide greater opportunities for regular passive contact, helping to form social relations over time. When densities become too high, residents can feel a loss of control over their environment, leading to social withdrawal. There are fewer social interactions in larger communities where residents have relative anonymity and more interaction in smaller communities where residents are more familiar with each other. Communal spaces relating to smaller communities are used with greater intensity, and residents are more likely to participate in communal activities. Buffer zones between private and public or communal spaces can increase the potential threshold density where residents feel comfortable interacting. Buffer space provides variable levels of privacy to suit different needs and areas in which to informally socialise with others, observe public spaces and personalise and express themselves. A lack of semi-private space in high-density cohousing communities can lead to withdrawal and lower levels of social interaction. Functional and flexible, communal spaces that are centrally located, visible and accessible enable higher levels of social interaction and frequent use by residents. Locating car parking at the periphery of the site encourages the use of shared internal paths on foot and increases the chances of an encounter between residents. (Williams 2005)

In terms of social factors, the personal factors of individual residents and the shared values and norms impact how residents interact with each other and the site. Residents' attitudes towards socialising and available time are highly influential on their interaction in the community. Pro-community and pro-socialising attitudes contribute to a positive group dynamic and ensure communal spaces in cohousing are used. Residents' circumstances, such as their health or commitments, influence interaction opportunities. Negative experiences of interacting with others can result in conflict over management and maintenance issues and individual residents reconsidering

their community and shared living viewpoints. Social similarity and homogeneity of residents' values and norms enable residents to accept higher densities because residents feel safe and happy interacting with others who share similar beliefs. (Williams 2005)

Finally, organisational factors include the *management* of communal spaces, including maintenance, organising activities, and planning events, which are also important influencers of social interaction in cohousing. The decision-making process is identified as having the potential to be particularly divisive in social involvement in cohousing. The way decisions are made on the operation and design of cohousing can lead to conflict, which has a knock-on effect on social interaction within communities and eventually lead to the withdrawal of residents from the community. Like the decision-making processes relating to management and maintenance, the design process is also a potential contributor of conflict to cohousing communities, leading to a potential reduction in social interaction. Conversely, the design process is important in building social relationships, understanding, and decision-making processes. (Williams 2005)

These social, spatial and organisational influencing factors on social interaction provide a foundation framework that begins to define the scope of aspects potentially involved in resident participation in shared cohousing landscapes. The multi-faceted nature of urban commons drives a logic to break down its existence into components, firstly, as a tangible resource, an object or space with physical mass or extent; secondly, as a group of people, with individual human perspectives, social relationships, behaviours, and practices; and finally, as a culture or organisation, with rules, structures and norms. However, this compartmentalisation fails to recognise the relations between components and the wider urban context, emphasised in assemblage theory. No set standalone components can determine a successful (or unsuccessful) urban common without considering the wider contextual interactions and dependencies. As Giordano highlights, *"at its most fundamental level, the problem of the commons revolves around humans, their environment, and the spatial relations between the two"* (2003, fig. 365). This thesis, therefore, seeks to conceptualise residents' participation in shared landscapes by their complex and dynamic characteristics.

The diagram (figure 2.29) provides a conceptual framework to visually demonstrate the connections between the urban commons concept and supporting urban theory. It summarises the scope, variation, and interconnectivity between the components of urban commons drawn together from the literature as an assembled whole. These include scales across the individual, community, neighbourhood, and urban; the various stakeholders involved; social, organisational, and spatial enablers; and dynamic top-down and bottom-up placemaking processes. The framework serves to underpin a holistic approach to understanding cohousing as urban residential commons. It does this by first highlighting the breadth and scope of interdependent and independent factors related to the

study of residential involvement in shared landscapes. Secondly, it demonstrates the complexity of urban phenomena as an emergent and constantly shifting 'whole'. This poses a set of methodological challenges to studying, capturing and documenting a holistic overview of such a complex urban phenomenon, which is explored and addressed in the following chapter.

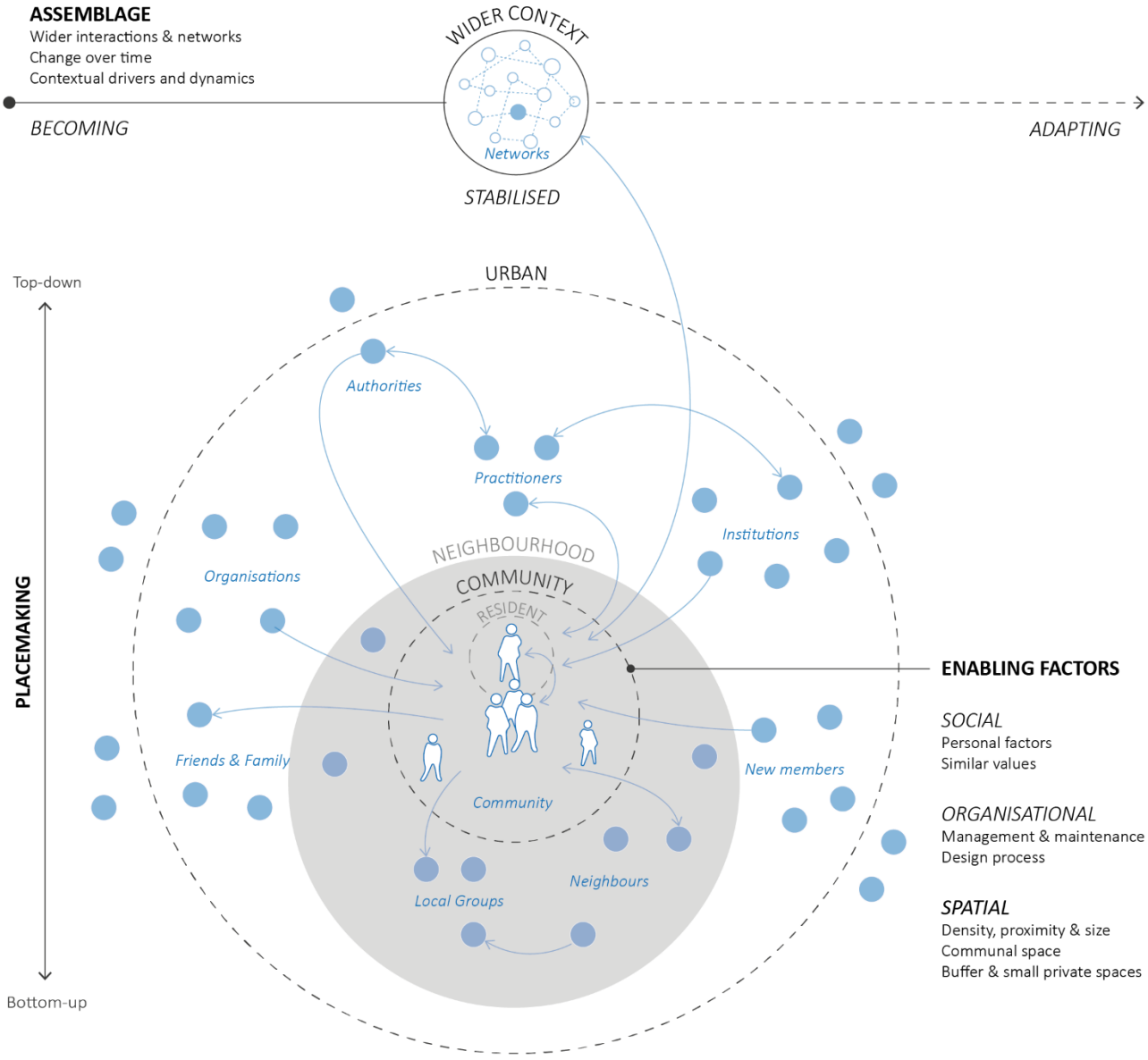


Figure 2.29. *Cohousing conceptualised as an assembled urban commons (adapted from Katrini, 2019, p. 84).*

3 RESEARCH METHODOLOGY

This research aims firstly to identify patterns of urban commoning in cohousing landscapes; secondly, make a pattern language as a tool for sharing and applying these ideas with others; and thirdly, to contribute to urban commons theory. Chapter 2 has defined urban commons according to the relationship between shared urban resources, communities of end-users and autonomous governance, combining social, spatial and organisational aspects. The literature review also highlighted the complex and dynamic characteristics of commons in urban contexts. Therefore, to achieve the research aims, it is necessary to study and capture the dynamic and complex relationships between the social, spatial, and organisational aspects involved in urban commoning, using cohousing landscapes as an example.

As introduced in Chapter 2, assemblage theory provides a useful lens to understand urban phenomena as dynamic arrangements of interconnected components and processes. This viewpoint emphasises urban places as complex wholes, emerging from the dynamic interactions between parts, and therefore, cannot be wholly understood when reduced to separate components. A methodology that approaches the study of urban form as an assemblage is required to capture the relations between the patterns of social behaviour and forms of governance that contribute to the ongoing making, use and adaption of spaces.

Pattern languages are a useful tool for urban design research (Deming and Swaffield, 2011; Leitner, 2015) that capture the relationships between space and people. In contrast with cartographic methods (e.g. Hillier and Hanson, 1984) that are used to analyse spatial plans to explain, predict or reveal social behaviours, pattern languages offer a way to recognise, depict and then apply commonly occurring relations between people and space in everyday settings (Alexander *et al.*, 1977). However, to use pattern languages as a research methodology, further methodological clarity and rigour are required.

This chapter progresses a methodology for identifying patterns and collating them into a language for the pragmatic study of complex real-world phenomena, such as urban commons. The first two sections of this chapter function as a continuation of the literature review, building on the conceptual framework at the end of chapter 2, to develop an appropriate approach to studying resident

participation in cohousing landscapes as urban commons. It does this first by outlining a philosophical approach to the research based on an assemblage mode of thinking (3.1), followed by an introduction to pattern languages and a review of existing methodologies for developing a pattern language in research (3.2). The next sections of the chapter outline the methodology used in this thesis, drawing upon the well-recognised processes of grounded theory to create a rigorous approach to developing a pattern language from empirical data (3.3). Finally, the chapter outlines a detailed description of how a grounded pattern methodology is applied in this research to study urban commoning in cohousing landscapes (3.4) and how this meets the required quality standards for research (3.5).

3.1 Assemblage thinking

Assemblage thinking provides a useful way of understanding the nature of urban places (ontology) and our knowledge of them (epistemology). Assemblage theory can be traced back to the philosophical writings of Deleuze and Guattari's book *A Thousand Plateaus: Capitalism and Schizophrenia* and later applied by Dovey (2010) to urban places. It provides an ontological framework that views urban places as a composite of material and immaterial things and the relationships between those things. The rhizome, a horizontally interconnected root system (as introduced in section 2.3), is used to visualise those relations, which laterally connect all parts into a larger system while retaining the ability to grow new connections. The changeability of the relations within assemblages underpins Dovey's understanding of place as being in a constant state of change or 'becoming' (2010). This thesis uses assemblage thinking to understand the nature of urban commoning in cohousing landscapes and to steer a methodological approach for this research.

For Baker & McGuirk (2017), assemblage theory holds several epistemological considerations that help to guide a suitable choice of methodology. These include *multiplicity*, the numerous interrelated components within an assemblage, *process*, activity and labour involved in the assemblage, and *uncertainty*, the unpredictable outcomes of those processes. These considerations all focus on the interrelation between the assembled parts and therefore reject methodologies that reduce the study of place into separate dimensions or isolated variables (Kamalipour and Peimani, 2015). Instead, complexity is embraced, and causality is accepted as being non-linear—when one component shifts, all the others will adapt—so that it is impossible to fully trace or explain the phenomenon along one dimension or line of enquiry. Kamalipour and Permani (2015) explain that urban research underpinned by assemblage thinking requires a multi-faceted, thick description and multiscalar consideration and that attempting to quantify socio-spatial concepts risks overlooking the complexity of urban places. Furthermore, assemblage theory recognises the researcher, methods and research context as integral parts of the assemblage being researched. Such complexity is difficult to replicate in artificial settings,

and thus assemblage thinking is well-suited to the empirical study of phenomena in their context utilising a combination of techniques and perspectives.

In recognising urban commons as multifaceted, non-linear processes that are difficult to predetermine yet materialise in specific contexts, this research has adopted a **grounded multi-method case study design**. Grounded theory requires an open and inductive approach to building concepts and theories from empirical data and is chosen to avoid the predetermination of findings by responding to unexpected outcomes and events (Sbaraini *et al.*, 2011). A case study design, *"an empirical method that investigates a contemporary phenomenon in depth and within its real-world context"* (Yin, 2018, p. 15), is chosen to afford the thick description of context-specific phenomena and accommodate the use of multiple qualitative methods. This allows multiple types of qualitative data to be collected, including observations, interviews, photographs, documents and mapping, across multiple units of analysis, including the individual, community, site and wider context. The variety of data provides multifaceted insights into urban phenomena and the option to choose from various methods in response to emerging or changing situations. The relationships between these components can be directly observed in context and triangulation across different types of data and scales (Yin, 2018). Finally, participatory strands are included in the research design to incorporate participant feedback and recognise the researcher as a participant in the research and their experiences in the field as research data.

3.2 Pattern languages as a methodological tool

Pattern languages offer a useful conceptual tool to capture, communicate and implement successful human-environment relations within complex urban environments. To answer the research questions in this research, developing a pattern language serves three key purposes: 1) to document and communicate existing commoning problems and solutions experienced by cohousing communities, 2) to create a collaborative tool for the implementations of those ideas and 3) understand and theorise urban commons. This section introduces pattern languages, their origin in architecture and urban design, and how the ethos underpinning them aligns with assemblage theory. Following this, the characteristics of pattern languages and how they can help answer the research questions are summarised. The final paragraph then calls attention to the current limitations of using pattern languages as a research method.

Pattern languages in architectural theory are based on the book *'A Pattern Language'* by Alexander *et al.* (1977), where they are presented as a collection of interconnected problem-solving ideas commonly applied by people in everyday settings. Alexander explains: *"Each pattern is a three-part rule, which expresses a relation between a certain context, a problem, and a solution"* (1977, p. 247).

Therefore, in its most basic form, a pattern describes a common context-problem-solution association that repeatedly occurs in the field of interest (for example, see table 3.1). Alexander documented 253 patterns for the design of the built environment and collated them into a language intended to be understood and used by anyone. Just as a verbal language consists of a network of words that, when linked together in a particular order, create sentences to communicate ideas to others, a pattern language collates patterns and the connections between them in a format that others can easily understand.

> *"A pattern language may thus be understood as a network of patterns that are linked and interdependent. Used in combination, patterns can create complex forms and typologies. Patterns are analogous to words, relying on syntax (proper grammatical structure and relationships) to create an endless variety of sentences and complex meanings. Individual patterns describe a typical solution to a familiar or perennial problem in any given context or scale. Patterns are independent of materials, so they can be interpreted freely and adapted as needed for costs or culture."* (Deming and Swaffield, 2011, pp. 232–233)

76 HOUSE FOR A SMALL FAMILY

Give the house three distinct parts: a realm for parents, a realm for the children, and a common area. Conceive these three realms as roughly similar in size, with the commons the largest.

[Image redacted for copyright reasons]

Context:	Problem:	Solution:
In a house for a small family, it is the relationship between children and adults which is most critical. Many small households, not large enough to have a fully fledged nursery, not rich enough to have a nanny, find themselves swamped by the children.	The children naturally want to be where the adults are; their parents don't have the heart, or the energy, to keep them out of special areas; so finally the whole house has the character of a children's room...Yet, obviously few parents feel happy to give up the calm and cleanliness and quiet of the adult world...	To help achieve a balance, a house for a small family needs three distinct areas: a couple's realm, reserved for the adults; a children's realm, where children's needs hold sway; and a common area, between the two, connected to them both.

According to THE FAMILY (75), each nuclear family ought to be a member household of a larger group household. If this is not possible, do what you can, when building a house for a small family, to generate some larger, possible group hous3hold, by trying it together with the next door households; in any case, at the very least, form the beginning of a HOUSE CLUSTER (47). Treat the house, like every house, as a distinct piece of territory – YOUR OWN HOME (79); build the three main parts according to the specific patterns for those parts – COMMON AREAS AT THE HEART (129), COUPLE'S REALM (136), BED CLUSTER (143) and connect the common areas, and the bed cluster according to the CHILDREN'S REALM (137).

Table 3.1. *An extract from A pattern language (Alexander et al. 1977, p381-384) illustrates an example of a pattern.*

The ethos that underpins *'a pattern language'* seeks to engage everyday people in creating and adapting their surrounding environments. This was driven by Alexander's belief that without the

inclusion of people in the design of buildings, they fail to become *'alive'* and *'whole'*. Therefore, *'A pattern language' was* developed to operationalise these qualities, which were deemed essential for creating *'a timeless way of building',* discussed in his book of the same title (Alexander, 1979). As such, this original example of a pattern language endeavoured to capture known solutions to everyday problems in the built environment and offer them up to everyday people, in an easy to understand format, to build places that felt *'alive'* and *'whole'*.

'A pattern language' forms part of a larger suite of writings produced by Alexander and his colleagues that align with many of the core concepts within assemblage theory. Much of Alexander's work is underpinned by a core understanding that *"a strong reciprocal relationship exists between environments and their inhabitants"* (Dawes and Ostwald, 2017, p. 3). Another work illustrating this viewpoint is a short essay written by Alexander in 1965, titled '*a city is not a tree*'. Here, he argues that cities should not be presented as neatly organised tree-like structures or hierarchies, as this image fails to convey the horizontal, network like relations and overlapping interactions in urban contexts. Instead, Alexander presents cities as lattice-like structures conveying infinite connections and ongoing transformation, not dissimilar from an assemblage with its rhizome-like networks. Helfrich reinforces this view in suggesting that pattern languages provide *"a paradigm shift from thinking about individual components that are separated from one another, toward thinking about the richness of relationships among loosely connected components"* (2015, p. 26). The alignment of a pattern language ethos with assemblage thinking warrants further exploration of pattern languages as a methodology in this research.

Pattern languages have many assemblage-like characteristics, including multifaceted, interconnected, adaptable and dynamic qualities. Firstly, Patterns are inherently multifaceted because they are *"events [which] cannot be separated from the space where it occurs"* (Alexander, 1979, p. 73), or in other words, are solutions that emerge from the relationship between social events and spatial form. Secondly, patterns are highly interconnected, as connections between patterns are required to form a language. As Alexander *et al.* describe; *"[e]ach pattern can exist in the world, only to the extent that it is embedded, the patterns of the same size that surround it, and the smaller patterns which are embedded in it",* based on the understanding that *"when you build a thing you cannot merely build that thing in isolation, but must also repair the world around it, and within it, so that the larger world…becomes more coherent, and more whole"* (1977, p. xiii). Thirdly, patterns can be adapted to suit local conditions because they do not specify 'what' a space should look like. Instead, they present abstract, broader social-spatial characteristics common across multiple contexts. As Alexander *et al.* explain: patterns *"present the problem and solution to each pattern in such a way that you can judge it for yourself, and modify it, without losing the essence that is central to it"* (1977, p. xi). Finally, *A pattern language* was considered by Alexander *et al.* as being incomplete, and patterns conceptualised as

hypotheses—*"our current best guess as to what arrangement of the physical environment will work to solve the problem presented"* (1977, p. xv) so that they can be improved and added to overtime by the people who read and use them. In this way, pattern languages align with many of the key ways assemblage theory views the world.

Pattern languages offer a way of exploring, revealing, capturing and sharing multifaceted solutions that operate and exist within urban commons as complex urban assemblages. This idea is explored in the book *'Patterns of commoning'* (Helfrich, 2015), which supports the argument for using pattern languages to study commons. Patterns themselves offer a potential way to capture the relations between social and spatial aspects of urban commoning in real-life contexts. The fact that patterns do not *"insist upon strict causal relationships"* help in recognising "*the subjective, contingent complexities of any commons"* (Helfrich, 2015, p. 30). Patterns tackle the issues that *"[i]n commoning, as in all social processes, successful solutions can be replicated only to a limited degree"* (Helfrich, 2015, p. 32) by capturing the core aspects of a solution abstracted and independent from the detailed specifics of a particular situation, and then adapted or reinterpreted to suit local conditions. As patterns are catalogued in a consistent format with a set of instructions written using everyday words and diagrams to assist in making an implementable solution for everyday people, a pattern language can transfer design knowledge, speed up the learning curve, and enable *"dialogue between everyone involved"* (Leitner, 2015, p. 19). Pattern languages offer a potential methodological tool for revealing, capturing and communicating the challenges and solutions involved in resident participation in shared landscapes experienced by cohousing communities and, therefore, answering the first research question.

The challenge in implementing pattern languages as a research method is some ambiguity as to how Alexander and other researchers identified patterns and developed them into pattern languages. Some have criticised *'A pattern language'* for lack of rigour, an objective evidence-based or links to other theories, an overly authoritarian tone, and difficult for some readers to access (Dawes and Ostwald, 2017). It has also been suggested that the 'bible-like' text in which 'A pattern language' is presented restricts the test-and-adapt modification of the language that Alexander envisioned (Dawes & Ostwald 2017). However, Alexander arguably addresses some of these issues in later works (e.g. the series of four books under the title *'The Nature of Order'*). This research, therefore, attempts to address these criticisms by outlining and implementing a detailed methodology for developing a pattern language that tests an alternative format to make it more accessible to residents and uses the language to discuss and build theory.

3.3 A grounded pattern methodology

This section outlines a step-by-step methodology for developing a pattern language, developed from a review of previous studies combined with a grounded theory approach, to build theory from an empirical evidence base systematically. Since Alexander's *'A pattern language'* was published, pattern languages have been adopted in a wide range of fields, notably in architecture (e.g. Cavalcanti, 2017; Crawford *et al.*, 2018; Kohls and Munster, 2018), software (e.g. Hentrich *et al.*, 2015), education and learning (Olson, 2008; Iba, Sakamoto and Miyake, 2011; e.g. Grundschober *et al.*, 2018; Kohls, Koppe and Norgard, 2018) and healthcare (e.g. Kaneko and Iba, 2018; Yonesu and Kato, 2018). A review of these pattern studies showed researchers employ a wide variety of qualitative methods, including literature reviews, interviews, site surveys, questionnaires, workshops, and focus groups, that often include or follow up with participatory methods. As such, there is no one best method suited to developing pattern languages in research, which is dependent on the research question and context. However, several authors suggest common suitable multi-stage approaches (Schuler, 2002; Iba, Sakamoto and Miyake, 2011; Fehling *et al.*, 2014). These staged approaches are compared and rationalised into five phases: 1) Problem-solution-context mining, 2) Pattern clustering, 3) Pattern writing, 4) Pattern cataloguing, and 5) Language testing, in Table 3.2.

Pattern Language Development Phases	Schuler's six steps (2002)	Fehling *et al.*'s three phases (2014)	Iba *et al.*'s five phases (2011)
Phase 1: Problem-solution-context mining	*1. 'Pattern collecting'*	*1. 'Pattern identification'*	*1. 'Pattern mining'*
Phase 2: Pattern clustering	*2. 'Pattern discussion & deliberation'* *3. 'Pattern language development'*		
Phase 3: Pattern writing		*2. 'Pattern authoring'*	*2. 'Pattern prototyping'* *3. 'Pattern writing'*
Phase 4: Pattern cataloguing	*4. 'Pattern presentation'*		*4. 'Language organising'*
Phase 5: Language testing	*5. 'Pattern use'* *6. 'Pattern evaluation'*	*3. 'Pattern application'*	*5. 'Catalogue editing'*

Table 3.2. *A table comparing three multi-stage pattern language methodologies.*

Problem-solution-context association mining

Pattern language methodologies begin with searching for common solutions to problems within a given context. This requires a qualitative and multi-method approach to discover, identify, or mine patterns, most often within complex real-world situations. Previous studies have used different data types, both empirical and theoretical, to identify patterns. Olson identifies four types of previous data researchers used in pattern language studies (2008): the researcher's reflections on their experiences and expertise (e.g. Iba and Isaku, 2016); focus group and mind mapping activities with experts and end-users (e.g. Iba, Sakamoto and Miyake, 2011); secondary data (e.g. Grundschober *et al.*, 2018); or in-the-field interviews and observations (e.g. Hentrich *et al.*, 2015; Cavalcanti, 2017; Yonesu and Kato, 2018). Some studies employ a mix of these approaches as a mixed-method study for discovering patterns (e.g. Helfrich, 2015; Kohls, Koppe and Norgard, 2018). Research using a pattern approach within architecture, urban design or other spatially focused disciplines used case studies to empirically observe patterns of spatial phenomena drawing on a range of qualitative methods (e.g. Cavalcanti, 2017; Katrini, 2019). Here, patterns are discovered within the data by identifying context-problem-solution relations associated with the topic of interest (Hentrich *et al.*, 2015).

Pattern clustering

Phase 2 involves analysing the data collected in Phase 1 to cluster together repeating or similar solutions. This process recognises that not all solutions are patterns but when core solutions to common problems are found repeatedly within similar contexts (Alexander *et al.*, 1977). To identify repeating core solutions, similar solutions and problems are clustered together and rationalised into core categories to identify repetition. In the literature review, researchers (Iba and Isaku, 2016; Kohls, Koppe and Norgard, 2018; Katrini, 2019) frequently used paper, post-it notes or digital mind-mapping methods within the research team or alongside research participants to create clusters, as described in the following extract:

> *"Twelve people collaborated together to figure out the essence of the contents written on the individual sticky notes and arrange their positions according to their meanings. In this way, after 8 hours, groups of notes with similar meanings gradually appeared, and 430 fragments of data were classified into 131 groups. Because we had too many cards, it was better to work on the clustering on the floor…After 8 more hours of organizing the sticky notes, 45 groups remained in the end."* (Iba and Utsunomiya, 2018, p. 220)

As Iba & Ustunomiya (2018) describe, the clustering technique enables researchers to find patterns in large quantities of fragmented data, and analogue paper techniques enable a

flexible trial and error approach. Clustering and mind-mapping are also useful later in the process to organise and identify broader relationships between patterns as a language (Grundschober *et al.*, 2018). With the clustering method, case-specific solutions are abstracted to a common pattern of similar repeating solutions. Achieving the optimum level of pattern abstraction is a key challenge of the *clustering* stage. This is because a pattern needs to succinctly consolidate variations in real-world pattern occurrences without becoming so general, they can no longer be applied as a practical solution. Rising suggests the correct level of abstraction is *"is to make patterns as low-level as possible but no lower"* (2007, p. 47).

Pattern writing

Pattern writing begins with drafting a description and name of initial prototype patterns, which are then improved upon as the analysis continues. Patterns are written using a consistent structure or template (Leitner, 2015). Most researchers adapt a pattern template derived from Alexander *et al.*'s pattern language format (1977), typically consisting of a pattern name, photo, description of the context, problem, core solution (written as an instruction), visual diagram, and connections to other patterns. Variations on Alexander's pattern template include more concise summaries or additional elements such as the role of different actors (Grundschober *et al.*, 2018) or the impact on design practice (Katrini, 2019). However, most pattern templates include five core elements: i) name, ii) visual representation (e.g. photo, diagram or sketch), iii) context, iv) problem, and v) an instructional solution. Each pattern has a distinct name, carefully chosen to accurately represent the solution it portrays in a way easily understood and remembered by its intended audience (Kohls, 2013). The content and style of the pattern description should also be considered so that it is appropriate, accessible, and appealing to the intended users of the pattern language (Ogo *et al.*, 2018).

Language cataloguing

A pattern language is an evolving family of context-problem-solution associations that relate to the topic of interest and their relations to each other as an encyclopaedic network. Alexander *et al.* explain the purpose behind their pattern language is: "*to present each pattern connected to other patterns, so that you grasp the collection of all 253 patterns as a whole*" (1977, p. xi). Therefore, during the writing process, it is important to consider the relation of each pattern to others and its position within the pattern language. This is achieved through notetaking, diagramming, and mapping for the researcher to keep track of emerging relationships and structures within the pattern language throughout the writing process. There is no single logical order or hierarchy to structure a pattern language that can adequately convey or rationalise the complexity of its network. Alexander *et al.* suggest organising patterns

into a hierarchical or categorical order for end-users to navigate the language (1977) effectively, and therefore, organised *'A pattern language'* by scale, from the city *(1. Independent Regions)* to the detailed *(253. Things from your life)*. Others have used similar hierarchical structures to order pattern languages such as time-series of life events (e.g. Ogo *et al.*, 2018), categories (e.g. Kaneko and Iba, 2018), and scale (e.g. Crawford *et al.*, 2018). However, Alexander *et al.* also highlight that pattern languages have a network structure, and therefore no hierarchical sequence can perfectly capture the entirety of its relations (1977). As such, other pattern language researchers have presented pattern collections through maps (e.g. Grundschober *et al.*, 2018) to convey the multiple relations between patterns.

The final output format for the pattern language should be considered to make it accessible and useable to the intended users. Alexander chose an 'encyclopaedic' style text (1977) and later transferred some of the patterns to an online website (http://www.patternlanguage.com/). Others have since experimented with more interactive and participatory formats, including card decks (Yonesu and Kato, 2018), tables (Kaneko and Iba, 2018) and 'pattern abstracts' (Grundschober *et al.*, 2018) to make patterns more mobile in live community settings.

Language testing and verifying

Participatory feedback and real-world application of prototype patterns help to validate and further develop the pattern language. The testing phase appears in previous studies in various forms, including a 'community-based review' (Hentrich *et al.*, 2015), 'writers' workshop' (Iba, Sakamoto and Miyake, 2011), peer feedback (Olson, 2008), student design sessions (Kohls and Munster, 2018) and consultation (Kaneko and Iba, 2018). Participatory feedback can also happen at different stages of the research, including in phases 1 & 2, where mind mapping with experts and end-users form part of the data collection or pattern mining. Testing patterns allows them to *"be looked at from different perspectives to eliminate any misunderstanding and improve the quality of the description"* (Iba and Utsunomiya, 2018, p. 221). During this stage, the relationships between patterns emerge, and the structure of the language can be constantly reviewed and improved. Therefore, pattern prototyping is an iteration of mining, clustering, testing and pattern writing.

The above phases provide a methodological framework to guide a phased approach to developing a pattern language. However, these phases lack the detail and clarity needed to undertake rigorous research. Grounded Theory is a widely used methodology in the social sciences that can operationalise the above methodological framework. It describes an inductive analytical methodology that generates new theory from empirical data (Glaser and Strauss, 1999). Although commonly referred to in the analytical stages, grounded theory is a methodological approach applied from the

outset of the research, suited to open-ended and explorative research questions using responsive-adaptive methods (Sbaraini *et al.*, 2011). According to Sbaraini *et al.*, the fundamental components of grounded theory research design are:

- *Openness:* an open approach to research that evolves as areas of importance become apparent using inductive analysis moving from the particular to the general.
- *Immediate analysis:* Analysing in parallel with or soon after data collection.
- *Coding and comparing:* Data is broken down into smaller labelled components, which are constantly compared with other data and cases, and later combined into categories.
- *Memo-writing:* Memos are written throughout the research to record the constant comparisons between data and the researcher's thinking.
- *Theoretical sampling:* New questions, relationships, and gaps revealed during analysis inform the modification of questions and participant selection to clarify findings.
- *Theoretical saturation:* Data collection and analysis is continued until all the concepts within the theory being developed are understood and substantiated from the data.
- *Production of a substantive theory:* The whole process produces a set of concepts related to one another as a cohesive whole.

As several researchers have previously highlighted (Denef, Oppermann and Keyson, 2011; Hentrich *et al.*, 2015), the inductive approach and iterative analytical processes within Grounded Theory align with developing a pattern language. The inductive analytical approach of grounded theory, which emphasises an initial focus on the particularities in the data and then moves towards a more general theory, complements the low-level abstraction and context-specific nature of individual patterns that relate to each other to form a broader language. Further to this, Grounded Theory provides a clear and rigorous way of building new theory from empirical data, which was not attempted in the reviewed pattern studies. Although grounded theory does not necessarily incorporate the testing of concepts and theories that emerge, Denef *et al.* (2011) suggest adopting participatory action research in guiding the testing of pattern languages. The alignment of the Pattern Language methodological stages and Grounded Theory are summarised and compared in figure 3.1.

This research adopts the openness of a grounded theory approach throughout the research design. The chosen grounded theory research approach is justified and applied in the following ways: by the open and explorative research aims (Section 1.2), simultaneous collection and analysis of data, the adaption of participant selection and questions in response to emergent findings (in phase 1), using an inductive analytical process beginning with open coding of the data and moving to more general patterns and themes (in phase 2), reflective memo-writing (phase 3), and finding links between

concepts (in this case patterns) that relate to each other to develop theory (Phase 3 & 4). The details of how a grounded theory approach is integrated into developing a pattern language within this research are described in detail in the following section.

Figure 3.1. *A five-phase methodology for developing a pattern language using a grounded theory approach.*

3.4 Research Design Overview

This research uses multiple methods to adopt a grounded pattern methodology within a multiple case studies research design. A multiple case study design involves documenting the analysed data for each case within separate study reports and subsequently comparing cases through cross-case analysis (Yin, 2018). Each report presents an in-depth, thick description case study, highlighting the individual specificities within each case and providing an archive of qualitative data, which can then be compared through cross-case analysis. By comparing data across cases, both recurring patterns and unique instances of urban commoning can be identified.

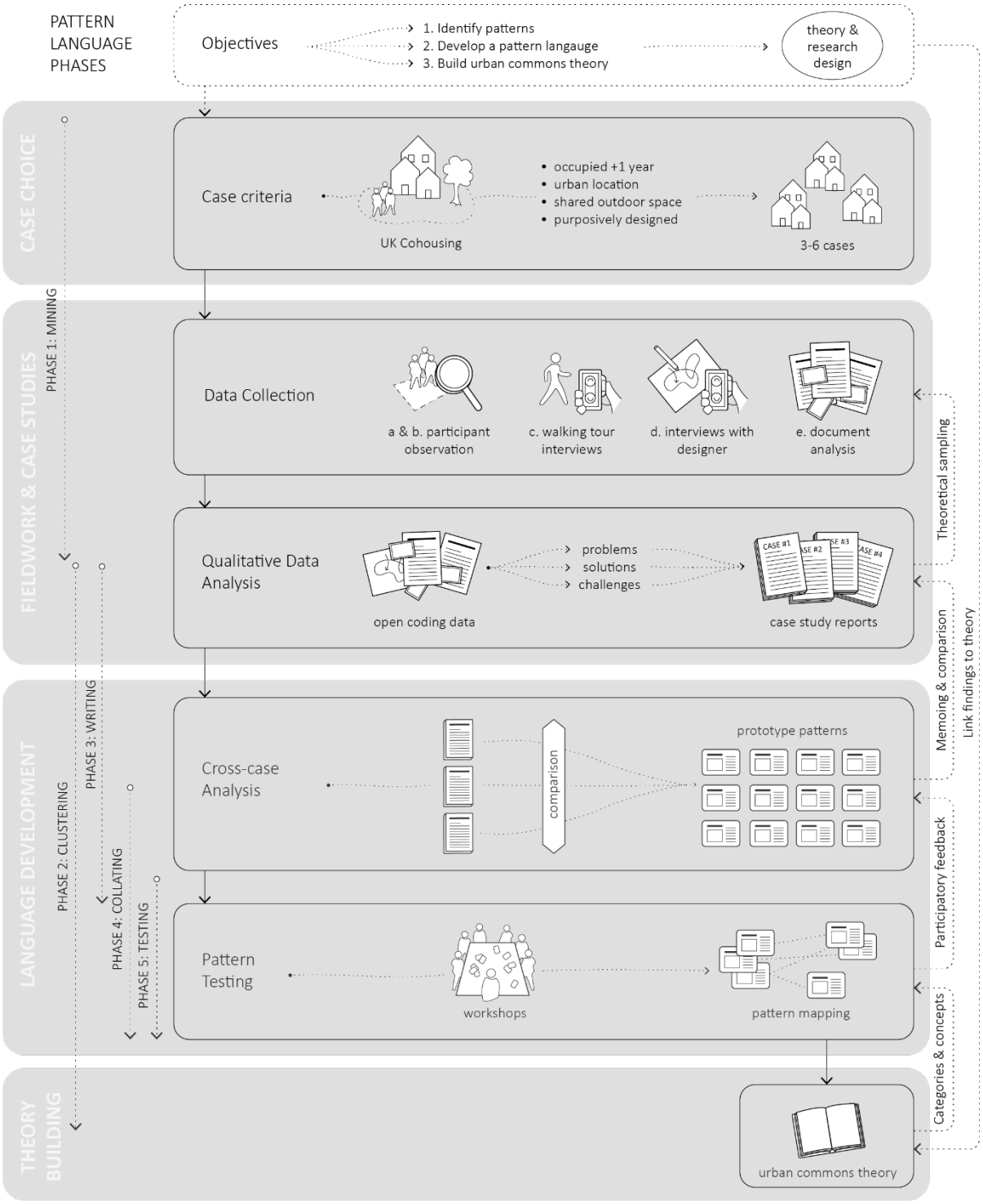


Figure 3.2. *The grounded pattern methodology incorporated into a multi-case research design.*

The research design combines the five pattern language phases identified in the previous section with a multi-case study of cohousing (figure 3.2). The first part of the research design involves outlining the case selection criteria, introducing the chosen cases, and recruitment methods. This is followed by the procedure for collecting data using multiple methods and analysing data through the open coding of contexts, problems, and solutions. In the second phase, pattern clustering, similar open codes are clustered together and summarised in a series of case study reports and a cross-case analysis

is used to identify prototype patterns. During the pattern writing process, constant comparison and memo-writing summarise core problems and solutions from the case study reports into a pattern format. The patterns are then collated into a language using a card game format and by exploring the different relationships between patterns. This is followed by language testing in a series of workshops to verify, question and improve the patterns and develop them into a language. Finally, the broader themes and relationships emerging from the patterns are related to existing theory to build upon urban commons theory.

Case Selection and recruitment

This research uses multiple cases in both an exploratory and descriptive way to discover and document patterns of urban commoning across cases. Therefore a multiple-case research design is used to identify reoccurring phenomena by comparing similar cases. In this research, at least three cases were required to enable literal replication, whereby results are expected to be similar (Yin, 2018). At the same time, it is acknowledged that no two cohousing sites or groups are the same, and therefore context-specific variation and contrasts between cases are also likely. Flyvbjerg (2006) explains that these case-specific findings offer unique case characteristics and exceptions that provide additional insights and contributions to theory. Therefore, this research aims to identify the broader patterns of urban commoning solutions across multiple selected case studies and the variations and unique manifestations of those solutions within each context-specific case.

Urban cohousing developments and their communities are chosen in this research because they offer an identifiable example of residents' participation in shared landscapes, conceptualised as a form of urban commoning (see chapter 2). The case selection criteria were selected to filter cases by their relevance to the research topic and identify cohousing developments that have shared residential landscapes collectively governed by residents, are located within a city or town in the UK, have residents currently living on-site; and are purposively designed for cohousing. This criteria discounts cases in rural areas and cohousing groups without a site or under construction.

Identifying all potential cohousing cases in the UK is challenging for several reasons. The definition of cohousing overlaps with similar alternative housing models such as housing cooperatives, ecovillages, CLTs and self-build developments, with some cohousing communities preferring to describe themselves using similar terms. Some cohousing communities may not be documented online, and with many cohousing projects in the pipeline, it is challenging to compile a consistently complete data set. The UK cohousing database provides the most up to date available dataset at the time of case selection and therefore was chosen as the most appropriate sample pool for this study. The UK cohousing database contains projects that fit the criteria for cohousing and specifies their location, status and contact details for each case, allowing the suitability of the case study to be easily

evaluated. According to the UK cohousing network (2019), the database consisted of 24 established cases. The suitability of each case study was examined with a desk evaluation study (Appendix A), and of those 24 cases, 7 met the selection criteria (Table 3.3).

Recruitment method	Description	No. of cases
Contacted by email	*Cases identified through selection criteria*	7
Self-selection	*Willing to take part in the research*	4 (-3)
Snowball	*Opportunistic cases arising during fieldwork*	(+2)
Convenience	*Studies reduced due to the impact of the pandemic*	(-2)
Total	*Final number of cases included in the research*	**4 (inc. 1 mini case)**

Table 3.3. *Table of recruitment methods and cases completed during the research.*

At the outset, three-six case studies were deemed to be the optimum number required for the study so that a sufficient depth of understanding could be gained from a smaller number of cases (less than six) while allowing for replication of findings across multiple cases (at least three). The final selection of case studies for the research was influenced by the initial response rate and willingness of communities to be involved in the research (4 cases), identifying further cases of interest during the research process (+2 cases) and the revaluation of suitability and reduction of cases due to COVID-19 restrictions in March 2020 (-2 cases). Snowball recruitment was used and justified by the adopted grounded research methodology that encourages the researcher to adapt the case selection and recruitment in response to emergent opportunities and phenomena. The final number of cohousing case studies included in the research was three full case studies plus one snapshot or mini case. Details of the selected cases are summarised in Chapter 5.

Based on the conceptual framework for resident participation in shared landscapes as urban commons illustrated at the end of Chapter 2, the study defines individual residents, the site, the community, design practitioners and wider networks as units of analysis within each case. The site, the community as a whole and individual residents have been chosen units of analysis to provide insight into the spatial layout, organisational aspects and social relations between residents. Focus on individual residents provides insight into potentially differing individual perspectives of residents. Finally, design practitioners and other contacts and networks are chosen for an external viewpoint on cohousing communities and the potential mid-way role between top-down and bottom-up approaches.

Key contacts for each cohousing case were emailed with a brief overview of the project and a community information sheet (Appendix B). The key contacts acted as gatekeepers to the community,

passing on information, notification of researcher visits and invitations to participate in walking tour interviews to the rest of the cohousing community via their internal communication methods. In addition to this, participants were identified during site visits, workdays and events, as the researcher became more familiar with residents. Key design professionals associated with each case study were identified from the desktop study or resident interviews and were contacted by email.

Phase 1: Problem-solution-context association mining

Method	Data source	Data description	Type of data	Insight(s)
Participant observation	Community / Site	Fieldnotes of site visits, meetings, events	Observational	*Researcher's own experience and interpretation of the site and group interactions.*
		Photos of the site during events, meetings	Visual	
Walking interviews	Resident / Site	Audio recording of interview	Verbal	*Resident's perception of the site and group relations.*
		Field notes including route map	Observational	*Researcher's interpretation of resident's site and group interactions.*
		Photos of the site taken during the interview	Visual	
Document elicitation interviews	Practitioner / Documents	Audio recording of interview	Verbal	*Practitioner's experience of collaboration with group, design process and site layout.*
		Collaborator produced drawings/photos	Visual	
Document analysis	Documents	Digital documents (e.g. policies, websites, emails)	Written/Visual	*Representation of group values, structures etc. Representation of spatial layout.*
		Photo of original document		
Remote video/phone methods*	Video of Site / Resident	Participant recorded video	Visual & Verbal	*Resident's perspective of the site and group relations*
		Audio recording of video or phone call	Visual/Verbal	
Workshops/ feedback sessions	Community	Field notes on workshop	Observational	*Wider group perspective on the validity of findings. Clarity and applicability of findings in other contexts.*
		Photos of workshop outputs	Visual	
		Resident feedback (post-it notes)	Written	

Table 3.4. *Table of methods used within the research. *Adaption to remote methods was undertaken after temporarily pausing fieldwork on the 16th March 2020 and restarting fieldwork remotely on the 29th May 2020.*

Data collection & methods

This section outlines the fieldwork procedure and data collection methods for each case study. Four data collection methods were initially chosen to provide a range of data from different sources and identify relationships between social, spatial and organisational aspects of urban commoning. These included a) site visits, b) participant observation, c) walking tour interviews with residents, d) document elicitation interviews with practitioners, and e) document analysis. In addition, several f) remote methods were chosen in response to early withdrawal from the field due to Covid-19 restrictions. The variety of methods chosen produced a wide range of data, including observational, visual, written and verbal data, allowing the documentation and connections to be made between the social, spatial and organisational aspects of resident involvement in shared outdoor spaces (summarised in Table 3.4).

a) Initial site visits

Robson & McCartan (2016) emphasise that negotiating access to the field as an observer requires developing trust with key members of the group, which may involve gaining permission at various levels and modifying the study in response to their requirements. The task of the overt researcher is making their intentions known, gaining cooperation from participants, and seeking formal consent at various levels (Lofland and Lofland, 1995). Due to the sensitivity of entering private community spaces in the domestic domain and the high level of research requests received by cohousing communities, it was important to gain trust and understanding through repeat in-person visits. Before commencing data collection, an initial visit was arranged with each cohousing community to introduce the researcher and the research project to the main contact (referred by Lofland & Lofland as *accounting*), meeting and build familiarity with other cohousing residents, and to understand how the community want to be involved in the research project. The researcher's knowledge or expertise can be beneficial in gaining access to the research field (Lofland and Lofland, 1995). In this case, as a Landscape Architect with previous experience in gardening and volunteering, the researcher was able to act as a researcher-volunteer on workdays. By frequently being in the field, the researcher was able to identify potential interview participants, receive invites to future meetings and events, and meet other cohousing groups.

b) Participant observation

Observation is typically undertaken in the exploratory phase of the research when the participant as an observer *"seeks to become some kind of member of the observed group"* (Robson and McCartan, 2016, p. 323). The method of participant-as-observer positions the researcher as the research instrument, and therefore knowledge is gained through the researcher's subjective interpretation of their observations, interactions and first-hand experience of participating. It is a useful method for

research into small groups or frequent events accessible to observers (Robson and McCartan, 2016). During the context-problem-solution mining phase of this research, overt participant observation was undertaken within cohousing case studies as a regular volunteer at community workdays and as a guest during informal meetings and events. The researcher would also typically take part in meetings with the main contact, workday group briefings, working within a small group on building and gardening tasks, tea and lunch breaks with the whole group, skillshare activities and annual events. The grounded approach to this research adopts an unstructured observation approach, one that is not guided by a predetermined framework of observational criteria or coding, allowing freedom in information gathering and exploration of a wide range of observations and first hand experiences. Taking part in the communal workdays and other events in cohousing allows simultaneous observation of the physical space, activities, social dynamics and group organisation. Observations were documented through field notes written up the same day of the site visit to ensure the detail was still fresh in the researcher's mind (Lofland and Lofland, 1995). Furthermore, a research diary was used to reflect on the researcher's role in the group and continuing experience of participating in communal activities.

c) Resident-led walking interviews

Interviews lend themselves to being used with participant observation (Lofland and Lofland, 1995; Robson and McCartan, 2016). Resident-led walking tour interviews, also known as the go-along method, are on-site interviews where the researcher accompanies the participant on foot in their familiar environment (Carpiano, 2009). Resident-led walking interviews were chosen for this research because such conversations provide detailed accounts of residents' perceptions of their everyday lived experiences (Kvale, 1996) whilst in the places of study. This is valuable because places function as a prompt for dialogue and highlight 'taken-for-granted' experiences that may be overlooked in remotely located interviews (Riley and Holton, 2016). As Demming & Swaffield describe, *"[r]espondents may find it easier to talk with a researcher when both are engaged in some shared activity—say, walking or tending a garden"* (2011, p. 154). Encouraging residents to guide the walk can allow the researcher to access more personal and mundane spaces of cohousing that may be missed during regular visits and workdays. Interviewing while in the places of study can provide an explanatory insight into why and how spaces have been designed, adapted or maintained from the perspective of the resident. Multiple types of data sources can be produced from the method, including interview audio recordings, photos taken during the tour, and fieldnotes.

The walking tour interviews are designed to be initially open and unstructured, allowing the participant to lead the route and points of discussion with little influence from the researcher. An interview guide (Appendix C) is then used to prompt probing and follow-up questions to ensure no

points of interest are missed, becoming semi-structured. A typical walking tour interview began in the resident's choice of meeting place, usually in their home, the common house or outdoor meeting place. Here, an introduction was given (Lofland and Lofland, 1995) of what the participant should expect, ethical considerations, filling in the face sheet, setting up the audio recorders and an opportunity for questions. The interviews were recorded using two clip-on audio recorders, one each for the interviewer and researcher, to provide a backup recording and enable both the interviewer's and resident's voices to be captured clearly whilst moving around and during bad weather. The interview began with open questions designed to easily open the conversation and gather background information about the resident and site. The resident was then asked to take the researcher on a walking tour of the site and talk about how the spaces are designed, used and maintained, followed by probing and follow-up questions (Kvale, 1996) guided by semi-structured themes. The participant's route was documented in the field notes to capture the movements through the site during the interview as spatial data. In addition, photos were taken of the places residents talked about, which Tinkler explains can be used as an aide-memoire and reveal new data missed during the interviews (2013). After the walking tour, the researcher and participant returned to the starting place to ask follow-up questions on any themes from the interview guide that had not been covered. The interview ended with a short debrief, asking for feedback from the participant on their experience of the walking tour interview, which was then used to inform future interviews.

d) Document elicitation interviews with collaborators

Interviewing practitioners can *"draw[…] out characteristic modes of practice"* (Deming and Swaffield, 2011, p. 242), which in this research helps to understand the practices design practitioners used with cohousing communities. Three interviews were undertaken with design practitioners from three different case studies, using design documents provided by the collaborator to elicit conversation (Kvale, 1996). The interviews took place in the offices where the collaborator worked or, in the case of one resident-architect, the interview took place in their home and while walking around the cohousing site. The interviews used a semi-structured approach, beginning with opening questions on the project background, briefing, design process, then talking through the design drawings and documents, and followed up with questions on any themes that had yet to be covered. Permission was sought to take photos of the documents used during the interviews or requested digital copies for analysis. This provided a participant-produced document as supplementary data (Lofland & Lofland 1995) that can be analysed as another source of qualitative data (Walker 2008).

e) Document Analysis

Lofland & Lofland (1995) describe the mass of documents generated by the research setting and collected as supplementary data. This data can include researcher-produced documents, such as

map-making, photos and field notes, participant-produced documents such as workday schedules and design documents, or other secondary/ existing contextual and historical documents such as planning documents and websites. The documents analysed included a combination of researcher-produced, participant-produced and secondary data. These were often offered to the researcher during site visits or emailed for follow-up site visits and interviews. Design practitioners offered design process documents and photos during the document elicitation interview and in follow-up emails for analysis. Finally, a desk-top study of each case amassed a variety of documents, including websites, and community policy and planning documents.

The documents are treated as data and qualitatively analysed using the same approach as the collected data. Pink (2000) highlights it is essential to consider the document's presentation, accuracy and potential biases resulting from its intended purpose. This is particularly true of visual material, such as photos of the site and design drawings, which provide a particular view of reality, but without sufficient context, can lead to inaccuracies in interpreting that view (Robson and McCartan, 2016). In this research, interviews and observations provide additional explanatory and background context to aid the interpretation of participant-produced and found documents. Finally, researcher-produced drawings, sketches, and annotated photos are an important tool for presenting the research findings and allowing the researcher to explore and interpret the spatial characteristics of the site (Antona, 2019).

f) Remote video, phone & online methods

Due to the Covid-19 pandemic, in-person fieldwork was paused from the 16th March 2020 and subsequently adapted the research methods to be conducted remotely. Due to the fast-changing nature of the pandemic and varying sensitivities of conducting research when people were experiencing additional stress, it was necessary to draw on a range of remote methods to suit the circumstances of individual participants. These included participant-produced video diary walking tours and a mix of email, phone and Zoom interviews.

Interviews conducted by email, over the phone or through video-conferencing software such as zoom provide the obvious benefit of accessing participants while maintaining distance, as well as requiring less time and expense than face-to-face interviews (Robson and McCartan, 2016). However, the increased physical, psychological and potentially technological distance in remote interviews methods can create a barrier to recruitment or effective communication (Block and Erskine, 2012). In addition, remote methods lack many contextual qualities, such as place, body language and other sensory cues, that attribute important additional meaning to the research data (Block and Erskine, 2012). Therefore, although email, phone and zoom interviews provided an additional valuable data

collection method when normal fieldwork activities were not possible, they were not a full substitute for the walking interview method.

Due to the limitations of remote interview methods, the research also explored the use of video methods to collect rich multi-modal data. Rose (2007) suggests that video methods can supplement more traditional ethnographic methods. Whiting *et al.* (2018) describe a multitude of benefits associated with video diaries, including offering immediate multi-sensory data that improves cognitive processing, memory and communicating complex meanings, and allowing the researcher to repeatedly 'revisit' the field. Therefore, to substitute the walking interview method, residents were asked to undertake a video recorded walking tour, using their mobile phone and an instruction guide as a prompt for what should be included (see Appendix B). Although this methodology presented its challenges, the video methodology afforded some surprising benefits, including broadening participant recruitment. The benefits and challenges of adapting to remote methods are discussed in Chapter 4.

Identifying problems and solutions through open coding

The audio and video recordings were transcribed using intelligent verbatim. Many researchers highlight the important role of transcription in becoming familiar with and initial interpretation of the data (Lofland and Lofland, 1995; Kvale, 1996), and therefore the first interview recordings were transcribed by the researcher. For time efficiency, later interview recordings were transcribed by an external transcriber. The transcriptions were then reviewed against the recording, standardised and anonymised, firstly to ensure consistently reliable data and interpretation, and secondly, to allow the researcher to familiarise themself with the transcript before coding. The written transcripts were combined with photos of the site, the participant's route through the site and memos of the researcher's observations and initial interpretations to produce a multi-modal transcript (Appendix D). This was essential in combining multiple data types before coding to identify and triangulate links between social, spatial and organisational aspects of resident involvement in shared landscapes. The multi-modal transcripts, field notes, research diary entries and documents were imported into Nvivo for coding.

Each piece of data was prepared and analysed as soon as possible after collection so that a simultaneous process of data collection and analysis could occur. This allowed the researcher to adapt the interview questions, methods and recruitment process in response to emerging findings. Although grounded theory broadly calls for the analysis of all data with an open mind to allow unexpected findings to emerge, the analysis need only focus on the data that falls within the research topic. The unstructured and explorative nature of the research approach produced masses of rich research data, including off-topic or irrelevant discussion. Therefore the data was filtered by its relevance to the

research topic while keeping an open mind of the potential relevance of anything discussed. Lofland & Lofland describe this as identifying *"guiding topics in the task of focusing data"* (1995, p. 101). In this research, relevance was determined by contextual, problem- or solution-focused data related to the topic of *residents' participation in shared landscapes* to ensure the coding contributed to producing patterns of urban commoning.

The mix of qualitative data was analysed initially using 'open coding', an explorative method for sorting and breaking down the data into small parts and summarising its meaning in a short phrase known as a 'code'. Open coding is the first stage of inductive analysis that identifies case-specific problems or solutions. Codes are defined by the meaning that emerges directly from the data rather than pre-existing theories, concepts or other analytical coding frameworks, allowing as many codes as necessary to emerge in accurately encapsulating the particularities of the data.

Phase 2: Pattern clustering

Identifying emergent patterns through axial coding

Axial coding is a grounded theory term that describes the clustering of similar or related open codes through constant comparison and repeated rationalisation (Chun Tie, Birks and Francis, 2019). This was undertaken in Nvivo and by hand by combining similar or related context, problem and solution codes under new 'parent' nodes labelled to summarise higher-level and more general contexts, problems and solutions. So as not to lose the detail provided within the specific examples of open coding, case-specific variations and dimensions were nested within core context-problem-solution associations, acting as potential patterns. This grounded process of open coding, followed by clustering, or axial coding, gradually develops more general codes (potential patterns) from case-specific open codes grounded in the data, as illustrated in table 3.5. During the coding of multi-modal transcripts, emergent categories to organise the codes became necessary to navigate the growing coding framework. After several iterations, the codes were structured under categories describing the broad ways in which residents were collectively involved in shared residential landscapes, summarised in Chapter 5. The framework remained unfixed and flexible throughout the process to allow new codes to emerge.

Empirical data	Case-specific example	Core context-problem-solution	Potential pattern	CATEGORY
"...all of the spaces including the terraces and balconies and this deck, they're all [shared]. But of course, we're not going to go through [another resident's] flat to sit on their balcony."	Threshold space is shared in theory but not in practice.	Give residents control over space close to house.	**Permeable buffers**	TYPES OF SPACES
"People walk up and down here. [The other residents] walk the dog, and that's fine, it's not our bit of garden. I think [the residents two doors down] feel a little bit more, 'actually, we don't want people walking up and down here'."	Residents want control over space close to house.			
"So everyone has got a balcony or a private garden, small space, small garden. So if you didn't want to be sociable you could use those."	Small private garden to be alone	Small private space or threshold for residents to be alone or personalise as they wish	**Small private plots**	
"...some small patio spaces had been built in discrete locations outside each house so that there is a small space to put plant pots and chairs."	Small patio for residents to personalise			
"So we've got a balcony which we can go and have a look at if you wanted, it's got some pots and stuff up there and things, so yeah"	Balconies for flats to personalise			
"And the vision here was productive gardens, so every household has their own small allotment"	Small allotment pot to grow food			
particular			*general*	
empirical data	*open coding*		*axial coding*	

Table 3.5. *Examples of empirical data open coded as case-specific variations, followed by axial coding, or clustering, of similar open codes under core problems and solutions, and then clustering potential patterns under categories.*

Case Study Reports and Cross-case analysis

A complete summary of each case was documented in separate case study reports (see supplementary documents). The depth of information provided in the report describes case-specific examples of each potential pattern. Each report follows the same structure—background information including case study name, photo, map and facts, findings organised by coding categories and potential patterns, then conclusion and limitations—so that comparisons could easily be made between cases. A cross-case analysis was then undertaken to compare findings between case study reports to identify significant and reoccurring solutions for urban commoning in cohousing landscapes. The cross-case analysis was achieved using a matrix or framework analysis (see Appendix

E), where a grid table was used to summarise the empirical data for each case against core context-problem-solution codes as shown in the example in table 3.6. This revealed context-problem-solution relations occurring across multiple cases, as well as variations in how that problem and solution materialises within each case and findings that may only occur in one case but remain significant. Therefore, the repetition of case-specific examples of problem-solution-context codes across two or more cases, or significant patterns occurring in just one case, were identified as patterns. This analysis identified 72 patterns of urban commoning (see section 5.2).

Pattern number and name	Repetition (no. of cases)	Summary pattern evidence by Case Study			
		Poplar House	Timber Lane	Grove Villa	Cobble Yard
58. Small private plot	3	Patio spaces, narrow transition at the front, fenced off area for dog, balconies, are 'unofficial' private spaces.	All residents have a private back garden or a private balcony if they live in a first floor flat. All residents are given a private allotment plot.	Most residents have a private balcony or patio space. Two residents do not have a private space.	At present there are no private outdoor spaces on the site, with all the outdoor spaces collectively owned.
59. Permeable buffer	3	Narrow transition space at front of new builds with plant pots and benches, maintained by residents.	1-2 meter strip at front that residents maintain. No hedges, fences or walls allowed. Policy that other residents can use these spaces.	Balconies create buffer and interaction. Plant pots on narrow paved area at the back of GF flats. Small wooden deck as buffer space.	Temporary moveable plant pots. Need privacy and ability to control space outside house. Considering planting beds as buffer spaces.

Table 3.6. *Example of the cross-case comparison matrix that evidences repetition of patterns across cases.*

Phase 3: Pattern writing

Writing prototype patterns

Alongside memo-writing throughout the research process in a research diary, the cross-case comparison matrix and case study reports form the evidence base from which patterns are written. Patterns are contained and presented in standardised templates to maintain a consistent and accessible format to allow each pattern to be read independently and used as a building block within a larger vocabulary of patterns for designing larger projects (Leitner, 2015). The standard structure of a pattern template in this research is as follows:

a) *Pattern category:* the broader category that the pattern fits within to aid in identifying relevant patterns.

b) *Pattern number and name:* a short phrase, usually referring to an action or element, that succinctly describes the solution to be easy to remember and recognise.

c) *Illustration/diagram:* a simple diagram or illustration visually communicates the core solution.

d) *Summary:* a one-sentence description of the core solution.

e) *Description:* a brief account of the situations and forces driving the problem and examples of how the pattern can be implemented to address them.

f) *Relevance:* number of *'s reflects how frequently the pattern occurred in the research

g) *Related patterns:* a list of numbers for other patterns that result from are a key component of or otherwise relating to the main pattern described on the card.

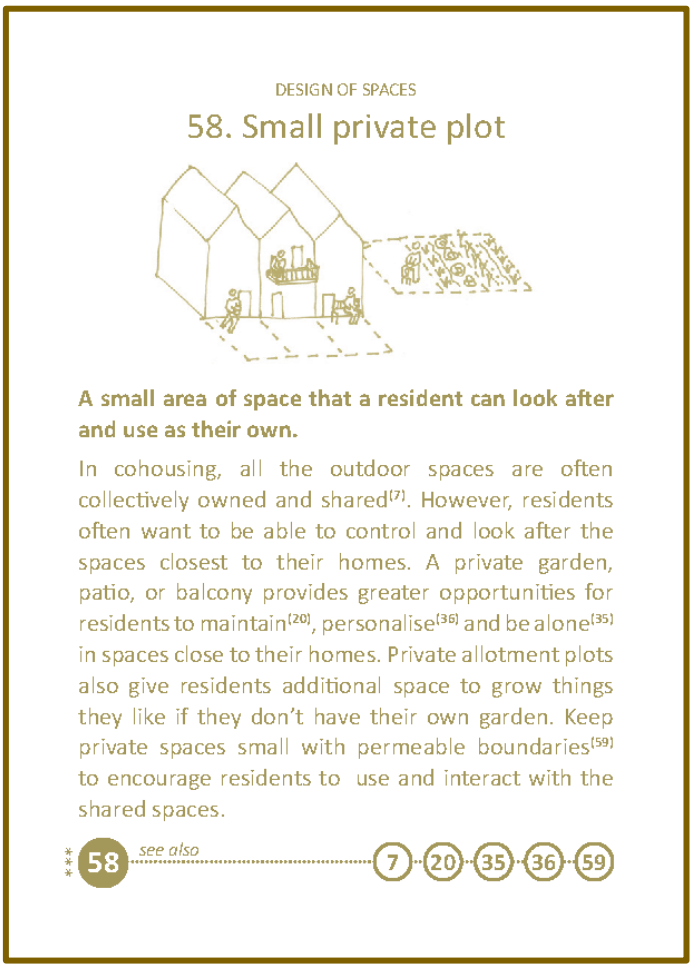


Figure 3.3. *Example of pattern card format including category, pattern number and name, illustration, summary, description and related patterns.*

This pattern template, visually presented in figure 3.3, is a condensed version of the Alexandrian template to make the patterns more concise as a more digestible format for pattern users. A playing card format was chosen for the pattern language template. Firstly, as a concise and readable way of sharing the research findings with cohousing residents and secondly, as a tactile, interactive and engaging tool that can facilitate collaboration in group settings. Each pattern name is either grounded in residents' own words from their interviews or other well-known phrases based on nouns or verbs so that each pattern reflects an implementable object, space, concept or action. The language chosen to describe the patterns is descriptive and instructional, avoiding jargon so that it is easy to understand and explain to someone else. The tone of the language aims to be informative rather than authoritative, avoiding words such as 'should' and 'must', to emphasise that there is no universally correct way of applying each pattern.

Phase 4: Language Collating

The language collating phase explores the relationships between patterns to discover high-level themes and concepts. The purposes of this phase were to firstly produce maps that would help readers navigate and identify relevant patterns, secondly understand the different ways in which the patterns related to each other as a language, and thirdly to generate theory from emergent higher-level categories themes or concepts. In the first instance, the patterns were grouped into thematic categories that reflected the core ways residents got involved in the shared outdoor spaces in cohousing, and to provide a logical way of organising, numbering and thus navigating the patterns. Further exploratory mapping was undertaken by hand to reveal the multiple relationships between the patterns as a language. This revealed high-level themes and concepts, which were subsequently used to structure the discussion chapters and draw together existing theory with the cohousing specific findings of this research. The patterns and exploratory mapping are presented in Chapter 5.

Grounded theory analysis encourages the continual comparison and refinement of codes into broader concepts and theoretical categories to generate theory grounded in the data (Sbaraini *et al.*, 2011). In this sense, phase 4 is a continuation of phase 2: pattern clustering, whereby identifying relationships between patterns allows them to be clustered in different ways into higher-level categories and themes. These categories or themes are more abstracted and conceptual than the patterns intended to be easily recognised and implemented by cohousing communities. However, this conceptualisation of broader themes and categories is useful for generating and linking theories related more broadly to urban commons.

Phase 5: Language Testing

The pattern language, documented as a deck of cards, was tested in workshops with cohousing residents and students. There were multiple reasons for testing the pattern language through workshops. Firstly to confirm or refute the patterns from the perspective of cohousing residents; secondly, to evaluate the usability of the pattern language; and thirdly, to understand the potential impact or usefulness of the pattern language to different stakeholders. Because of the pandemic on limiting in-person and interactive events, the capacity to undertake systematic and wide-ranging testing of the pattern language was significantly reduced. This phase provides some insights into the confirmation, usability and impact of the pattern language card game that can be used to inform further research and testing, as opportunities allowed. The methodology for each card game workshop was developed specifically in response to the stage and needs of the audience (see table 3.7). Photos and observational fieldnotes were taken shortly after the workshop subsequently transcribed into Nvivo. A simple qualitative analysis of the answers was undertaken to highlight the broad outcomes of the workshop. Details of the types of workshops held and initial findings are outlined in section 5.4.

Goal	Audience	Setup	Activity 1	Activity 2	Activity 3
Problem-solving	Established cohousing group	Small groups	*Individually write or draw vision; share with group; select key visions*	*Discuss and write challenges and problems in achieving that vision*	*Deal out cards; put down cards that solve the problems*
Design from scenario	Design students	Small groups	*Discuss characteristics and values of future residents*	*Deal out cards; build scenarios from cards dealt*	*Select "design of spaces" cards that support this scenario*
Progress evaluation	In progress cohousing group	Whole group	*Layout cards with solutions that have already been implemented*	*Layout cards with solutions discussed but not yet implemented*	*Layout cards with solutions yet to be considered or implemented*

Table 3.7. *Outline of activity plans for different types of workshops aimed at different audiences.*

3.5 Quality Standards and Conclusion

This chapter concludes by discussing four tests often used to establish the quality of case study research: *construct validity, internal validity, external validity* and *reliability* (Yin, 2018), and a note on research ethics, to further scrutinise the methodology developed in the previous sections.

Construct Validity

Construct validity refers to the definition of appropriate operational measures for the concept being studied (Yin, 2018). In this research, the topic being studied is *patterns of urban commoning*

through residents' collective involvement in shared landscapes. The operational measures for patterns are defined as *recurring problems and solutions* relating to cohousing residents' participation in shared landscapes. The justification for cohousing as a case that demonstrates a real-world example of urban commons through resident participation in shared landscapes is outlined in section 2.4. Further to this the reasoning for selecting of reoccurring solutions and problems as an operationalisation of patterns is also outlined in this chapter. Construct validity is established in this research by documenting a chain of evidence in the case study reports and cross-case analysis matrix that links the empirical data to the patterns and findings in this research. Secondly, construct validity is increased through the triangulation of multiple types of sources of data to stimulate intersecting information. Finally, an evaluation of the type and complexity of data captured within the findings produced by the methodology is discussed in Chapter 5.3.

Internal Validity

Internal validity authenticates causal relationships in research findings. It is a standard most relevant for explanatory or causal studies, rather than descriptive or exploratory studies that do not seek to identify causal relationships (Yin, 2018), which applies to this research. In other words, internal validity deals not with *what* the patterns are but *how* or *why* they came about. The explanations' underpinning patterns are examined in the detailed descriptions within individual case reports where any conflicting evidence is presented. Finally, this research identifies patterns as working hypotheses with the potential for future testing and adaption to build upon the *how's* and *whys* in their real-world application, reflecting the hypothesis-generating process of grounded theory (Glaser and Strauss, 1999). Participant feedback gathered during the initial testing of the pattern language in workshops further indicates the internal validity of the findings.

External Validity

External validity refers to how findings can be generalised and transferred to broader contexts. The purpose of case study research is not to statistically generalise to wider populations but to expand upon theory through the analytical generalisation of empirical observations (Yin, 2018). In this research, cases were selected to meet the same criteria and ensure relevance to the research topic. However, the individual characteristics between the four cases varied across size, urban centrality, and age of development (summarised in Chapter 5). Therefore, where patterns replicate across multiple cases, they demonstrate higher potential generalisability to other cohousing case studies. This is reflected on each pattern card by the number of *s and substantiated by comparing the findings with cohousing literature in Chapter 6. In addition, this thesis aims to generalise the conclusions of this research to urban commons theory. Lessons learned from case study research can be applied in a wide variety of situations beyond the case population (Flyvbjerg, 2006). The similarities and differences of

the findings in this research and urban commons theory are discussed in Chapter 6, and recognition of the limitations of this generalisation and potential for future research to establish further relevance are outlined in Chapter 7.

Reliability

Reliability demonstrates that the research procedures can be duplicated with consistent results, minimising errors and biases. Yin (2018) states that case studies occurring at a particular point in time and place are difficult, if not impossible, to replicate. However, reliability in case study research is achieved by accurately documenting the research protocols and fieldwork procedures. This is achieved in this research by outlining the fieldwork and analytical method in detail in this Chapter, making memos to document the analytical process, and developing a database of evidence within the case study reports and patterns, providing a chain of evidence linking the empirical data to patterns and themes produced in this research.

A concluding note on ethics

Given the pragmatic approach adopted in this research, it was necessary to consider the ethical implications throughout the research process. This involved multiple adaptions to the initial ethics application approved by the University of Sheffield, with three subsequent amendments approved at different stages of the research. The initial application was completed to gain access to the field and complete initial site visits. The first amendment adopted remote data collection methods during the pandemic, the second included children in the video diary method as requested by a participant, and the third considered the risks of undertaking workshops with residents and students post-pandemic. In addition to the ethics review process, small adaptions were made throughout the research to respond to the requirements and policies of each cohousing community. Given the incremental adaptation of the research design in response to changing ethical conditions, the related challenges and considerations within this research will be reflected upon in more detail in Chapter 4

The methodology developed and outlined in this chapter contributes to answering the first part of the research question, *"How can a pattern language methodology for urban commoning in shared residential landscapes be developed and applied in the context of UK cohousing?"* It responds partly to the criticisms 'A pattern language' has received (Alexander *et al.*, 1977) by utilising the well-recognised grounded theory approach to create patterns underpinned by a strong empirical evidence base, from which theory can be generated. The following chapter (4) will outline how this methodology was applied in practice to produce the pattern language output presented in Chapter 5.

4 THE RESEARCH IN PRACTICE

This chapter describes the research as it was implemented in practice. It is presented as a personal reflection on the research process by drawing upon field notes and the research diary and therefore is written in the first person to reflect the immersive and personal approach to the research. It provides detailed consideration for how the grounded pattern methodology was applied in the study of urban commoning in cohousing landscapes. In doing this, the chapter highlights what I learned through using this methodology, including what I was and wasn't able to achieve, the improvements I made along the way and my responses to changing circumstances. Finally, it tells the story of how the pattern language was produced in practice, providing a narrative link between the methodology and results chapters. Therefore, I conclude this chapter by summarising what lessons have been learnt from these reflections that may be useful for future researchers working in cohousing or who wish to apply the methodology.

The reflections in this chapter cover fieldwork conducted between August 2019—August 2020, followed by workshops held in 2021, and the analytical process was undertaken throughout this period. This included 13 observational site visits I conducted as a volunteer during workdays or as a guest at events, eight walking tour interviews and two remote interviews with residents (by Zoom, phone or email), three document elicitation interviews with design practitioners and three walking tour video diaries made by residents during the pandemic. Photos, sketches, and fieldnotes during site visits, alongside other relevant documents, provided further supportive case study data.

4.1 Access, recruitment & consent

The cohousing research field

Cohousing in the UK has experienced growing interest from researchers, with some high-profile cohousing groups receiving large quantities of research requests and anecdotal reports of communities experiencing research fatigue (Fernández Arrigoitia and West, 2020). In this context, a general willingness of cohousing residents to contribute to research, combined with a high level of

interest in cohousing from researchers, has led to communities becoming fatigued from their involvement in research. I first became aware of this when I began scoping out potential cohousing cases and practitioners to invite to participate in this research project. Several cohousing groups and design practitioners' websites stated that they did not accept research requests due to a lack of capacity to deal with the number of queries they receive. An informal conversation with another PhD student studying cohousing described their difficulties finding cohousing groups willing to participate in their research, and those who agreed only invited them to visit during public open days.

Although early conversations with cohousing residents suggested that they were willing and interested to participate in research, they also described repeating themselves in interviews or feeling disappointed to not be informed of the results and outputs of the study they had contributed to. An extract from my research diary explains how one resident *"had been very open to working with masters research students in the past but had become a bit overwhelmed by the number of requests and felt disheartened from not hearing about any of the outcomes from students."* The demand for research on cohousing communities was confirmed by my experiences visiting a high-profile, well-established cohousing community, which had at least one research project taking place at any one time. I often met other masters and PhD students at open days who were curious to learn more about cohousing, and my fieldwork overlapped with at least two other PhD students researching at the same time. These early explorative site visits and informal conversations I had with residents, researchers and design practitioners involved in cohousing helped shape my research approach to minimise the input required of participants and maximise opportunities for valuable feedback.

Despite my initial concern that cohousing communities would be reluctant to participate in the research, I received a good response rate. I arranged initial visits with four of the seven cohousing cases I originally contacted by email and then a further two cases through emergent opportunities. Many participating residents felt compelled to help research students, driven by their previous experience in academia or education or a genuine interest in the research and its outcomes. For others, it was an opportunity to talk anonymously about some of the difficulties and conflicts they experienced in cohousing which are perhaps more challenging to talk openly about within the group or other public arenas where cohousing is predominantly promoted as a positive or idealistic venture.

The residents interviewed were self-selecting and, therefore, reflect those residents who had the time and inclination to be involved. The majority were retired residents and those with previous academic experience sympathetic to helping research students. Therefore, the interviewees in this research were mostly older, well-educated residents with professional backgrounds (see table 4.1). The skew towards older residents with professional backgrounds may also reflect the predominant demographic in cohousing, which is often described as being dominated by more senior middle-class

professionals. However, this is hard to determine due to a general lack of demographic survey data for cohousing residents. The research nevertheless captured the views of residents who were both key participating members of landscape or gardening working groups and residents who had a more passive interest or involvement in the shared outdoor spaces. The range of interviewees also captured the views of both founding and new members of cohousing and those who felt cohousing was a positive experience, and those who spoke more critically of it.

Resident Code	Age	Gender	Education	Profession(s) (by sector)
Resident 54	70+	Female	-	(retired)
Resident 39	50-69	Female	Advanced	Higher education, Healthcare (retired)
Resident 46	30-49	Female	Advanced	Civil Service
Resident 60 - 62	0-18	-	-	-
Resident 41	70+	Male	Advanced	Higher education, Healthcare (retired)
Resident 26	50-69	Female	-	-
Resident 37	50-69	Female	Advanced	(retired)
Resident 44	30-49	Male	Advanced	Civil Service
Resident 45	30-49	Male	Higher	Manual Labour
Resident 53	70+	Female	-	(retired)
Resident 01	50-69	Male	Higher	(retired)
Resident 04	50-69	Male	Advanced	Education, Healthcare, Manual Labour (retired)
Resident 09	50-69	Male	-	(semi-retired)
Resident 29	50-69	Female	Advanced	Higher education (retired)
Practitioner 10	30-49	Male	Advanced	Design, Higher education
Practitioner 03	30-49	Male	Advanced	Design
Practitioner 01	-	Male	Advanced	Design; Higher Education

Table 4.1. *Table of residents and practitioners who were interviewed or made a video diary*

Ongoing consent at the individual and community scales

Like other types of community research, gaining consent within cohousing requires multiple levels of consent, first, in gaining access to the community through a key contact, and second, from the individual resident. As the presence and relationships between community members were dynamic, it also required a process of gaining continued consent and making my presence as a researcher known at all times.

The initial agreement for accessing the community for research was sought by emailing the main contact, identified through the cohousing community's website or existing contacts. Interest from the community to participate in research was sought by sending an invitation email and

information sheet (Appendix B) to the main contact's email, followed by an informal discussion during my first visit, normally during a workday. One of the more established communities used a set of agreed criteria to filter out and accept research requests. The requirements specified that research should be PhD level or above, be beneficial to the group and share the data or research outputs. By defining criteria for participating in research from the outset, this community could filter out and reduce the number of research requests and have early discussions with the researcher to ensure that the research benefits them. This research met these requirements by participating in workdays and sharing the research outputs through the pattern language card game. Reflecting on the idea of residents taking some control over the research, they contribute to the pattern '47. Taking part in research' outlines a solution for less experienced communities to filter and prioritise large numbers of research requests.

At the individual scale, consent was gained during interviews with residents or design practitioners by following a standardised process of providing an information sheet and consent form (Appendix B), verbally explaining the project and allowing residents to ask questions. Although instrumental in negotiating initial access to cohousing as a community, communal workdays were a more complex context to gain informed consent. Although the visit was agreed upon by the main contact, it was impossible to know in advance who would be attending, whether they were aware of the research project and if the same residents would participate in following workdays and events. To resolve this, the main point of contact was asked to inform residents of my visit in advance of the workday and distribute the information sheet. Further, when meeting any resident for the first time, I introduced myself as a researcher and gave a brief background of the research project, so they were aware of my role. I avoided making specific notes about residents in the field notes or research diary if a resident had not given written consent.

Overlapping roles and positionality

As a researcher, my primary role was to observe and interpret my own and others' participation in the shared outdoor spaces as an 'outsider', utilising overt, external and objective observations (Brannick and Coghlan, 2007). However, as a participating observer, I needed to establish an active role within the group, predominantly as a volunteer during workdays and, to a lesser extent, a 'friend of' the group' during community events and shared meals. Qualitative researchers participating within community-based research may experience a shifting positionality from 'outsider' at the beginning to 'insider' over time (Mayan and Daum, 2016). Robson & McCartan (2016) explain that participating as an observer within the group requires the researcher's physical presence and sharing of life experiences, learning social conventions, and establishing a role within the group. Becoming a partial 'insider' can provide useful knowledge from the first-person experience of participation in shared cohousing

landscapes and produce 'messy' overlapping roles and relationships (Mayan and Daum, 2016). Although building rapport is often highlighted as an important first stage in qualitative research, it may create an informal setting in which participants share information not intended to be included in the study and cause feelings of disappointment or even betrayal when the researcher withdraws from the field. First, this was dealt with by continually introducing myself as a researcher and reminding residents of my role. Secondly, when writing up field notes, distinguishing between what information was given to me in an informed capacity and retracting anything outside the scope of the research. I maintained long-term contact with residents and communities over several years and continued visiting cohousing communities after data collection. Where possible, I presented residents with the research results to provide a sense of closure to the research and signal the end of my formal involvement.

Parts of my identity—white, female, and highly educated—alongside my interests and previous experiences in shared living, gardening and community projects are arguably like those of a 'typical' cohousing resident. While this give researchers 'insider' characteristics beneficial for building rapport and trust (Brannick and Coghlan, 2007), such similarities can also create blind spots for researchers by promoting assumptions that increase subjectivity and bias (Robson and McCartan, 2016). In this research, my positionality likely played a role in building relationships within cohousing communities; however, this could equally have limited my perception. Given the criticism towards the barriers to accessing cohousing and lack of diversity (discussed in Chapter 2), my positionality is a potentially limiting factor in perceiving these barriers and how they operate.

In acknowledging the knowledge gained from my experience in cohousing was through a single perspective, I tried to remain open to different possible experiences and viewpoints. I chose not to collect any sensitive demographic data, such as race, religion or political preference, as it wasn't directly required to answer the research question and, with only a small number of cases, such information wouldn't have been representative of the UK cohousing population. However, during the fieldwork, I became aware that diversity still needed to be addressed in cohousing in the UK. This was reinforced by [redacted] residents' suggestions that they wanted to make cohousing more accessible to a wider range of people [redacted]. This is not to say cohousing communities are entirely homogenous. Residents still had various views and backgrounds, and not everyone fitted the typical cohousing resident stereotype. However, it did raise the question of whether the cohousing model could be completely inclusive when it depends on cooperation stemming from relatively homogenous views. Or could larger societal issues, such as rising house prices, cost of childcare and desire for better places to live, be enough of a driving force to allow a wider proportion of society to overcome differences and live together in this way? This is still too big a question to answer with the relatively

small number of cohousing projects in the UK. However, these reflections helped inform the Insider—outsider theme discussed in Chapter 6 and inform suggestions for further research in Chapter 8.

As well as experiencing insider and outsider perspectives during the research, my professional experience as a Landscape Architect gave me multiple and overlapping roles in the study. At the early stages, I explored the idea of how my previous experience as a Landscape Architect could be beneficial to cohousing communities and provide a potential 'way in' as a researcher. However, I was also conscious that my involvement as a Landscape Architect—Researcher could imply that participants would benefit from professional design input by participating in the research. This is not something I could guarantee to participants within the scope of the PhD due to the time required and the lack of insurance and resources from working outside of any professional design practice. However, I also didn't want to hold back from sharing any skills or knowledge that could benefit the group during the research. To avoid promising something I could not deliver, I stated that there would be no direct benefit to participating in the research in the participant information sheet, invitation email and conversations with participants. Once in the field, if opportunities arose, I shared my experience as a Landscape Architect by directing residents towards sources of information, case studies and contacts rather than directly through design work or technical recommendations. Reflecting on how I shared knowledge and contacts in this way contributed to identifying patterns for design professionals, such as being the go-between (72) and drawing on professional networks (39).

Reflecting on my role as a researcher-practitioner made me aware of how my positionality as a 'professional' and the information I shared was perceived and used by residents. Residents would often seek my opinion on issues that, unknown to me at the time, were points of contention within the group, such as choices of plants for shaded areas, whether to leave grass cuttings on the lawn, leave areas of grass uncut for wildlife and my thoughts on 'desire lines'. I became aware that my opinion was being sought as an external or impartial viewpoint to help clarify or justify contentious group decisions. The desire for residents to seek out external points of view, independent from residents' motives and preferences, was reinforced during a discussion with a resident—practitioner. This cohousing resident, as a design professional, had taken a large role in producing the design drawings and decisions for the planning permission; however, found it challenging to involve other residents in the design process as a fellow group member and suggested an external practitioner would be able to provide more engagement than him.

Although cohousing residents valued professional opinions, giving definitive answers to subjective queries (such as whether ivy should be left to grow up trees for wildlife or cut down to provide trees with more light) was often not possible. Reflecting on my gardening practice, I recognised that approaches to gardening are highly subjective and are influenced by a person's

aesthetic preferences and perspectives on how far gardening should intervene or exert control over natural processes. Therefore, an 'experts' opinion on its own would be unlikely to provide a satisfactory answer to residents' questions. Ultimately the decision would be more likely made by identifying points of overlapping interest and approaches to gardening between residents in the community. This inevitably led me to take on aspects of the 'technical advisor' role (pattern 69.), where I attempted to direct and suggest residents towards resources that could help them make their own informed decisions rather than giving definitive recommendations. This further highlighted the need for design practitioners working with cohousing communities to take on a facilitative role in guiding residents towards identifying their common interests rather than specifying rigid design solutions. This theme is discussed further in the DIY—Expertise section of Chapter 7.

4.2 Fieldwork methods

Workdays and being involved

My involvement in workdays provided short snapshots into community life on days specifically orchestrated for communal activity and coordinating external visitors. I joined in on two types of workdays: regular days for residents to get together and work on the shared landscapes together (figure 4.1) and working mornings held as part of open days for other visitors to get involved in. During these events, I drew upon my previous experience in gardening and volunteering on community gardening projects to find more practical ways to contribute to cohousing communities. These included basic things such as bringing my gloves and wellies, volunteering myself for tasks I knew I was capable of, tidying away tools at the end of the day, bringing food to share and making hot drinks. These aspects were essential in getting first-hand experiences of collective involvement in shared cohousing landscapes. As Lofland & Lofland explain, *"[y]ou can become intimately familiar with the particular role you are playing simply by playing it…"* (1995, p. 73). Therefore, this experience contributed to patterns such as having a 'point of contact' (42), 'shared landmarks' (54), and 'signs, instructions & labels' (66), which enabled me, as a visitor, a way of navigating group relations, finding my way around the site, learning how to use the composting system and putting away tools in the right place. Timber Lane cohousing, a more established case study, incorporated working mornings into open days as an efficient way of coordinating multiple visitors while benefiting from additional sets of hands for laborious jobs such as turning the compost heaps. During these events, I observed how cohousing residents involved other people outside the immediate group into the shared outdoor spaces alongside building networks and sharing information with other shared-interest groups.

Figure 4.1. *A photo of two cohousing residents and myself during a workday. (Photo taken by a resident participant).*

As my role shifted from visitor to 'friend of the group', I was invited to group events and meals, including an annual bonfire night, contributing to the patterns 'celebrations & traditions' (27) and 'a shared meal' (28). Another event I was invited to attend was a 'skillshare day' on designing your allotment. As a new allotment plot holder, my attendance not only contributed to my research but also became a beneficial activity for me outside of the research. An extract from my research diary describes, *"I found [the skillshare day] genuinely useful. Learning when to plant squash seeds…and where to source cheap materials for building raised beds…I stopped off at the wood recycling centre [someone at the event] had recommended in the city and picked up some sleepers to build raised beds."* This is an example of my firsthand experience of cohousing can become a 'learning project' (24) to facilitate the involvement of visitors and exchange 'individual knowhow' (25). Attending events also provided the additional opportunity for me to meet and network with other visiting cohousing groups. This resulted in the snowball recruitment of another cohousing group that attended another community's annual bonfire night.

Participating in working days as an external 'friend of the group' and landscape professional alongside my predominant role as a researcher provided many insights into residents' involvement in shared outdoor spaces. Generally speaking, most residents were candid and welcoming. However, there were still limitations to my observations, and although I have discussed the overlapping insider-outsider roles that I was able to occupy in cohousing, I was still participating predominantly as a visiting outside researcher. Although I was frequently invited to open community and public activities

and events and occasionally into people's homes and private gardens, I could not access more members-only events such as whole group meetings, which were more sensitive and likely controversial. Instead, second-hand accounts from residents' interviews provided the only insights into these occasions. Despite these limitations, firsthand observations and involvement in cohousing were essential to the research, and without the early fieldwork and visits made before the pandemic, I would not have been able to gain the same in-depth information documented in the case study reports.

Walking tour interviews

Walking tour interviews are a useful approach in cohousing landscapes as residents are likely familiar with and comfortable showing visitors around in this way; some residents gave me an unprompted tour around the site during my first visit. As previous researchers have noted (Deming and Swaffield, 2011; Riley and Holton, 2016), the spatial surroundings experienced during walking tour interviews successfully encouraged participants to reflect on their surroundings, without the need for the interviewer to ask questions. Several residents remarked on how the walking tour interview method allowed them to reflect on the site in new ways or visit parts of the site they didn't normally use.

> *"It's nice to do this because normally my interactions with the site I'm either working on something or I'm doing something, it's generally my life full stop so I don't do much sitting about, reflecting on stuff…so it's quite nice to walk around and think about it a little bit."* –Resident

From my perspective, I found that the walking tour methods required very little input from me, with the spaces themselves leading residents to talk about the activities and forms of governance related to these spaces, with only occasional prompting and clarification required. This allowed a very grounded and open approach to gathering research data, led from the spaces and residents themselves, rather than the researcher's questions.

Mobile interview methods are beneficial in gathering multiple types of data, including multisensory and embodied spatial data (Deming and Swaffield, 2011; Riley and Holton, 2016). During the walking tour interviews, I captured multiple types of data, including audio recordings of the interview, photos of the tour, and sketches of the route taken. Further to this, I was also able to capture first-hand embodied, sensory and territorial experiences of the site. This included using all my senses to pick up on sounds, smells and even taste when one resident offered, "*we've got some nice broccoli – help yourself if you want a bit raw"* so that I could pick up on the overall atmosphere and 'sense of place'. Further to this, residents' choice of starting point, the route through the site, and spaces to visit (or not) contributed to important territorial understandings of the site. This included shared landmarks (65) used as meeting points for the start of the interview, areas of the site residents felt they were more connected or places they didn't visit or feel comfortable going into. An example of this was

when one resident didn't feel comfortable taking me to an area behind other residents' private homes, despite others describing it as shared space anyone could use (discussed further in the Private—Shared section of Chapter 6). Another example included a resident who chose to orientate their walking tour around a series of seating points. This revealed meeting places at the benches in the commonhouse spill-out deck, spaces for family meals at a bench in their private garden, makeshift seats in a self-built treehouse, and areas for reflection with views across the city.

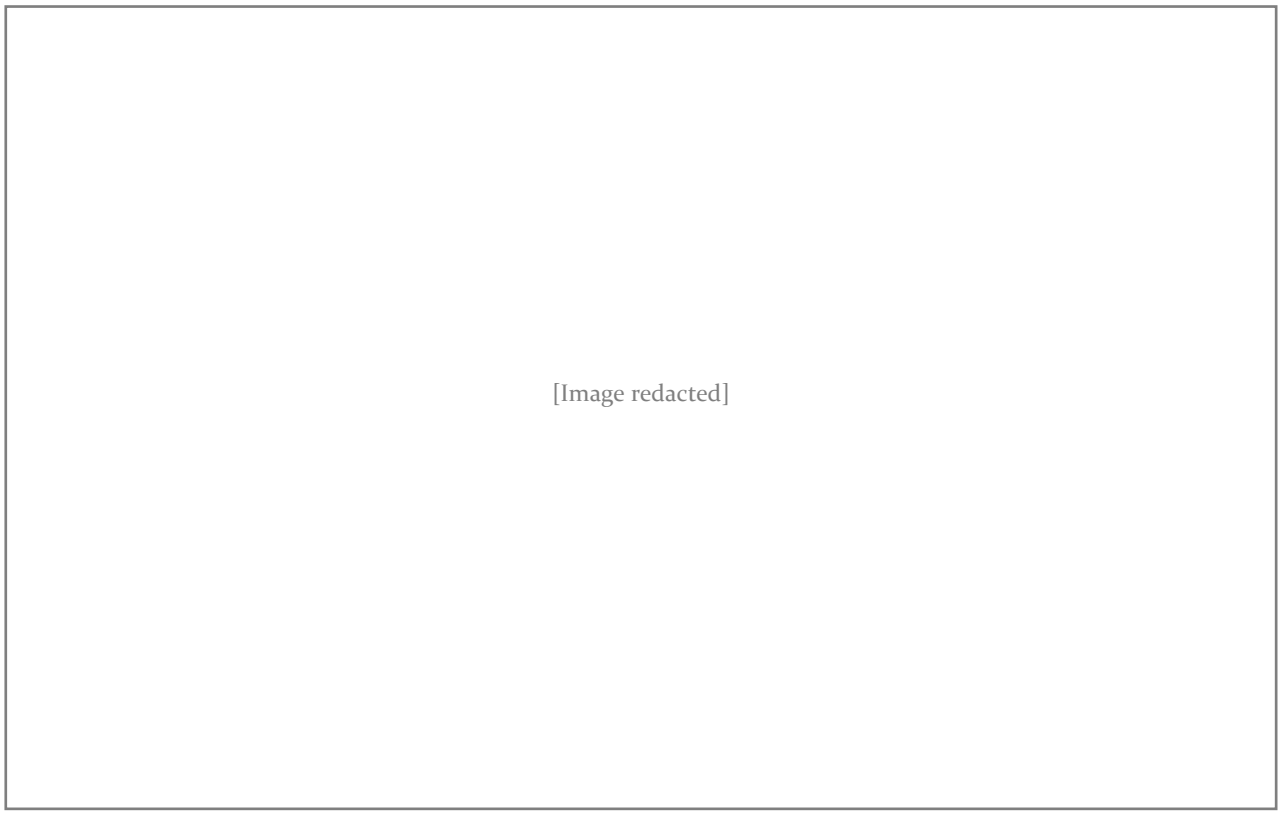


Figure 4.2. *An example of a participant's walking tour route around one of the cohousing cases.*

Unexpected encounters with other people on the site during walking tour interviews offered both benefits and challenges to the research. These instances provided insights into the everyday interactions between residents and the site. For example, during a walking tour interview, another resident unexpectedly joined in, which revealed contrasting perspectives between the two participants on why some residents didn't get involved in harvesting vegetables from the kitchen garden. However, this also created emergent ethical dilemmas, as other residents were potentially unaware that they were entering an audio-recorded interview-in-progress. At the same time, I didn't want to discard these interactions, if possible, as they were important and interesting contributions to the data. Therefore, anyone who approached the interviewee was made aware that a recorded interview was taking place and sensitive, personal information or comments accidentally captured on the audio recording were omitted from the transcripts. Non-identifying interactions that contributed useful

contextual data were briefly described within the interview as memos, as shown in the following transcript extract:

> *"The interview is interrupted by another member asking a question. The [interviewee] responds with some planting advice, offers to share some onion sets in return for a contribution to the landscape subgroup fund. There is the sound of children playing in the background."*

This interaction helps document the contextual atmosphere and interactions that contribute to the informal knowledge and resource sharing in cohousing, without gathering any specific, sensitive or identifying information about the non-participating resident. In the example where a non-participating resident spontaneously joined an interview-in-progress, the resident was informed of the recorded interview, asked if they would like to join in and prompted to fill in a consent form after the interview had finished.

Adapting the research methods

The fieldwork methods were tested through the first case study, Poplar House cohousing, as a pilot. The first two interviewed residents were asked to take the researcher on a tour of the shared outdoor spaces, followed by some questions to get feedback from the residents on their experience of the method. I had designed the walking to be as open as possible, giving little in the way to prompt residents, apart from asking them to give me a tour of the outdoor spaces and describe their involvement in them. During these initial interviews, residents made several comments asking for confirmation of what they were meant to be doing, such as *"Where should we go? What do you want to do?…I'm just talking, do you want to ask some questions?…I mean, do feed in, I'm rabbiting on…"*. This was partly a reflection of the grounded methodology and an attempt to avoid influencing the interview or data. However, too little guidance had resulted in participants lacking direction and, on one occasion, going off-topic. I noted in my research diary that the *"walking method was a good prompt for getting people to talk, but sometimes my questioning was too unstructured"*. By asking for residents' feedback, writing reflective notes, and analysing the transcripts immediately after the initial interviews were conducted, I adapted the methodology to give the interview more structure. This included a checklist of key topics (Appendix C), prompting questions and using more affirming responses during the tour. As I began to identify points of interest emerging from the early analysis, I tailored my prompts and questions to draw further information about that topic, as a type of theoretical sampling encouraged in grounded theory.

The biggest adaption to the research methods was made in response to the impact of the pandemic and subsequent lockdowns. In early March 2020, I incorporated social distancing measures into my fieldwork, followed by postponing the remaining fieldwork and interviews on the 16th of March 2020. I was halfway through the planned data collection and had made 12 visits to six cohousing sites

and conducted 10 interviews with residents and practitioners (see table 4.2). After the announcement of the first full lockdown on the 23rd March 2020 and realising that I may not be able to complete any further in-person fieldwork for the duration of the PhD, I scaled back the number of case studies to four and redesigned the methodology to gather some additional data remotely. I gained ethical approval in May 2021 to continue data collection using a range of remote methods, including video diaries, zoom and telephone interviews. To complete the main data collection, I received three video diaries and undertook one zoom interview and one telephone-email interview.

Cohousing Case	Before pandemic			During pandemic	
	Observational visits	Resident interviews	Practitioner interviews	Video diary walking tours	Interview by Zoom / phone / email
Poplar House CH	3	4	1	0	0
Timber Lane CH	5+	5	0	2	0
Grove Villa CH	3	3	1	1	2
Cobble Yard CH	2	1	1*	0	0
CH49 (withdrawn)	*1*	-	-	-	-
CH04 (withdrawn)	*1*	-	-	-	-
TOTAL	**15+**	**12**	**3**	**3**	**2**

[redacted]

Table 4.2. *The total number of visits and interviews undertaken and before and after the pandemic.*

Adapting to the methodology of video diaries raised additional ethical and practical considerations. These included ensuring residents had access to appropriate equipment, were advised on what to film, how the video would be used in the research and technical considerations for sharing the video data. To address these issues, I developed an additional information sheet that included a step-by-step instructional guide and consent form that dealt with the specificities of video diaries. A further simplified visual version of these documents was developed to be used by children (Appendix B) at the request of one of the participants.

The use of video diaries produced several notable benefits. Before the pandemic, I struggled to recruit younger residents and residents with children to participate in the research due to their work and family commitments. However, during the pandemic, when most people began to work or study from home, the video diary method was appealing to some residents with children as a home-schooling activity that engaged children in outdoor spaces. This resulted in one participant asking if their children could be involved in making the research diary. Although I hadn't planned to include

children as participants in the research, the video diary provided unexpectedly rich insights into children's' perspectives and interactions with the shared outdoor spaces in cohousing (figure 4.3).

Figure 4.3. *A still taken from the family video diary showing children interacting in the shared spaces.*

Initially, I was concerned that some residents may find making a video diary intimidating or technically challenging. However, I found that residents of all ages could easily follow the instructional guide and felt comfortable, or even excited, making video diary walking tours on their phones. The data captured various spatial, visual and verbal data, like the walking tour method, with the site acting as a reflective prompt for residents to describe how they used and interacted with it. Removing myself as the researcher from the field had some additional benefits, including making it easier for residents to talk more candidly on the video. Residents who made a video diary spoke positively of the experience in their feedback forms, describing it as: "*enjoyable, having a chance to wander around the garden and think about how we use our shared spaces…More fun than I thought it would be!*". However, residents also spoke of the additional responsibility of ethically collecting the data. They described this as: *"more challenging than speaking to the researcher in real life as you had to remember the questions as well as consider the answers. Bit stressful with children and trying not to film neighbours/inside/anything confidential etc."* The biggest challenge in the video diary was the technical difficulties of sharing such large amounts of data. One resident had made several short 5-10 minute videos easily shared via google drive. However, two residents who made continuous 30+ minute videos struggled to upload them. In the end, the videos had to be transferred from their phones onto a computer, which caused extra effort and time for the participant. Therefore, planning how videos can be shared easily and ethically is important to plan at the early stages of participant-produced video methods.

The cohousing residents participating in the research were impacted by the pandemic in various ways. This included emotional and physical impacts on their health, shielding and isolating within smaller than average homes (sometimes with no private gardens), working and schooling from home, and the logistics of social distancing within a development designed for social contact. Although communities and residents had already consented to take part in the research before the pandemic, this new context created additional burdens on residents that potentially affected their capacity or willingness to take part. After pausing the study during the initial onset of the pandemic, access and consent were sensitively reassessed and discussed, firstly with the main point of contact and secondly with each participant. This resulted in a mutual agreement for one cohousing case to no longer be involved in the research because of the number of now vulnerable residents living there and the limited site visits and data collection completed thus far. The remaining cases agreed to continue participating in the research, and I found that residents were generally eager to continue. I noted that residents were driven to take part in remote interviews to process the sudden changes they were experiencing and as a conversational outlet while isolating to discuss both the positive and challenging aspects of living in cohousing at that time. This created further ethical tensions between providing residents with the outlet needed to talk without taking undue advantage of a situation that put residents under additional strain. This was continuously considered throughout the remaining interviews by reminding residents that they could drop out at any time, being flexible in the way residents wanted to contribute to the research and taking cues from participants as to their ongoing capacity to be involved.

One way I achieved this was through the flexible use of different research methods to suit participants and gather data where it was possible. This included using remote interview methods when video diary methods weren't possible. Residents suggest the most appropriate methods of data collection to suit their circumstances. For example, a resident who didn't feel confident in making a video diary or zoom call so instead requested a telephone interview preceded by a short, written email diary. Another resident, who was limited in their confidence moving around the site while filming, requested a zoom interview and similarly kept me up to date with goings-on by email. These methods were less effective in capturing spatial data and getting the participants to reflect on the spaces themselves instead of focusing more on the social and organisational aspects of the group. In general, these interviews were also shorter than those produced from the walking tour interviews, partly because long zoom calls were more tiring for participants, leading in one case to finish the interview before all the questions had been asked. However, the flexibility in using multiple methods and responding to residents' individual needs was essential in gathering data ethically during the pandemic.

Sustaining contact with the group throughout the research was particularly important to ensure residents felt connected and involved in the research project. This was achieved most

successfully, before the pandemic, through my continued involvement in workdays. However, joining workdays became impossible during the pandemic between March 2020 and August 2021. Although I tried to sustain communication by email, I found it harder to maintain contact with some of the communities as it was easy for the contacts to forget to reply to emails, and as a result, I lost sustained communication with some participants. I explored various ways to feedback the research findings and organise follow-up visits to cases when circumstances allowed, which I will reflect on at the end of the next section.

4.3 Pattern language development

Analytical process

Collecting data using different methods resulted in recording different formats of data sets, including field notes, interview recordings, photos of the site, and documents. I found analysing different types of data in isolation from one another limited the ability to make direct comparisons and establish relationships between the different types of data. To avoid this, I created multi-modal transcripts, where photos taken during walking tour interviews, stills from video diaries, analytical notes, observations and memos were combined within the transcripts (see appendix D). The multi-modal transcripts successfully allowed me to view and analyse the different types of data together to make connections between them.

The initial exploratory coding process of grounded theory, where each line in the transcript is summarised with an appropriately named code, aimed to organise the data under short phrases that accurately reflected the data itself rather than any preconceived concepts. Initially, this was a very time-consuming process, producing masses of codes that were hard to navigate. For example, the open coding process of the first interview identified 460 different pieces of data coded to 115 different codes relating to the context, problem, or solution for resident involvement in shared outdoor spaces. This first coding exercise was messy, producing several repeated, overlapping, closely related or irrelevant codes as I got used to the coding process. It was impossible to continue coding further transcripts without rationalising them into a more concise framework, so they were easier to navigate. This was difficult to navigate on a computer screen, so I found it easier to print off the codes and organise them by hand (see figure 4.4), as suggested by other researchers working with pattern languages (see Chapter 3). With each interview I coded, the coding framework was refined by repeating this process and clustering corresponding problem and solution code pairs.

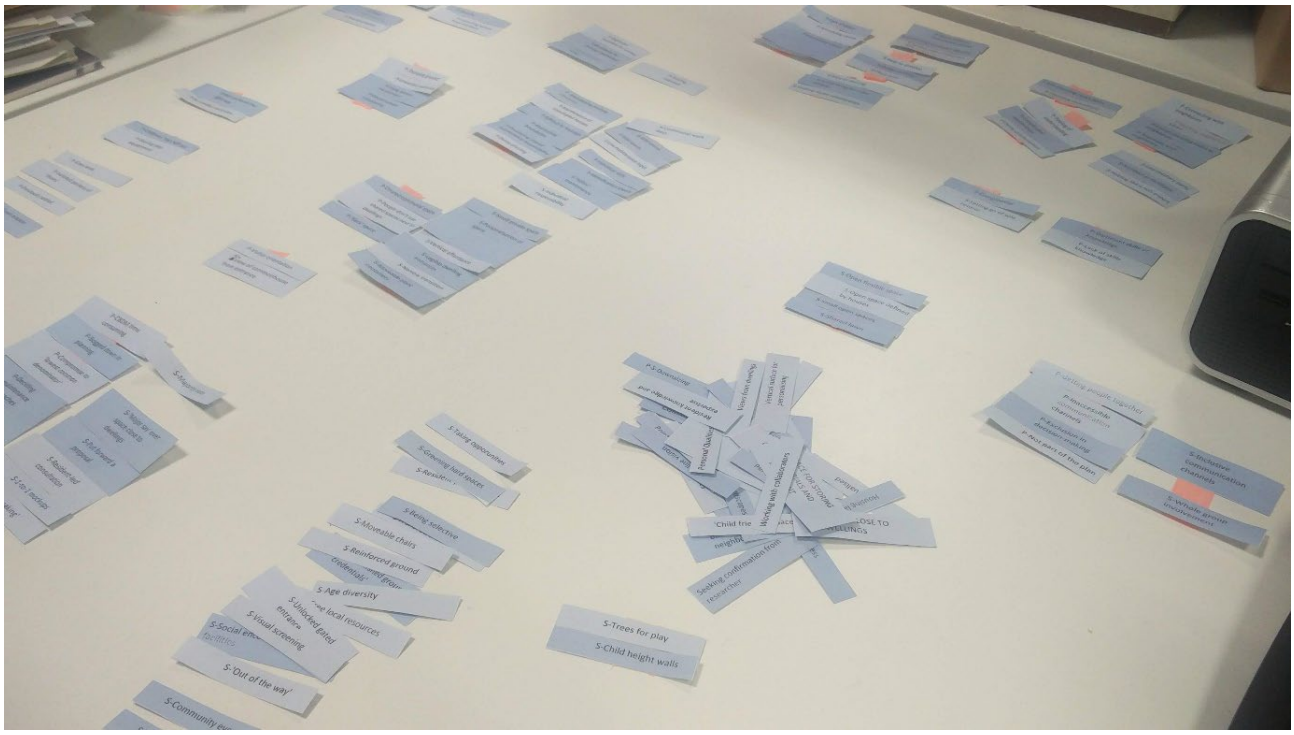


Figure 4.4. *Refining the coding framework by printing out and clustering similar or duplicate codes by hand.*

The process of clustering together similar case-specific codes gradually revealed broader 'core' contexts, solutions and problems. The challenge in this process was knowing when to stop clustering from achieving the correct level of abstraction in core problem-solution codes. Rising (2007) suggests that the abstraction of a pattern should go no further than is needed to convey a core solution so that it can be adapted to suit the context it is being applied. Throughout the clustering process, therefore, I constantly reviewed the abstraction level of the codes to identify patterns that were general enough to be used across different types of cohousing but not so abstract that they were no longer easy to grasp and implement by cohousing residents. The lowest-level detailed codes describe solutions and problem variations specific to a particular case and, therefore, can not be easily transferred into other contexts. For example, the codes 'private patios', 'private balconies', 'small private gardens' and 'allotment plots' reflected unique instances of private outdoor spaces within different cases. Codes such as 'allotment plots' weren't applicable in cases where residents weren't interested in growing produce or didn't have enough space on their site. Therefore these case-specific solution codes were clustered into the 'core' solution and pattern '55. Small private plot'. By contrast, when codes become clustered into higher-level and more abstract solutions, they become more abstract and difficult to interpret. For example, when the codes '8. Whole group consensus', '9. Smaller working groups' and '10. Having a say' became clustered within the higher-level code 'Scales of decision-making', it became clear that this solution was no longer an implementable 'thing' or 'action'. Subsequently, the higher-level 'scales of decision-making' code was set aside to be revisited later as a broader urban commons concept named 'Nested and networked' discussed in Chapter 7.

Figure 4.5. *The case study reports became a useful archive to compare cases and identify useful quotes.*

Following this process, the coding framework was used to structure and then document all the case study evidence into detailed reports (see figure 4.5 and supplementary documents). The case study reports became an integral part of the analytical process by bringing all the different data sets and analytical observations into an evidence base organised by a framework of emergent patterns. This not only produced a useful archive of data from which evidence and quotes could be extracted to support the discussion Chapters 6 & 7 but also enabled easy comparison between cases to identify replication of patterns. The development of a matrix, comparing each code to the summary of evidence I found in each case study, ensured a detailed trail of evidence was documented for the development of each pattern (Appendix E).

Building theory through pattern mapping

The different stages of analysis occurred simultaneously, requiring an iterative approach of continuously revisiting different stages to refine the coding framework. During this process, I kept

memos to document the emergence of new codes and changes to existing codes. The memos became a useful place to keep track of any significant or interesting relationships. These included memos highlighting the contrast between individual actions and communal decision-making and the "thinness" of boundaries between residents' private and shared outdoor spaces. The following is an example extract of one of the memos I wrote during the analytical process, which would later help to inform the exploratory mapping of patterns to identify broader themes and relationships:

> *"The node 'individual enterprise' sits on a spectrum with 'collective planning' and relates strongly to 'resident knowledge', 'empowering residents involvement', 'time, energy, resources prioritisation', 'personalisation', 'shared responsibility',...'allocating maintenance tasks', 'personal motivation', 'out of control', 'collective micro-managing', 'inclusive decision making', 'different visions', and 'empowering individual involvement'. Are these part of a larger category called 'Making room for individual enterprise within a collective'? —* Analytical memo

Once the bulk of coding had been completed and I had begun writing up the codes into a pattern language format, I was able to start the exploratory mapping of patterns. As in the initial clustering of codes, I found it easier to print off the prototype patterns onto paper and manually move them around to explore the different relationships between patterns. This demonstrated that patterns could be mapped and organised in multiple ways. The different ways the patterns were exploratively mapped is illustrated in Chapter 5 and formed the basis for identifying the broader themes and categories discussed in Chapters 6 & 7. This methodology, therefore, builds upon previous pattern language approaches by demonstrating how patterns can be combined with grounded theory to develop new concepts and create theory.

Getting feedback

As highlighted at the start of this Chapter, the issue of research fatigue in cohousing was conflated with the issue of research disappointment or deflation, when residents who had been previously excited to be part of and contribute to research felt let down by researchers who didn't follow up or feedback on their results. Mayam and Daum (2016) highlight that the relationships built with communities through research are temporary, and eventually, researchers must leave the field, at which point participants may feel disappointed, abandoned or even exploited. Bloor and Wood suggest that *"the manner of the ethnographer's departure needs to be carefully managed"* (2006, p. 112). To address this challenge, I chose to feedback on the research results to the community to help create a sense of 'closure' for participants—an indication that the research had come to an end and to recognise their contributions to the research outcomes. Although the pandemic made this more challenging, I endeavoured to keep in contact and feedback on the research findings in various ways, including frequent emails and site visits, online presentations, in-person workshops, or posting out the pattern language card game and instruction booklet (Appendix F). Not only did this allow residents

to see how their input contributed to the research, but it also provided valuable and informative feedback that later steered my results and discussion.

I attempted to gain feedback from participants throughout the research process and incorporate this into the research design. As well as gaining feedback from residents in the initial pilot walking tour interviews and video diaries, during the later stages of the research, I presented the pattern language to several different audiences and in various formats to get feedback that would help develop the pattern language. Although I couldn't test, evaluate and develop the pattern language card game as extensively as I would have liked to, I was able to capture some initially glimpses into how the card game could be used and improved. The first feedback I gained was from an online presentation and discussion with one of the cohousing communities that had already participated in the research. This highlighted two key aspects. Firstly, the patterns could provide residents with a useful language to refer to when discussing new ideas for the shared outdoor spaces. In particular, the 'pocket retreat' (62) pattern was of interest to several residents trying to implement a similar idea on their site and later requested to share photos or examples of this pattern. Secondly, I received some more critical feedback from a resident who had recently experienced the tensions around the use of and decision-making of the shared gardens and felt the patterns didn't adequately reflect the realities of collectively getting involved in cohousing landscapes. This was a useful bit of feedback for my research. It highlighted that although the pattern language was designed to be a useful tool to positively orientate residents towards solution-based ideas, it didn't adequately express the tensions and difficulties residents described in their interviews. This led me to explore the patterns as solutions along spectrums of different conflicting tensions experienced in cohousing (outlined in Chapter 5), which later formed the basis of the discussion chapters (6 & 7).

The pattern language card game workshops were held in response to emergent opportunities due to the uncertain and changing context of the pandemic. Therefore, each workshop was developed to suit and most benefit the audience and the current circumstances (each workshop and its findings are described in Chapter 5). As well as providing useful constructive feedback on the pattern languages, the card game workshops I held later helped to confirm some of this thinking. In the introduction to the workshop, I briefly described the tensions identified in the research to the cohousing community who took part. In response to this, one resident jokingly reacted with, *"are you saying that we are not unique, and we all experience the same thing?"* Although this was a passing comment, it provided an initial indication that residents could relate to the tensions that had emerged from the research and were surprised by the idea that there were similarities between the difficulties they and other cohousing communities had experienced.

4.4 Conclusion

My reflections on the fieldwork and analysis raise several considerations for researching cohousing communities, adapting research during a pandemic and developing and applying pattern languages. These lessons learnt from this research are relevant to future research where fieldwork is to be undertaken in cohousing, during a pandemic or other unforeseen events, or when developing a pattern language from empirical data, summarised in the following paragraphs.

Although residents were willing and interested to take part in research, the explorative site visits and informal conversations in the early stages of this research highlighted research fatigue as a growing issue in cohousing in the UK. Finding ways to collect data that required minimum input from residents while benefitting the community in some way, such as volunteering during workdays, was a successful way of approaching the research in this case. Further, cohousing communities and researchers should consider implementing research participation guidelines and opportunities to adapt the study. This could include using creative and fun methods for engaging with different residents and useful ways of sharing the research findings. Participant-led video methods were found to engage and be accessible to a wide range of residents, partly due to the increased use of video calls in the pandemic. However, it is recommended the technical challenges of transferring video data are considered early on.

Researching uncertain conditions, such as a pandemic, requires the researcher to be sensitive to participants' changing circumstances and flexible in how they respond. Although many residents were keen to continue taking part in the research during the pandemic, it was sensed this was in part a need to talk about and process their experiences of living in isolation while in cohousing. Therefore, high awareness of participants' ongoing vulnerability and capacity to participate in the research is required when researching uncertain and stressful contexts. This requires the researcher to gain renewed consent to suit the change in circumstance, be flexible in their research methods to suit the participant's needs and be prepared to end data collection early if needed. There are many remote methods to choose from, such as online video interviews, that can facilitate data collection during a pandemic. However, the downsides to this where it was harder to recruit new participants that hadn't met the researcher before, it was more challenging to gather experiential spatial data, and online interactions tended to be shorter and less engaging.

Finally, in developing and applying a pattern language in this research, multi-modal transcripts were useful for combining multiple data types and analysing their relationships through memoing. A combination of electronic and paper modes of analysis was beneficial to keep track of emergent codes in Nvivo while intuitively organising clustering and exploring codes by hand. Further to this, the

grounded theory approach to developing a pattern allowed the researcher to abstract codes to various levels of abstraction, requiring the research to identify the necessary level of abstraction for developing either applicable patterns or more conceptual categories and themes.

This chapter provides an evidence-based account of how the methodology has been applied in practice. Together with the methodological development in Chapter 3, these chapters answer the research question: *How can a pattern language for urban commoning be developed to study cohousing landscapes as urban commons?* This is achieved by outlining a new methodology for developing a pattern language that combines the common stages of previous approaches with the rigour of grounded theory. Secondly, it describes the lessons learnt from its application in the specific context of cohousing. This begins to address some of the criticisms Alexander *et al.*'s 'A Pattern Language' received by developing a rigorous evidence-based approach to pattern language development. The following chapter presents the pattern language in its entirety in a pattern card format, explores the relationships between the patterns as a language, and the outcomes of some initial workshops of using the pattern card game as a tool for cohousing communities, practitioners and students. Section 5.3 explores the validity and characteristics of the findings produced using this methodology to further confirm the grounded pattern approach used in this research.

5 A PATTERN LANGUAGE FOR URBAN COMMONS

This chapter presents a pattern language for urban commoning in cohousing, including case study summaries, the 72 patterns as a deck of cards, a series of maps exploring the characteristics and connections between the patterns as a language, and findings from a series of workshops testing the pattern language card game. The pattern language presented in this chapter was produced through the methodology outlined in Chapter 3 and its implementation in Chapter 4. This included a process of 'mining', naming instances of problems and solutions within the data collected as codes, followed by 'clustering', a grounded theory approach to iteratively grouping codes into core concepts. These were treated as prototype patterns and used to compare the evidence for each pattern across case studies to identify repetition. The grounded theory process was open-ended, allowing as many codes and prototype patterns to emerge as necessary to adequately describe each problem and solution occurring within the data. Therefore the 72 patterns reflect the total number of core context-problem-solution associations that occurred across multiple case studies. The patterns are presented in a card template chosen to concisely convey the patterns to readers and offer an engaging and interactive format to test the game in later workshops.

5.1 The Cases

The research drew upon three in-depth case studies and one snapshot case study of urban cohousing communities in the UK. The cases ranged from small (0-10 homes) to medium (10-30 dwellings) in suburban or peri-urban locations. Most of the cases were recently established (in the last 5 years) except for Timber Lane cohousing, a more well-established example. Most of the cases were organised around a cluster layout, with variations including grouping flats within central buildings or isolated buildings dispersed away from the main cluster. All the cases engaged with design practitioners in the design phases.

CASE 1: Poplar House Cohousing

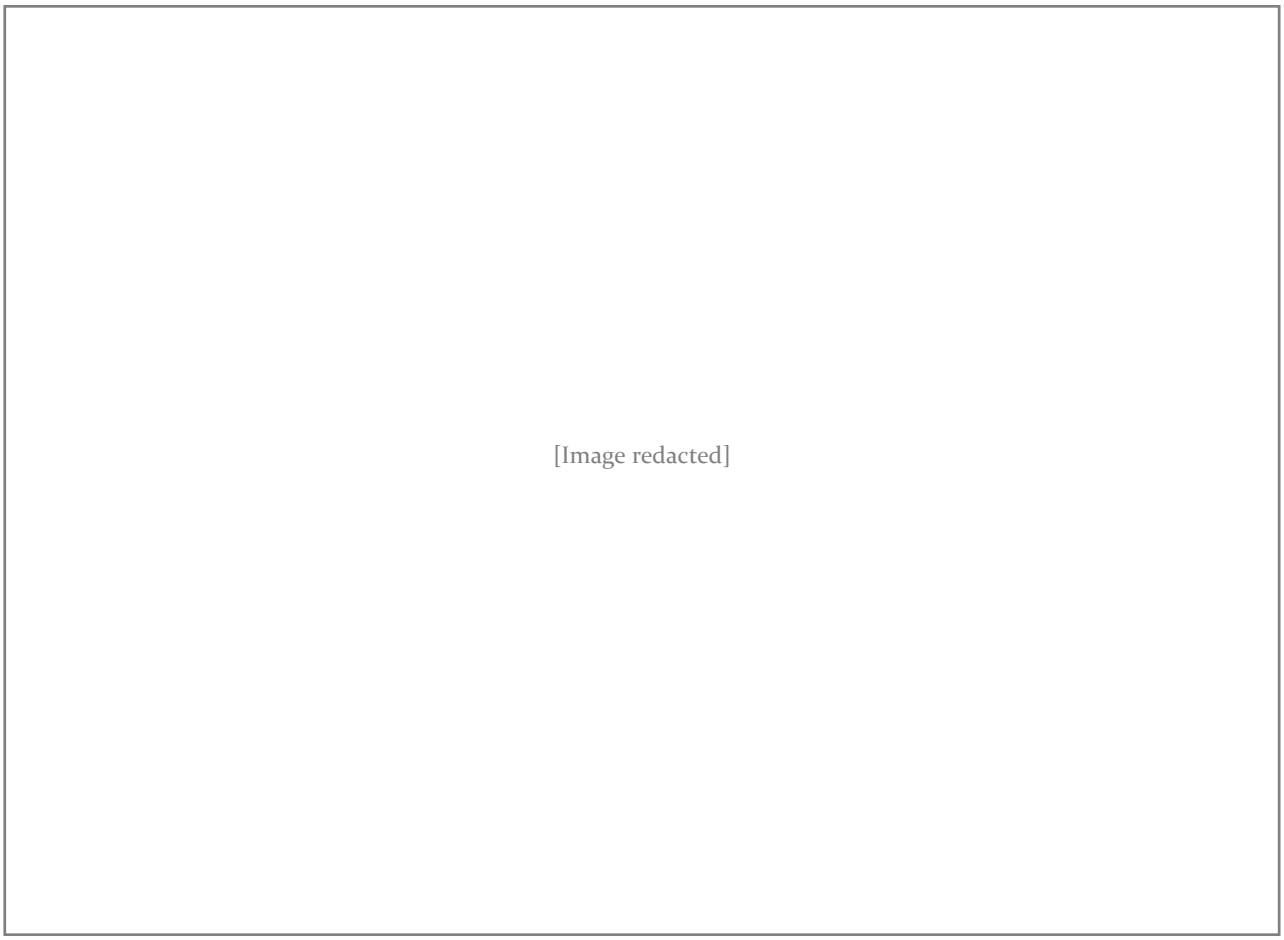
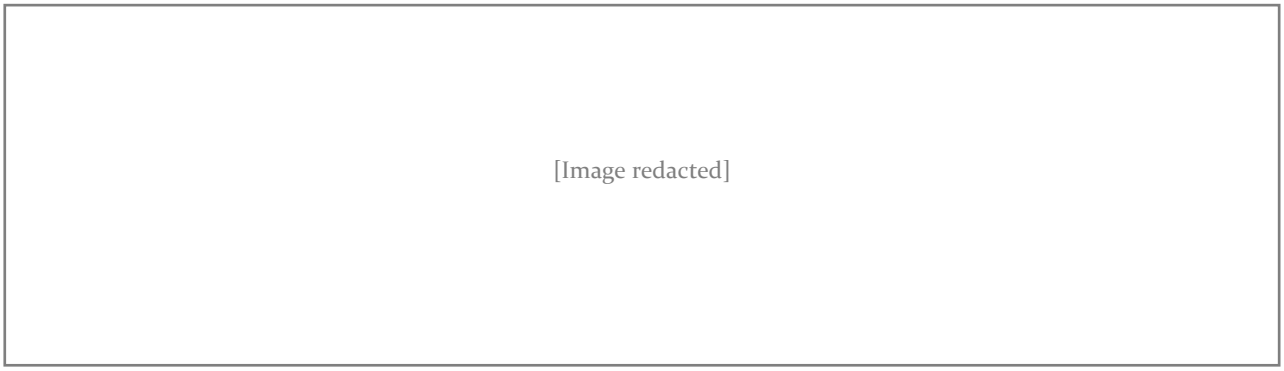
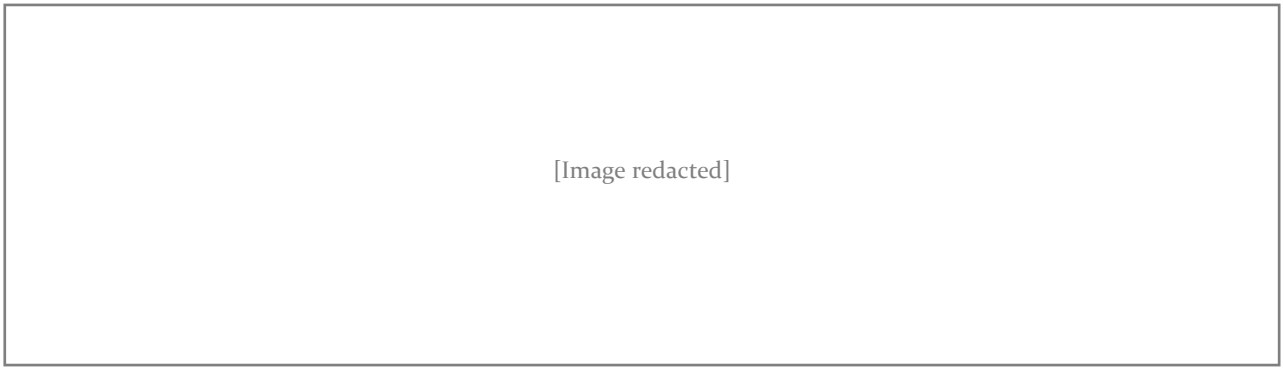


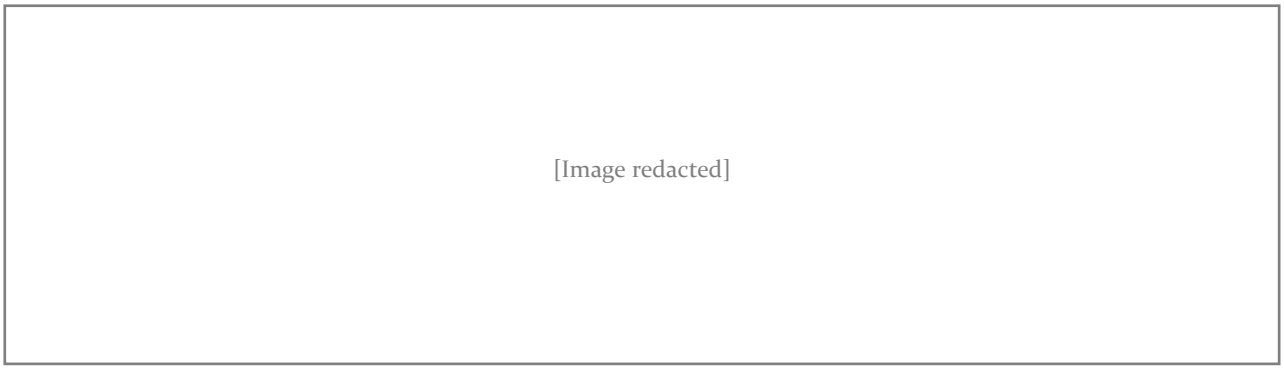
Figure 5.1. *A site plan of Poplar Hall Cohousing.*

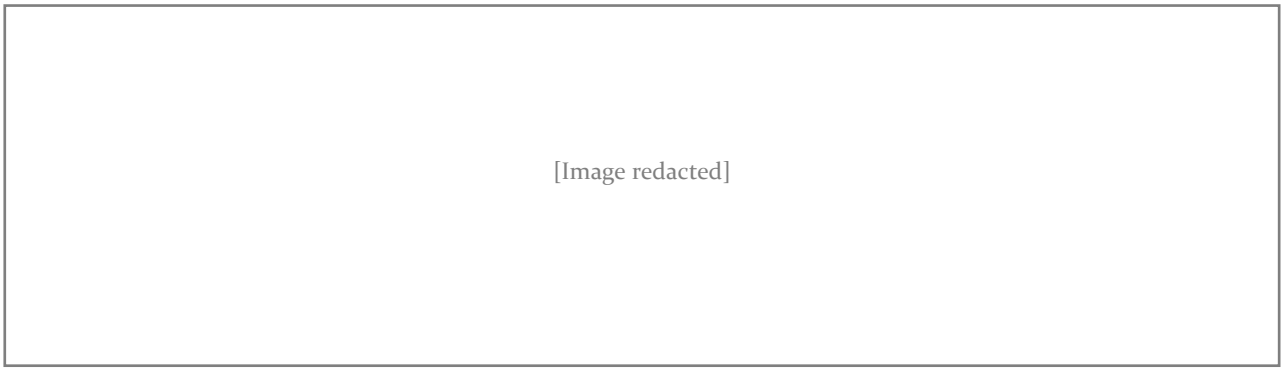
Poplar House cohousing is a small, recently established development located in a residential suburban conservation area. It consists of a renovated building with an interior cluster of common spaces and flats alongside a group of recently built eco-homes, as illustrated in figure 5.1. A historic, railing topped retaining wall defines the street-facing edge of the site, while the rest is enclosed by fenced or walled neighbouring gardens. A gated main entrance leads to a new car parking space and a self-built storage building. The surrounding historic grounds are used communally and include a prominent driveway, formal lawn enclosed on one side by a historic stone retaining wall, and mature border planting buffer the edge of the site (fig. 5.2). A large tarmac area serves as an outdoor eating terrace at the back of the common room kitchen (fig. 5.3). Each new build terrace has its own small, unfenced patio (fig. 5.4) and front porch, linked by a small path. Growing spaces are incorporated into a self-built kitchen garden and in pots and borders throughout the site (fig. 5.5). Residents hold annual working weeks and occasional working days to maintain the site.

Data: 4 site visits; 4 walking-tour interviews; 1 practitioner interview; site photos & documents









Figures 5.2. *The central lawn area is used for community events, outdoor eating and play.*
Figures 5.3. *A small 'private' terrace at the side of a new build house.*
Figures 5.4. *The terrace at the back of the common room kitchen is used for play and outdoor eating.*
Figures 5.5. *The walled kitchen garden is under construction at the back of the new build houses.*

CASE 2: Timber Lane Cohousing

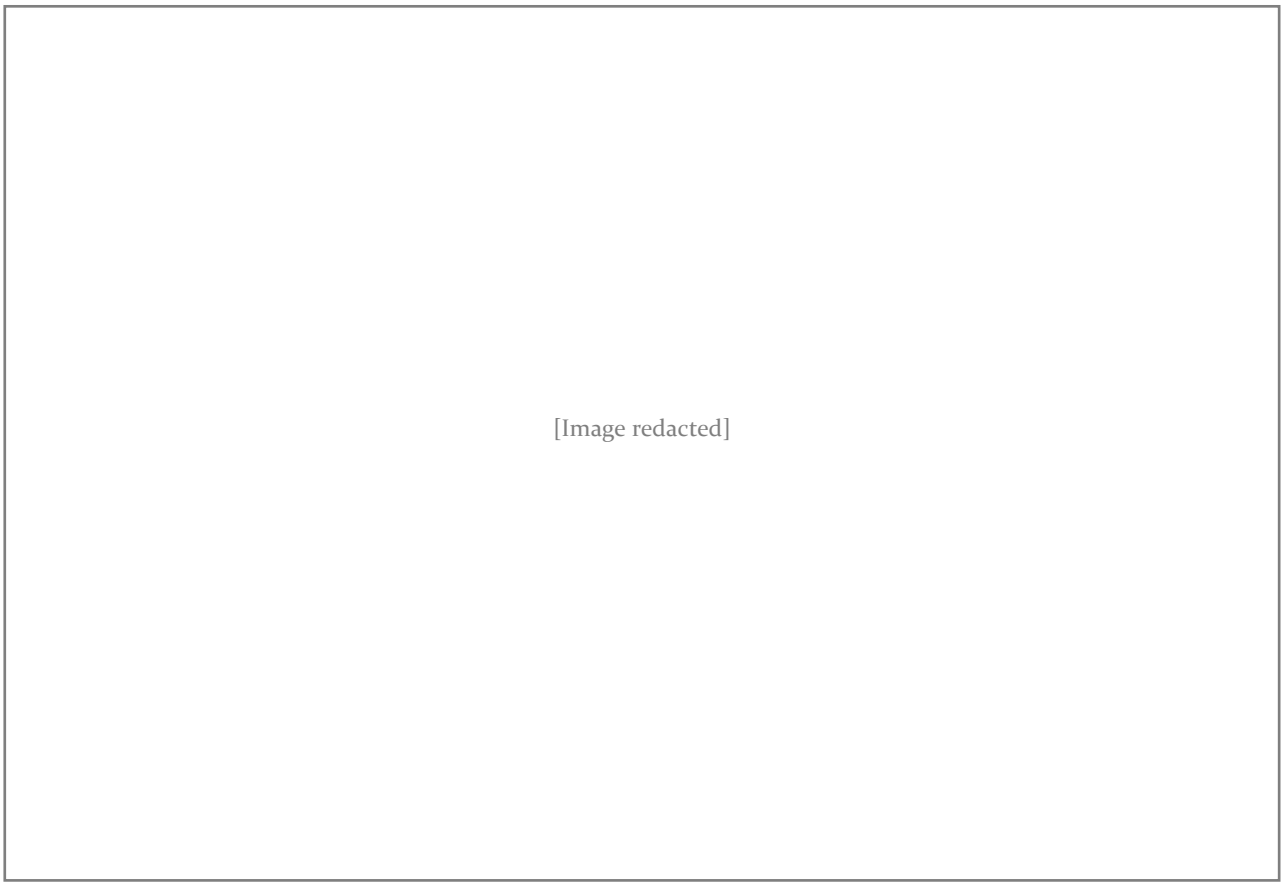
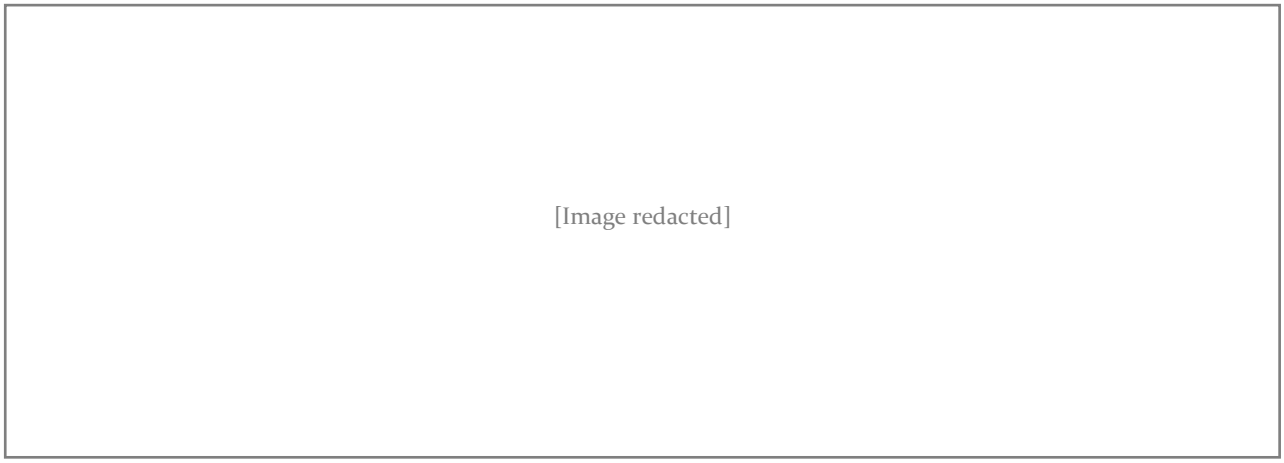
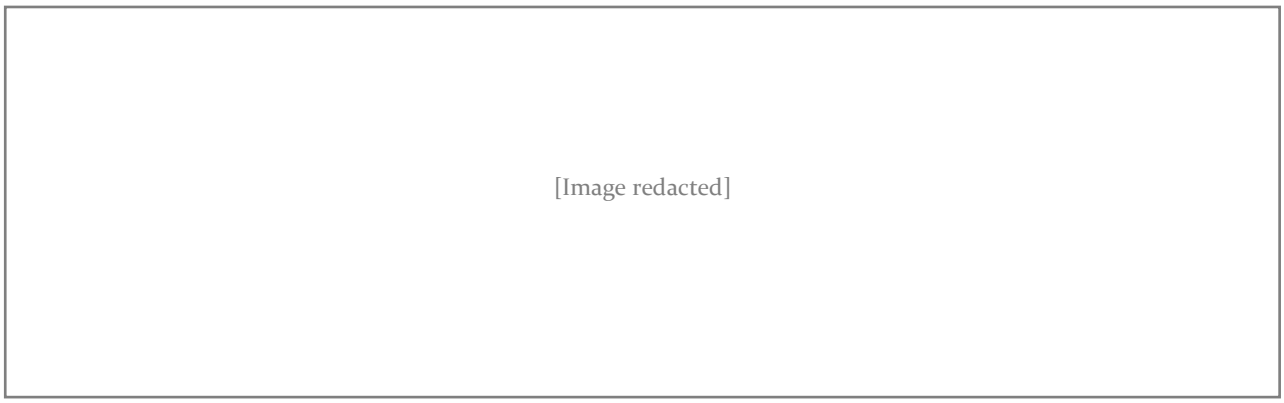


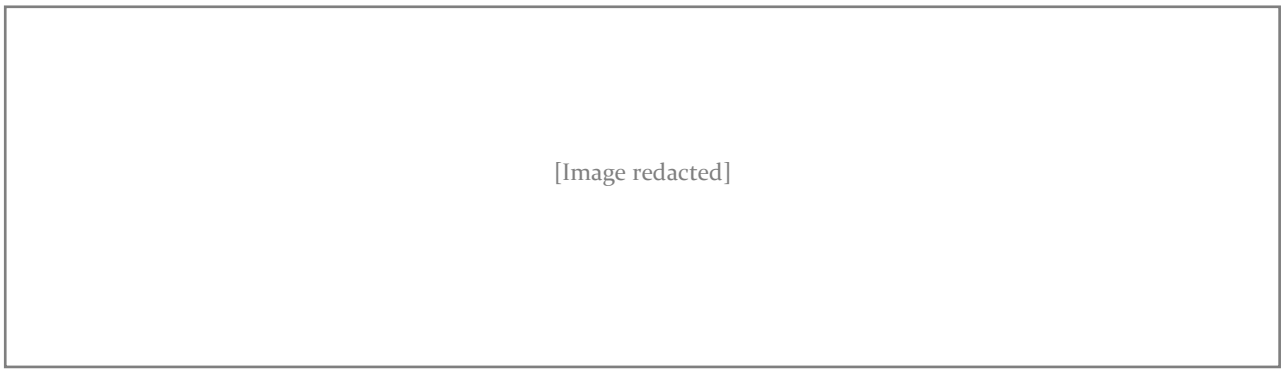
Figure 5.6. *Timber Lane Cohousing.*

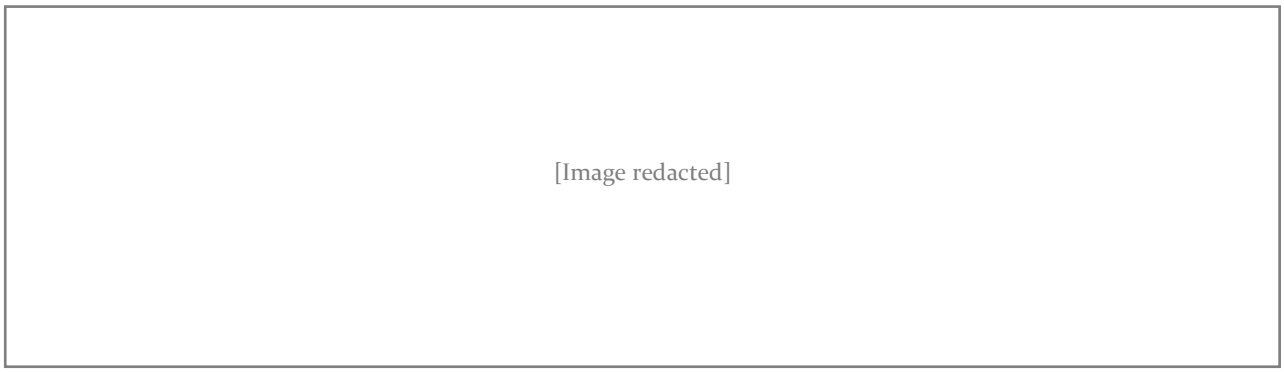
A well-established, medium-sized cohousing development located in a residential neighbourhood with a linear cluster of purpose-built eco-homes around two central shared lawns (fig. 5.8) and a water retention pond, as illustrated in figure 5.6. The site is surrounded by railings retained from its previous use, with open gated entrances at the North and South of the site so that members of the public can cut through the site if needed. The commonhouse is centrally located at the main entrance and overlooks a raised deck above the retention pond, where community activities can spill outside (fig 5.7). Two car parks are located towards the East and West edges of the site, and several shared bin and bike stores are located on main footpaths. Smaller garden spaces, including a rock garden, tropical garden, herb garden, kitchen garden and play space (fig. 5.9), are located towards the edges of the site or in between buildings. Towards the North of the site are shared allotments (fig. 5.10) and a public park. Each residence has its own private back and front garden or balcony. Sustainable building materials and permaculture principles inform the design of the site. Residents hold monthly workdays, alongside regular annual events and open days.

Data: 5 site visits; 3 walking-tour interviews; 2 video diaries; site photos & documents









Figures 5.7. *The communal wooden deck above the central retention pond acts as a focal point.*
Figures 5.8. *There is a central lawn between the linear cluster of houses for planting, play, and outdoor eating.*
Figures 5.9. *A flexible open space primarily used for DIY play and events.*
Figures 5.10. *View into the shared allotment space.*

CASE 3: Grove Villa Cohousing

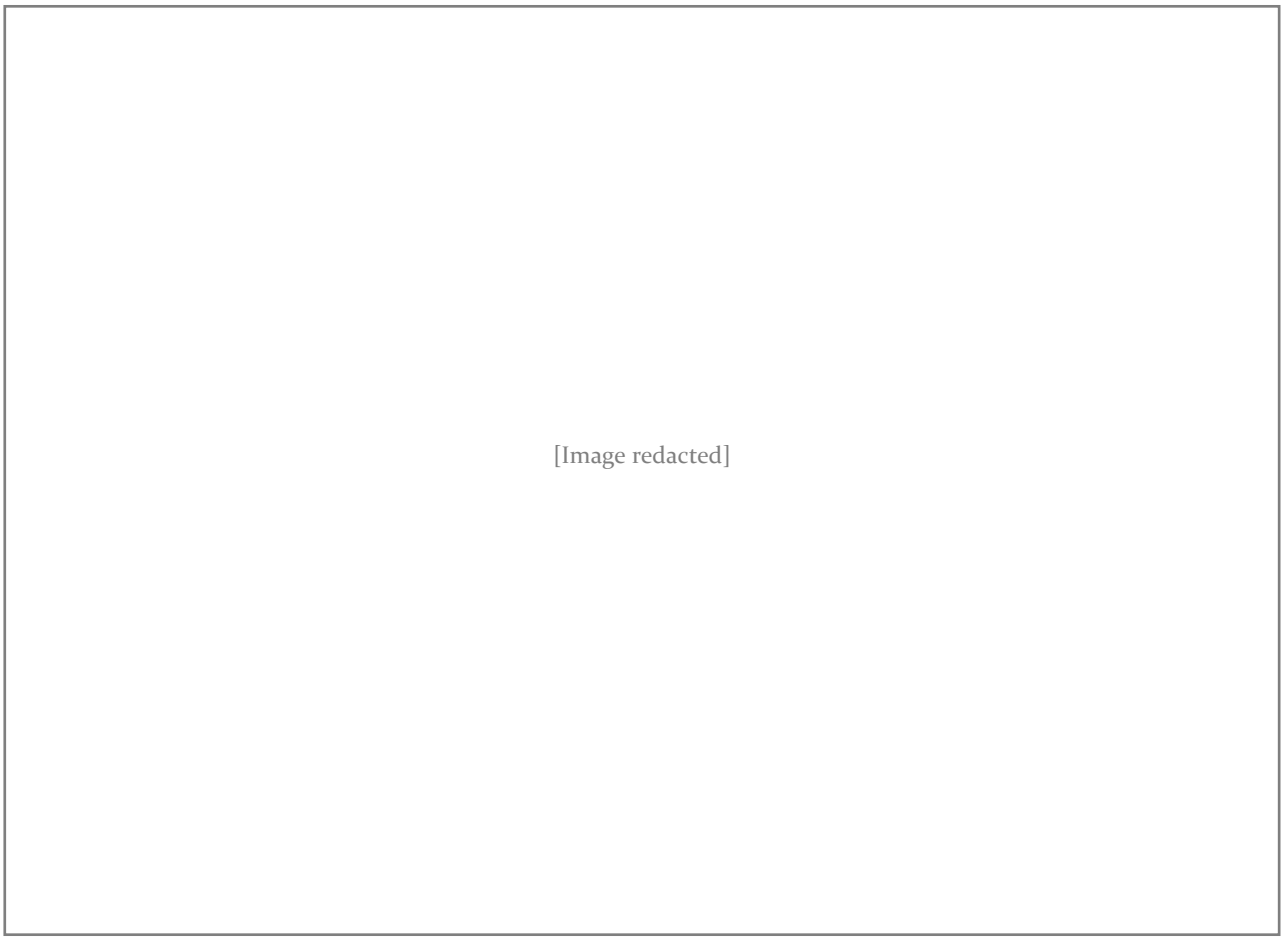
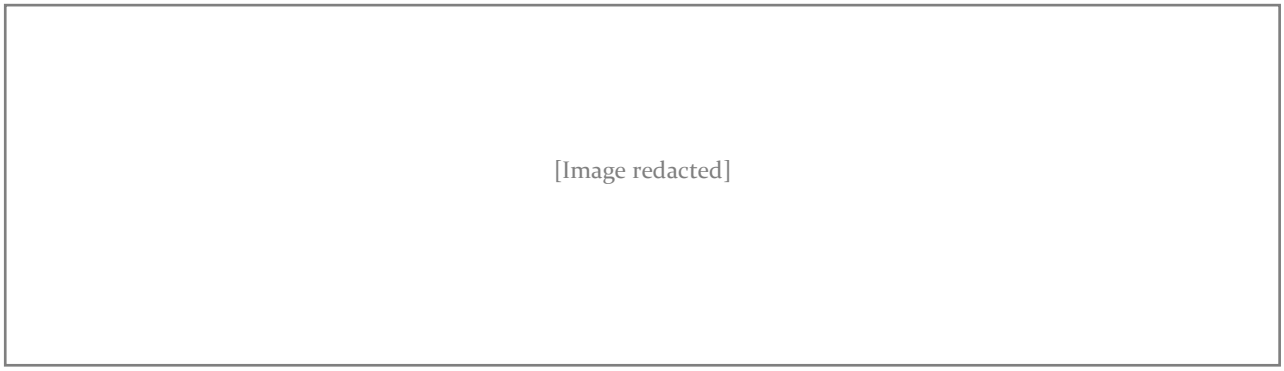
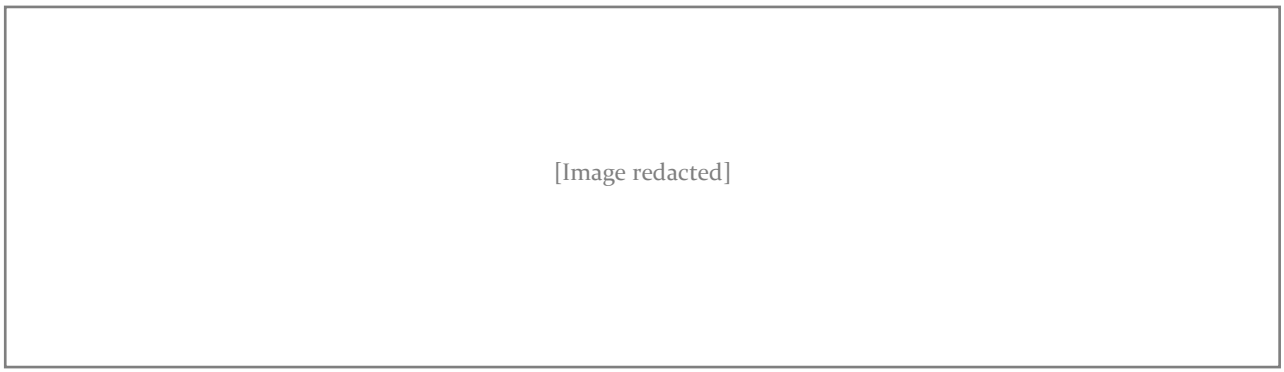


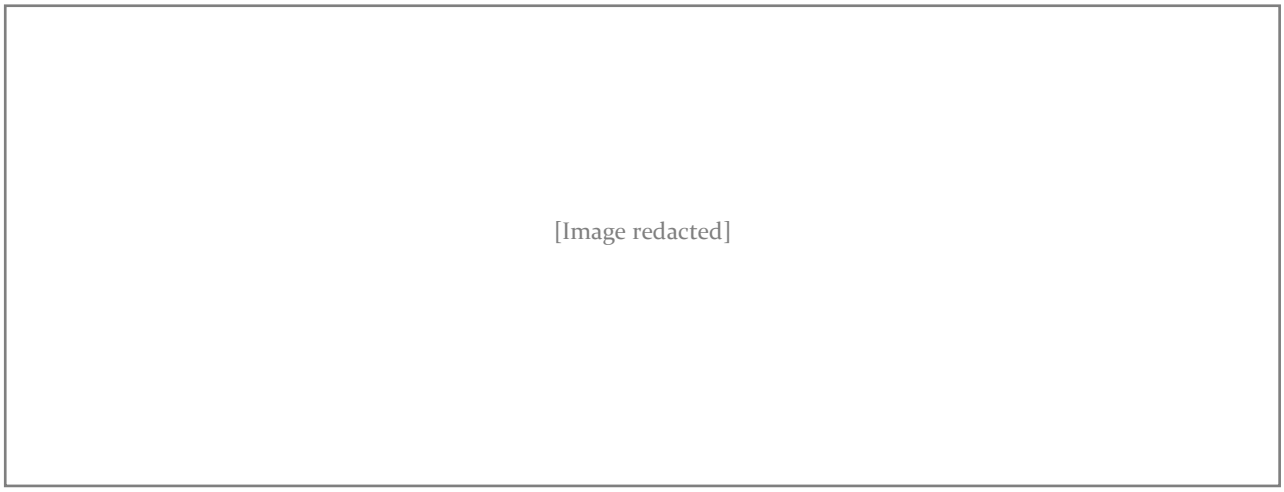
Figure 5.11. *A site plan of Grove Villa Cohousing.*

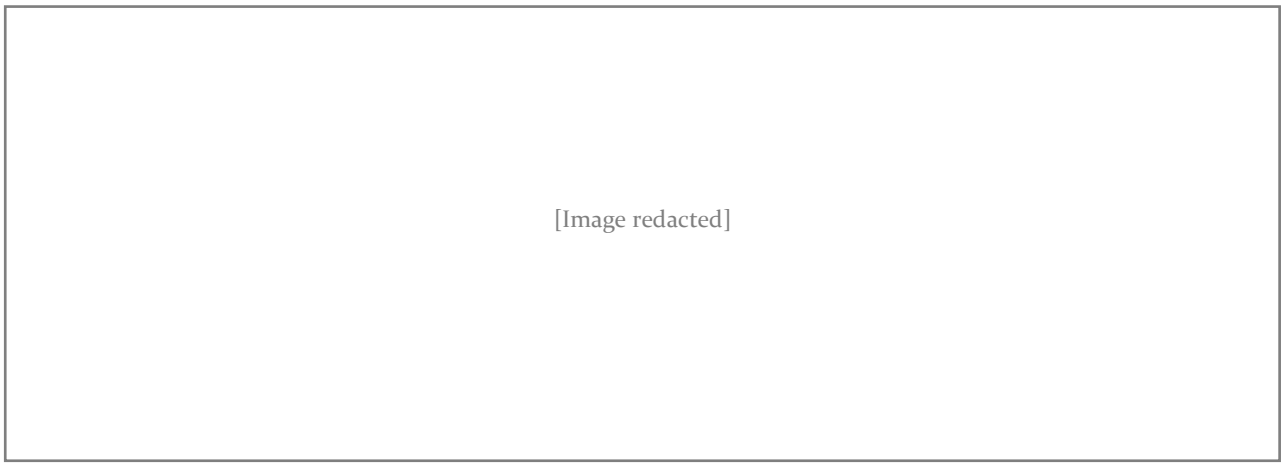
A medium, recently established cohousing development located in a residential suburb, consisting of a renovated building with common spaces and flats. Several new builds are currently planned for construction. The site layout is less typical of cohousing with a centrally located main building and one separate house facing outwards towards the surrounding historical grounds, as illustrated in figure 5.11. The tree-lined driveway leads to the front of the main house and runs through the site. Large mature trees across the site create a small woodland at the back of the house (fig. 5.12) and a sheltered main central lawn garden to the front, where the chickens are kept (fig 5.13). The car park is located next to the house and is also used as a common room kitchen spill out and temporary storage. There is a small courtyard to one side of the house, which several houses face on to and is used for wood storage. Finally, a makeshift kitchen garden and shed are located at the edge of the site (figs. 5.14 & 5.15). The standalone house has a small decking area, and the rest have a balcony or roof garden. Most residences have no front garden or transition space.

Data: 3 site visits; 2 phone interviews; 1 video diary tour; 1 practitioner interview; site photos & documents.









Figures 5.12. *A broken slide is repurposed for play in the woodland area.*
Figures 5.13. *The chicken coop.*
Figures 5.14. *The kitchen garden area with reused secondhand greenhouses and furniture.*
Figures 5.15. *Raised beds for food growing made from repurposed materials.*

CASE 4: Cobble Yard Cohousing

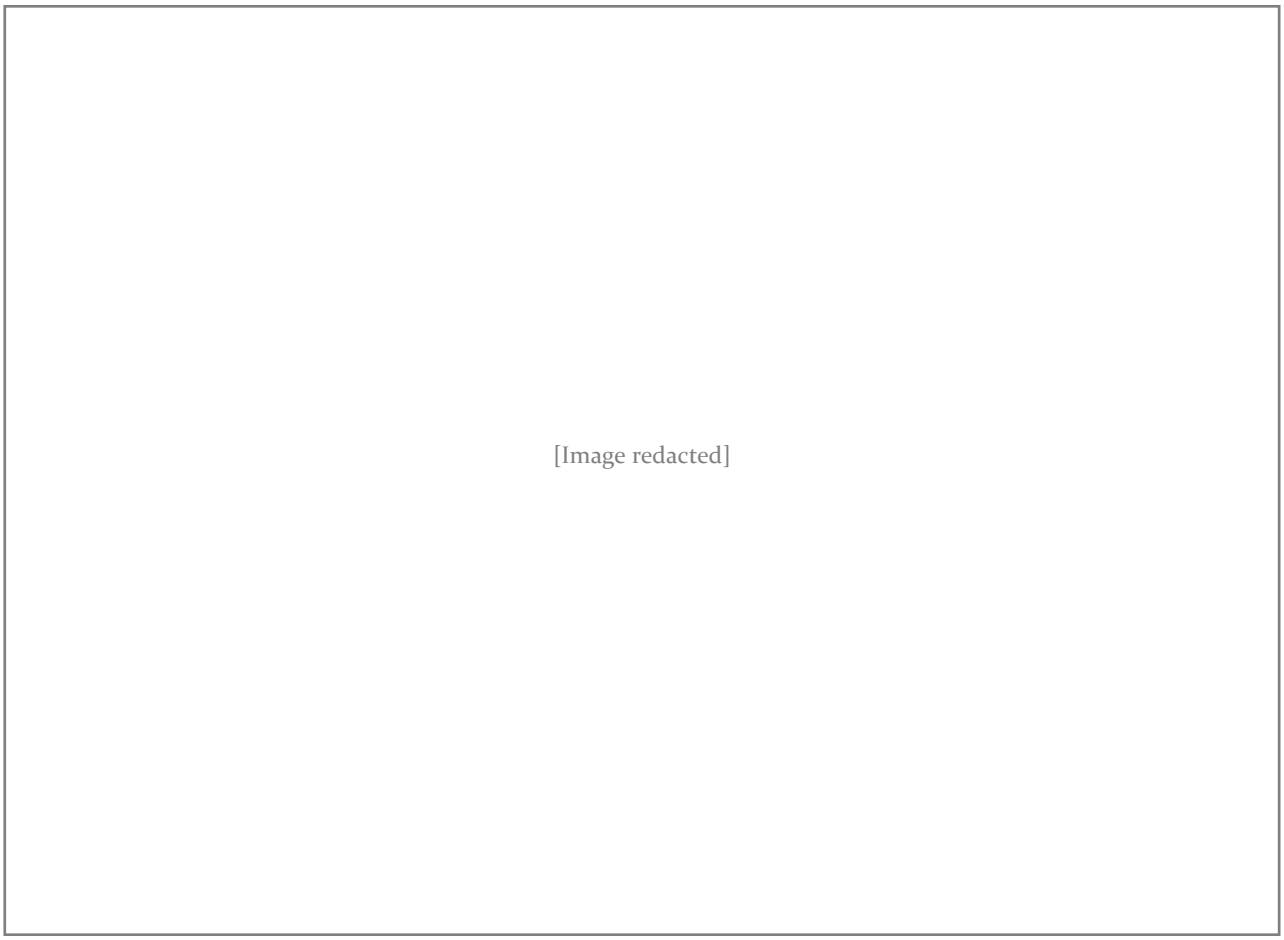
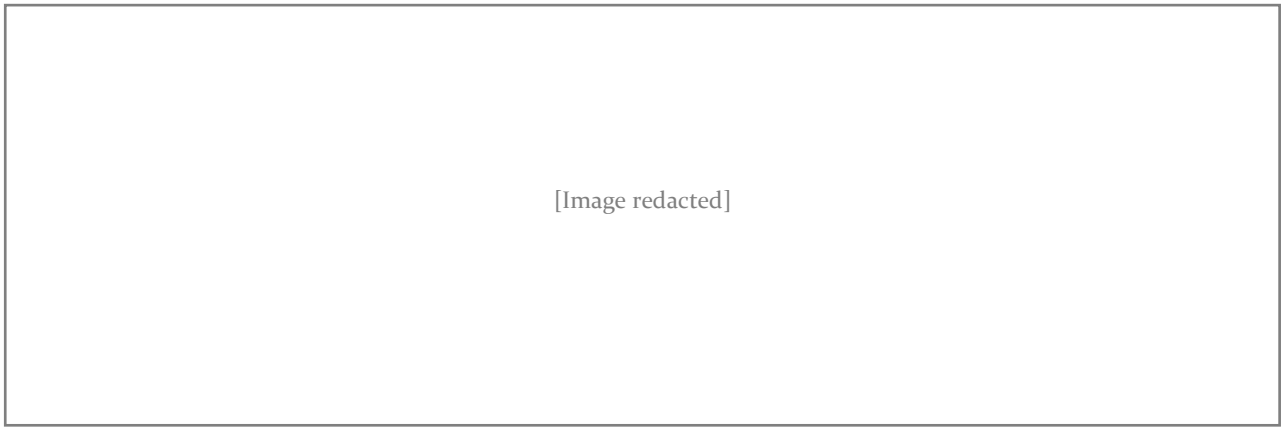
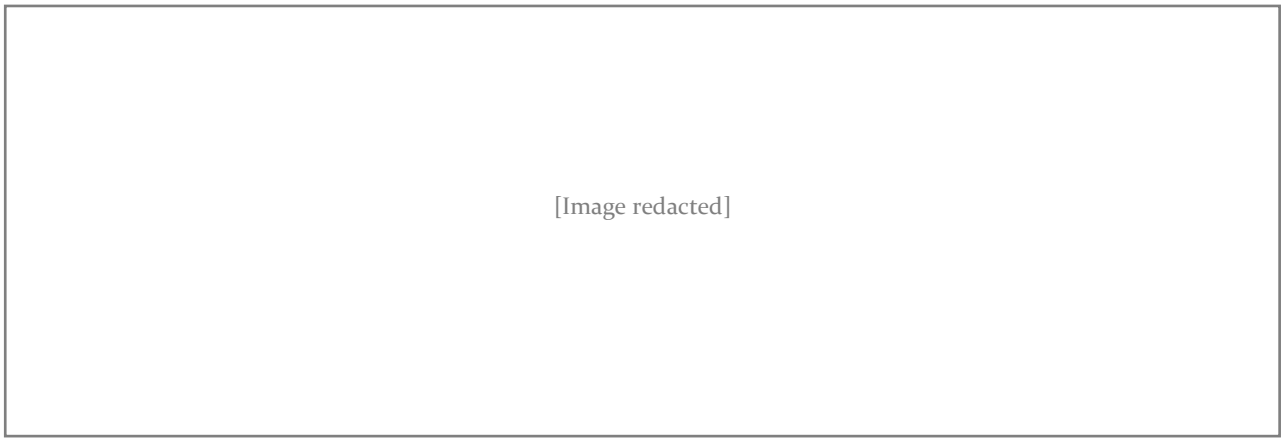


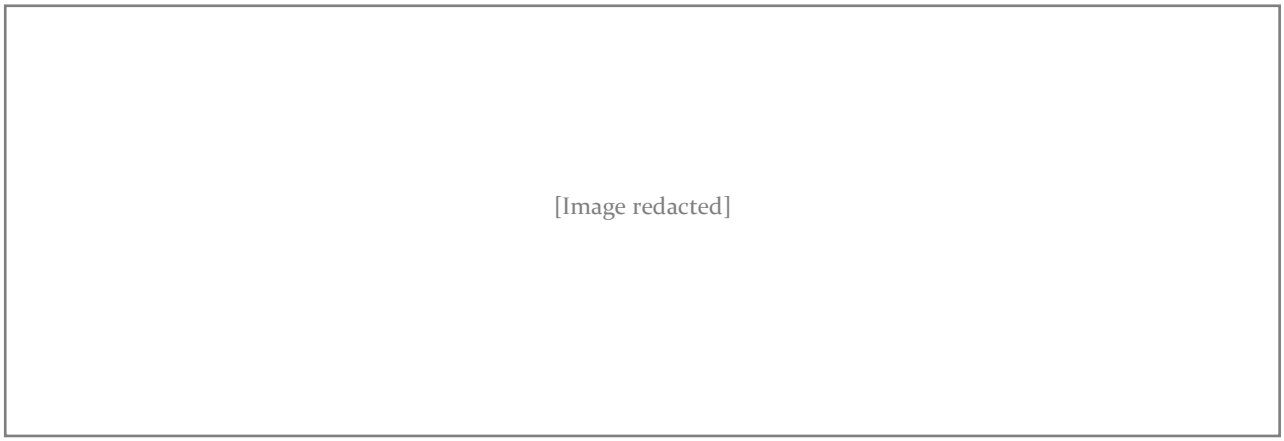
Figure 5.16. *A site plan of Cobble Yard Cohousing.*

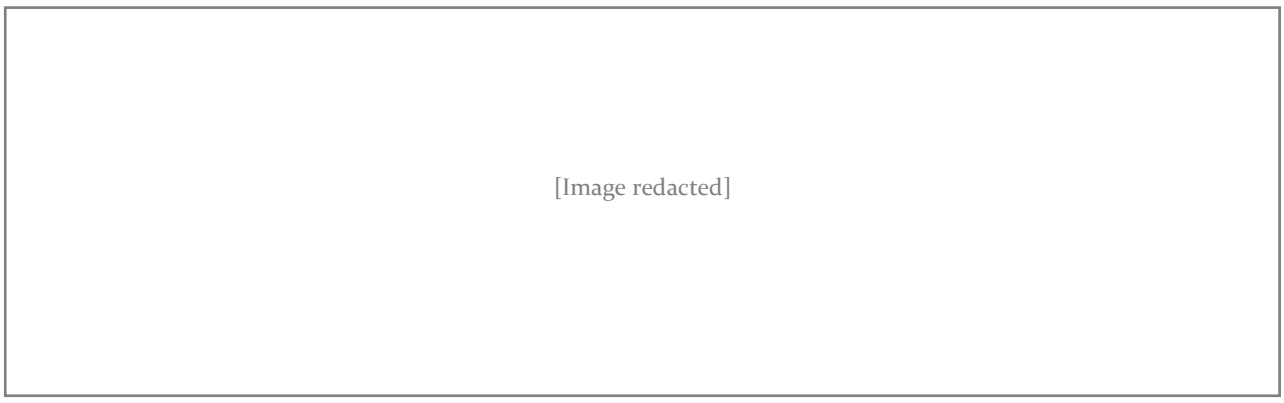
Cobble Yard Cohousing is a small cohousing development located at a rural-urban edge of a city. The development is still under construction, with three households currently living on site. It consists of a cluster of renovated farm buildings, now being developed into homes and a common house, clustered around a central courtyard, with several outlying buildings as illustrated in figure 5.16. The site includes periphery car parking, two courtyards (fig. 5.17), an orchard (fig. 5.18), lawn, growing space (fig. 5.19) and a playing field. The courtyards remain under construction while the buildings are completed and have a historical trough and stone walls at the centre (fig. 5.20), with shared communal storage buildings on two sides. Residents have few rules and formal working days as they are a small group, with one or two residents taking ownership of the growing area. [Redacted]

Data: 2 site visits; 1 walking tour interview; site photos & documents.









Figures 5.17. *A historical trough and stone wall at the centre of the main courtyard.*
Figures 5.18. *Plant pots are placed to personalise the spaces outside residents' homes.*
Figures 5.19. *An orchard lawn acts as a place for communal activities and children's play.*
Figures 5.20. *The growing space and polytunnel overlooking the adjacent field.*

5.2 The Patterns

The grounded pattern methodology, outlined in Chapter 3, identified 72 patterns of urban commoning in cohousing landscapes presented in table 5.1.

ESTABLISHING A VISION
1. Shared intentions
2. An evolving vision
3. Value in diversity
4. Self-selecting group
5. A 'steady core'
6. A manifesto
7. Policies & agreements
8. Picture in many ways

MAKING DECISIONS
9. Signposting
10. Open channels
11. Whole group consensus
12. Smaller working groups
13. Having a say
14. Communication training
15. Decision logging

CREATING RESOURCES
16. A learning project
17. Pooling resources
18. Communal workdays
19. Individual knowhow
20. Solo enterprise
21. Self-build in stages
22. Quick fixes
23. Trial-runs & mock-ups
24. Reuse & repurpose
25. Rewilding the garden
26. An allocated budget
27. A cottage industry
28. Growing produce
29. Composting

USING SPACES
30. The unwritten rules
31. Creative play
32. Celebrations & traditions
33. A shared meal
34. Connecting to nature
35. Being alone
36. Personalise

WORKING WITH OTHERS
37. Networks & hubs
38. Online platforms
39. Learning from peers
40. Family & friends
41. Good neighbours
42. Point of contact
43. Hiring out
44. Resident – experts
45. Open days
46. Neighbourhood events
47. Hosting
48. Taking part in research

DESIGN OF SPACES
49. Living in the city
50. Housing cluster
51. Restricting cars
52. Central green
53. Central utilities & storage
54. Shared landmarks
55. Commonhouse spill out
56. Open gateways
57. Public access
58. Small private plot
59. Permeable buffers
60. Leftover space
61. Wilderness
62. Pocket retreat
63. Dedicated play area
64. Moveable furniture
65. The noticeboard
66. Signs, instructions & labels

FOR PRACTITIONERS
67. Get to know the group
68. Expanded scope
69. Technical advisor
70. Group facilitator
71. Go-between
72. Design for adaption

Table 5.1. *72 patterns of urban commoning in cohousing landscapes grouped into seven categories.*

Each pattern is presented visually as actionable urban commoning solutions in a pattern card format across the following spreads (figure 5.21).

ESTABLISHING A VISION

1. Shared intentions

The common ground where residents' differing goals and values overlap.

Members' interest in shared living are driven by a range of motivations such as affordability, companionship, or sustainable building. Differences in motivation can result in contrasting visions for the site and difficulty making group decisions. Identifying the overlapping intentions that members have in common can help clarify the ambitions of the group, create a clear vision[2] for the site, and guide group decisions[8]. This can be achieved through visioning workshops, and clarified in a manifesto[6].

1 see also 2 6 8

ESTABLISHING A VISION

2. An evolving vision

A shared vision that evolves to reflect the changing views and members of the group.

Over time residents may leave or join the community, family structures change, members are born and grow older. The shared views, values and interests of the community[1] also evolve to reflect these changes. Residents need opportunities to suggest adaptions to the vision that reflect a change in views and avoid a feeling that 'things are set in stone'. An evolving vision can be achieved by holding repeated 'visioning days', 'annual away days', regular policy reviews[7], open channels of communication[10] and by enabling individual proposals[13].

2 see also 1 7 10 13 60

ESTABLISHING A VISION

3. Value in diversity

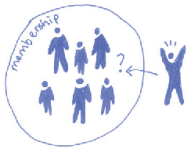
The benefits of having residents with a range of backgrounds, demographics, knowledge and skills.

New members self-select[4] to be part of the group based on their similar intentions to the group[1] and personal circumstances. Residents express the value of having a range of ages and skills[19] in cohousing communities. However, the affordability of new cohousing or membership criteria could limit the diversity of people able to or interested in joining. Consider how to reduce barriers to becoming a member to enable a diverse range of residents, such as making it affordable[6,7] and providing a range of housing[50].

3 see also 1 4 6 7 19 50

ESTABLISHING A VISION

4. Self-selecting group



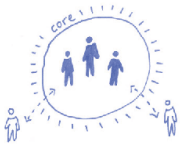
Group of members who choose to join based on similar intentions and other members' approval.

Potential new members choose to join cohousing based on their relationships with existing members, an interest in shared living, sharing similar intentions[1], and their current financial or other personal circumstances. Before new members join they may be required to attend open days[46], communal workdays[18], or shared meals[31] to get to know existing members, group policies[7] and ethos[1]. Within the group, rather than be assigned for roles and tasks, residents volunteer themselves to suit their skills, abilities and interests[19]. Unpopular jobs can be allocated on a rota or tackled on workdays[18].

4 see also 1 7 18 19 31 46

ESTABLISHING A VISION

5. A steady core



A stable group of long-term residents to maintain high levels of trust and strong relations.

Although some residents may join and leave[4], or provision made for short-term tenures, a small stable group of long-term residents form during the initial design and development of the site. This builds strong relationships, trust, clear intentions[1] and decision-making[11]. Some groups achieve this by forming from an existing group of friends or family, forming around a clear intention[6], keeping the group small at the early stages of development before opening up to new members.

5 see also 1 4 6 11

ESTABLISHING A VISION

6. A manifesto

A written or visual statement formally summarising the groups shared intentions.

The vision for the site[2] and decision-making[11] is guided by the community's shared intentions[1]. Unless they are written down, the shared intentions of the group can be abstract and ambiguous, leaving room for misinterpretation or divergence. Manifesting the shared intention into a physical or digital written statement or image[8] makes it visible to group members and others outside the group. Formal statements such as agreed codes of ethics, community policies[7], vision statements or shared landmarks[54], act as a reminder to solidify shared intentions and visions.

6 see also 1 2 7 8 11 54

ESTABLISHING A VISION

7. Policies & agreements

Documented agreements for the governance and use of outdoor spaces.

Some aspects of living together, like allowing pets, car ownership, and expenses[26], can be contentious. Formal policies document agreements on important issues made during group discussions[11]. Policies and agreements document[15] communicate the expectations and ethos of the group[1,6] to new and existing residents or visitor[47]. Policies can be reviewed regularly through open communication channels[10] and proposals from residents[13] so that they reflect the evolving vision[2] of the group. Using of signs, instructions and labels[66] may be needed to remind residents of agreed processes.

7 see also 2 6 10 11 13 15 26 47 66

ESTABLISHING A VISION

8. Picture in many ways

Visualising ideas in different ways to make sure everyone is on the same page.

Communicating design proposals[13] and spatial ideas can be challenging and it is difficult to confirm everyone is imagining the same thing. Misunderstandings can cause disagreements when the built idea is different than expected. Using a range of ways to visualise design ideas, such as photos, 3D models, layout plans, and sketches, allow people to understand the idea in different ways and from different perspectives. 1-to-1 massing and testing of ideas[23] on the site are particularly useful for immediate feedback and fine-tuning an idea.

8 see also 13 19 23 69 70

MAKING DECISIONS

9. Signposting

A clear system outlining the nature of decisions, how they are made and who it involves.

Group decisions, from the detailed and routine to major and strategic, can be energy-intensive, yet, decisions made without consultation[20] can create conflict and exclusion. Guide residents towards the most appropriate decision making process to avoid getting bogged down in detail or taking unconsulted actions. Permanency, cost, controversy, impact and urgency inform whether the whole group[11], smaller working group[12] or individual[13] make a decision. Flowcharts or policies[7] signpost to how decisions are made; open channels[10] and decision logging[15] to make everyone aware of decisions.

9 see also 7 10 11 12 13 15 20

Figure 5.21. Visual summary of all 72 patterns as a pack of cards.

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5.3 The language

This section explores the different relations between patterns to form the grammatical syntax that transforms the collection of patterns into a language. Explorative mapping is used to identify the different ways patterns are related to each other. This is undertaken firstly by mapping the patterns according to their replication across cases, the type of data captured, and the network of relationships captured to help evaluate the methodology and validate the research findings. Secondly, patterns are mapped by their potential application in steering a typical spatial layout, making connections between stakeholders and resolving key tensions in cohousing. The final map identifies five opposing tension concepts that form the basis for further discussion and theory building in Chapters 6 & 7.

Pattern replication across cases

Figure 5.22 illustrates each pattern by the number of cases it was observed being applied as a solution to getting residents involved in shared outdoor spaces. 40 patterns were identified as operating within all four cases; 24 patterns within three cases; 7 patterns within two cases; and just 1 pattern (57. Public access) in only one case. When findings are replicated across cases, external validity is increased (see Chapter 3.6), and therefore patterns occurring within three or more cases are deemed to have a higher level of external validation. As such, 64 of the patterns are likely to apply to similar cohousing developments in the UK.

Patterns occurring within two cases or less reflect solutions that respond more closely to the specific context characteristics of those cases. For example, the patterns '35. Being alone' and '62. Pocket retreat' occurred in cases with larger numbers of residents, where residents had less access to small private spaces or where data was collected during the pandemic when residents had a greater need for personal space. The pattern '57. Public access' occurred within one case only and, therefore, did not initially meet the replication criteria to be considered a pattern. However, '57. Public access' was considered potentially significant as a solution for dealing with the integration of the site within the wider neighbourhood. Similar public through-routes were observed in earlier site visits in cases that occupied land areas between two public spaces or streets but weren't included in the research due to the pandemic. Therefore '57. Public access' was formed as a pattern for its potential applicability to cohousing developments that share this spatial characteristic that affords public cut-throughs for surrounding residents.

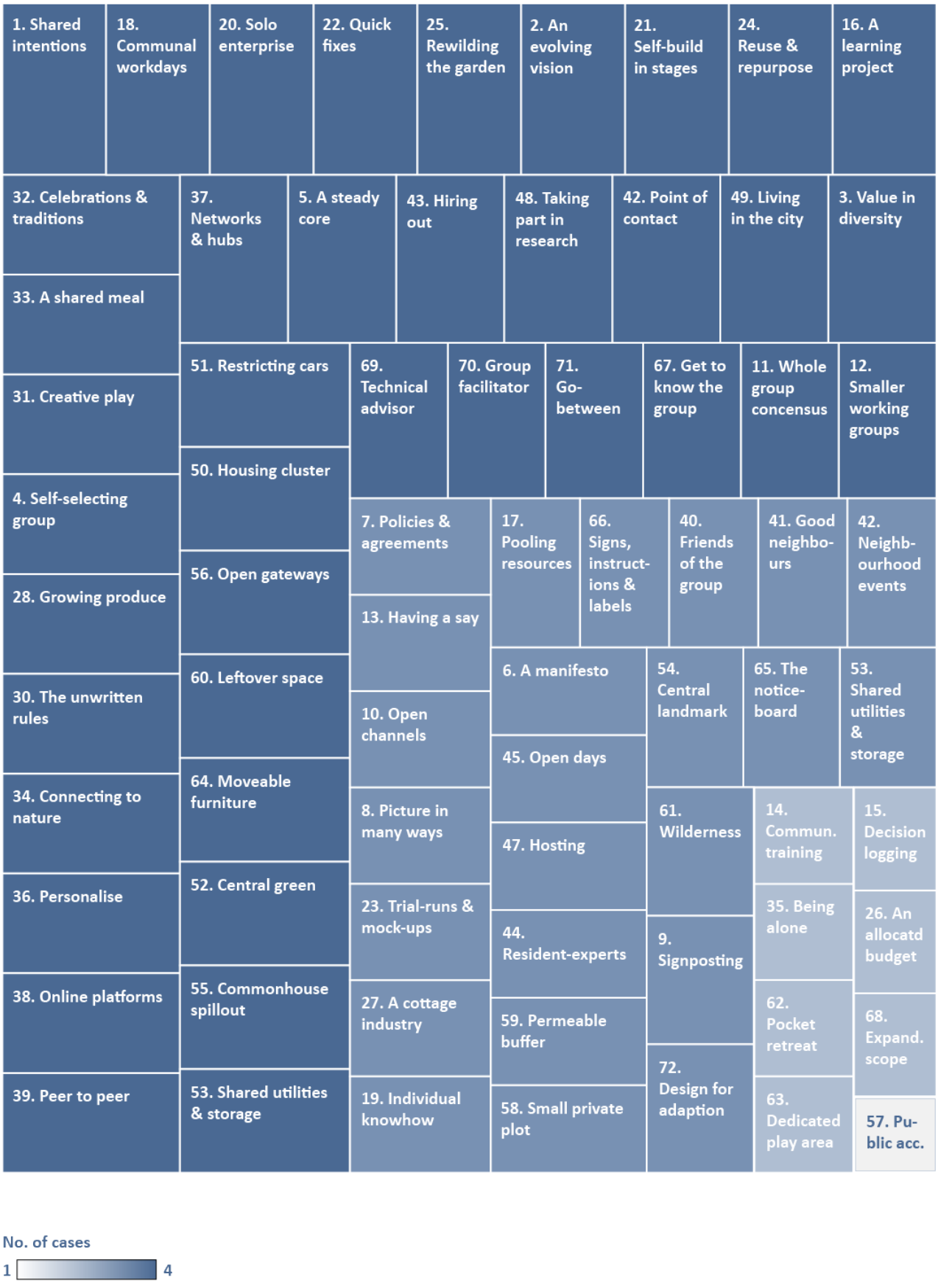
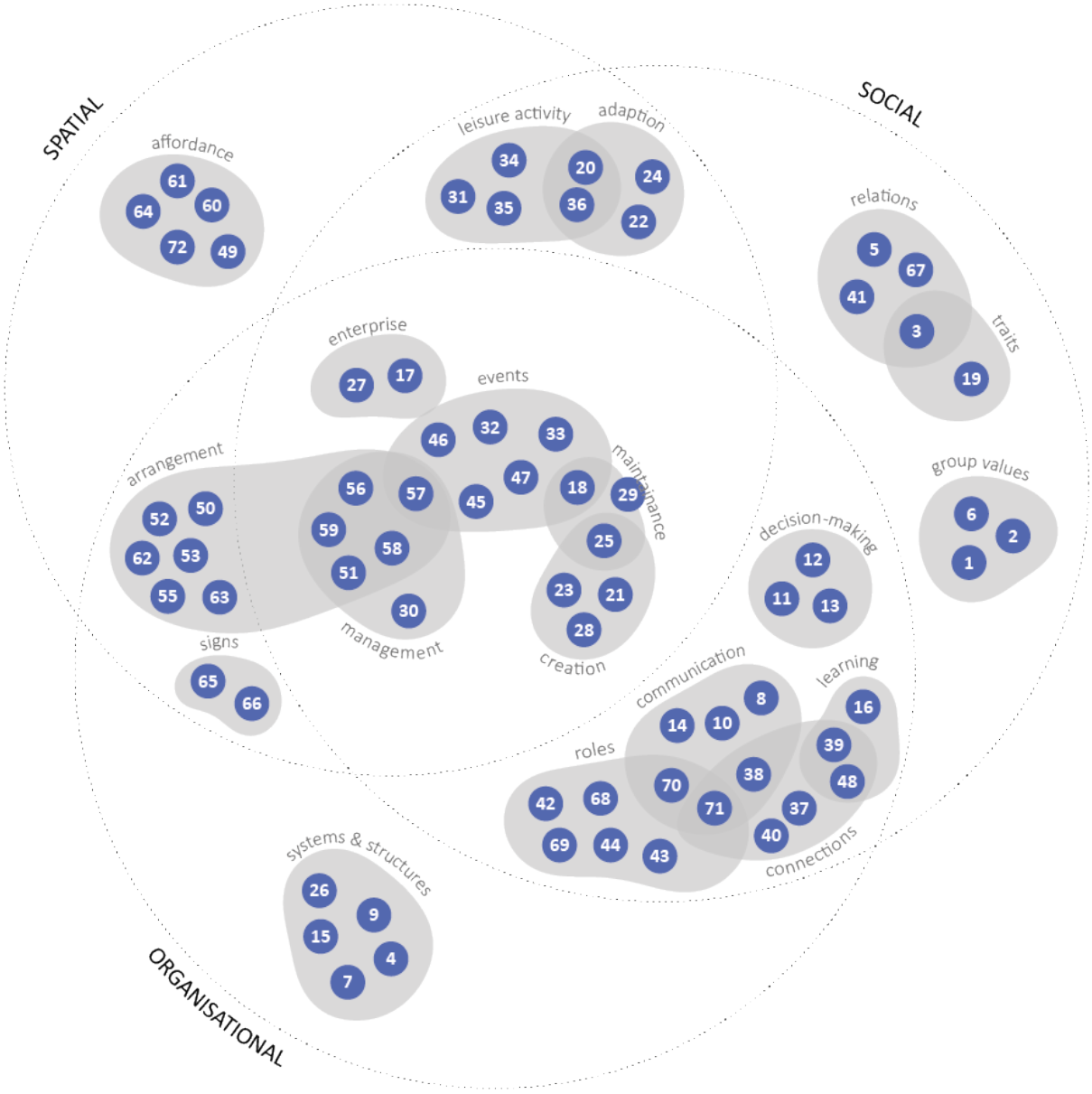


Figure 5.22. *Patterns are mapped by the number of cases in which they occur. The darker blue rectangles represent patterns within all four cases, and the lightest occur only in one case.*



1. Shared intentions
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6. A manifesto
7. Policies & agreements
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10. Open channels
11. Whole group consensus
12. Smaller working groups
13. Having a say
14. Commun. training
15. Decision logging
16. A learning project
17. Pooling resources
18. Communal workdays
19. Individual knowhow
20. Solo enterprise
21. Self-build in stages
22. Quick fixes
23. Trial-runs & mock-up
24. Reuse & repurpose
25. Rewilding the garden
26. An allocated budget
27. A cottage industry
28. Growing produce
29. Composting
30. The unwritten rules
31. Creative play
32. Celebrations & trads.
33. A shared meal
34. Connecting to nature
35. Being alone
36. Personalise
37. Networks & hubs
38. Online platforms
39. Peer to peer
40. Friends of the group
41. Good neighbours
42. Point of contact
43. Hiring out
44. Resident-experts
45. Open days
46. Neighbourhood events
47. Hosting
48. Taking part in research
49. Living in the city
50. Housing cluster
51. Restricting cars
52. Central green
53. Shared utilities & stor.
54. Central landmarks
55. Commonhouse spill out
56. Open gateways
57. Public access
58. Small private plot
59. Permeable buffers
60. Leftover space
61. Wilderness
62. Pocket retreat
63. Dedicated play area
64. Moveable furniture
65. The noticeboard
66. Signs, instructions & lb.
67. Get to know the group
68. Expanded scope
69. Technical advisor
70. Group facilitator
71. Go-between
72. Design for adaption

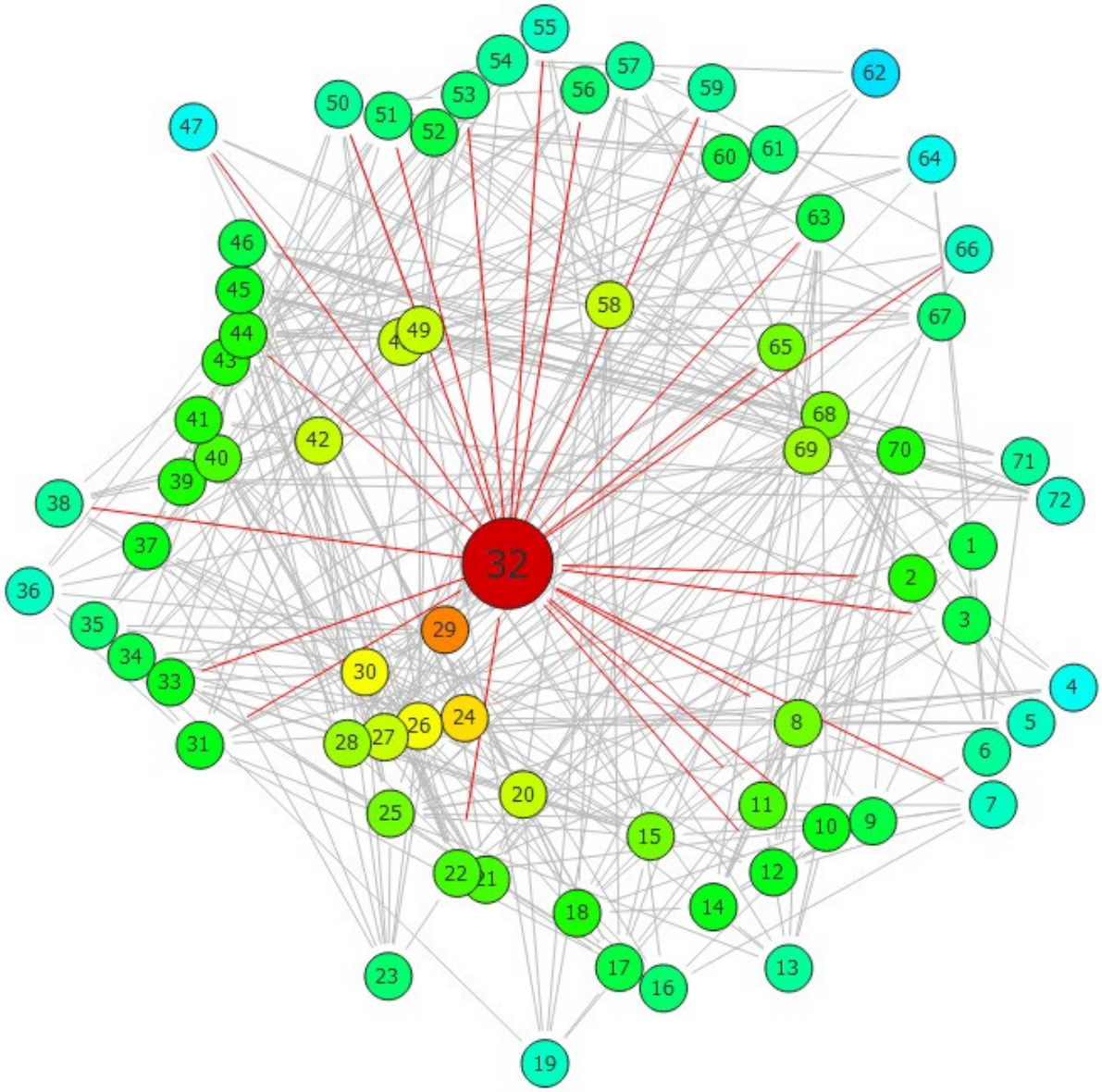
Figure 5.23. *A Venn diagram of social, spatial and organisational qualities of the patterns.*

Type of findings and complexity

Evaluating the type of data captured within the patterns can help confirm the research design's operationalisation (see Chapter 3.6). Each pattern summary was read to identify any social, spatial or organisational aspects of urban commoning related within it and mapped onto a respective Venn diagram. Figure 5.23 illustrates the wide range of findings produced from the research methodology covering a complex breadth of interrelated spatial, social and organisational aspects of urban commoning in cohousing landscapes. The patterns captured single aspects of urban commoning, such as the spatial findings in '49. Living in the city' and '50. Housing cluster', the social findings in '1. Shared intentions' and '19. Individual knowhow', and organisational findings in '9. Signposting', and '7. Policies & agreements'. Further to this, the patterns can capture the relations and overlap between social, spatial and organisational aspects of urban commoning. For example, pattern '51. Restricting cars' describes a multi-stranded approach to minimising car traffic on the site by spatially locating car parking towards the edge of the area, establishing social norms for reducing car use, and organising policies and membership agreements on car-sharing and ownership. Similarly, pattern '25. Rewilding the garden' considers the garden as a space, the social notion and activity of 'rewilding', and organising how rewilding is managed and rules for using that space. Overall, the patterns capture a broad range of findings relating to group roles, decision-making, learning and communication; activities and the adaption of space; spatial arrangements and signs; events, placemaking and enterprise. This demonstrates how patterns can capture the multifaceted nature of urban commons as assemblages.

Pattern relations and centrality

The findings produced in this research are captured within each pattern and in the relationships between the patterns. These relationships were identified firstly through the thick descriptions in the case study reports and documented under each pattern description. Associations between patterns exist where one pattern is combined with others to create or support another pattern, or alternative patterns exist that can solve similar problems. For example, residents in Grove Villa cohousing had little access to a small private plot [58] or dedicated play space [63] and expressed a need to be alone [35] in the shared garden and suggested a quiet space [62] could be located close to the woodland area [61] to connect to nature [34], where others would know not to disturb them [30]. Therefore, pattern '62. A pocket retreat' shares a relationship with other patterns that contribute to its making [30, 34, 61]; describe activities that happen within it [38, 35], or are alternative or complementary approaches [38, 35]. The connections between patterns were initially documented on each pattern card to facilitate the selection and implementation of patterns for users of the card game. When visualised using a method similar to social network analysis (figure 5.24), it demonstrates the complex interconnected structure of the pattern language as a whole.



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72. Design for adaption

Figure 5.24. *A network analysis of the relations between patterns demonstrates the highly interconnected nature of a pattern language and the centrality of key higher-level patterns.*

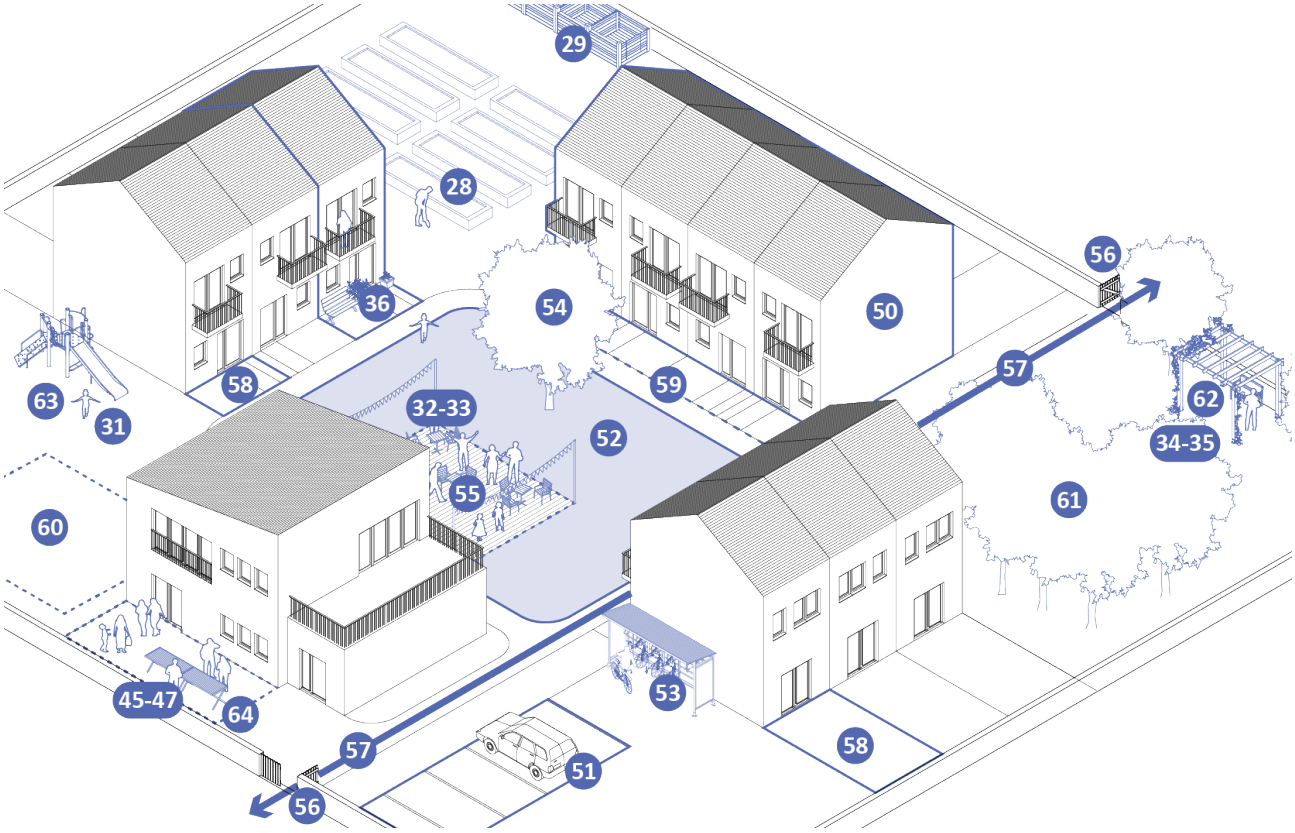
This structure resembles a network, suggesting pattern language methodologies can capture the interrelated characteristics of urban assemblages. The network analysis illustrates the 'degree of centrality'—the number of connections a pattern has to others—by the pattern number's proximity to the centre of the diagram and the node's colour. Patterns that are highly connected to others are more centrally positioned in the diagram and have warmer coloured nodes; patterns that are less connected to others are positioned towards the outside of the diagram and have cooler coloured nodes. The diagram reveals patterns with a high degree of centrality—'32. Celebrations & traditions', '29. Composting', '24. Reuse & recycle', '26. An allocated budget', and '30. The unwritten rules'—and a low degree of centrality—'62. Pocket retreat', '64. Moveable furniture', '4. Self-selecting group', and '47. Hosting'. The degree of centrality does not indicate the importance of one pattern over another but that certain core or high-level patterns are useful in unlocking, understanding or applying other patterns.

Navigating patterns by stakeholders, layout and tensions

Figure 5.25 illustrates how the spatially oriented patterns could manifest in physical form as a 'typical' cohousing development. This illustration is a potentially useful way for users of the pattern language to visually navigate some of the patterns by illustrating the solutions as physical examples rather than an abstract phrase. This diagram shows just one possible way the patterns could come together to create a cohousing development and doesn't demonstrate all the potential ways residents could interpret and adapt these patterns to suit their site and circumstances. For example, the pattern '62. Pocket retreat'— *small niches towards the edges of the site that, when occupied, signal the person wants to be alone*— is shown in this illustration as a bench under a pergola in a quiet corner of the site. However, this has been variously demonstrated in the cases studied as a bench surrounded by shrubs, small patio space or a fenced-off kitchen garden. Therefore, caution should be taken not to interpret this diagram as the right or only way the patterns could spatially manifest.

Chapter 2.5 outlines a conceptual framework for cohousing landscapes as urban commons to demonstrate how cohousing communities negotiate the relations between other members and stakeholders across multiple scales to collectively govern the shared landscapes. Mapping the patterns within this framework (figure 5.26) illustrates how they can mediate the relations between the individual, community, and external contacts. Patterns such as '13. Having a say' and '20. Individual enterprise' focus on ensuring residents have the opportunity to express their opinion and retain some level of personal control over the shared spaces. '35. Being alone', '62. Pocket retreat' and '58. Small private plot' attempt to balance the predominantly shared spaces of cohousing developments with the need for privacy. At the community scale, patterns are oriented towards finding a shared ground between residents to reduce conflict [1, 2, 5, 6], facilitating decision-making [9, 11-14], working together

in creating, maintaining [15, 17-22, 24 26] and using shared spaces [27, 28-34] and spaces that afford cohesion [50-52, 57-66]. The remaining patterns deal with the relations between the group and external actors, including the use of networks [37-40], adaptive access for the public [42-44, 48, 53, 56] and collaborating with design practitioners [14, 46, 67-72].



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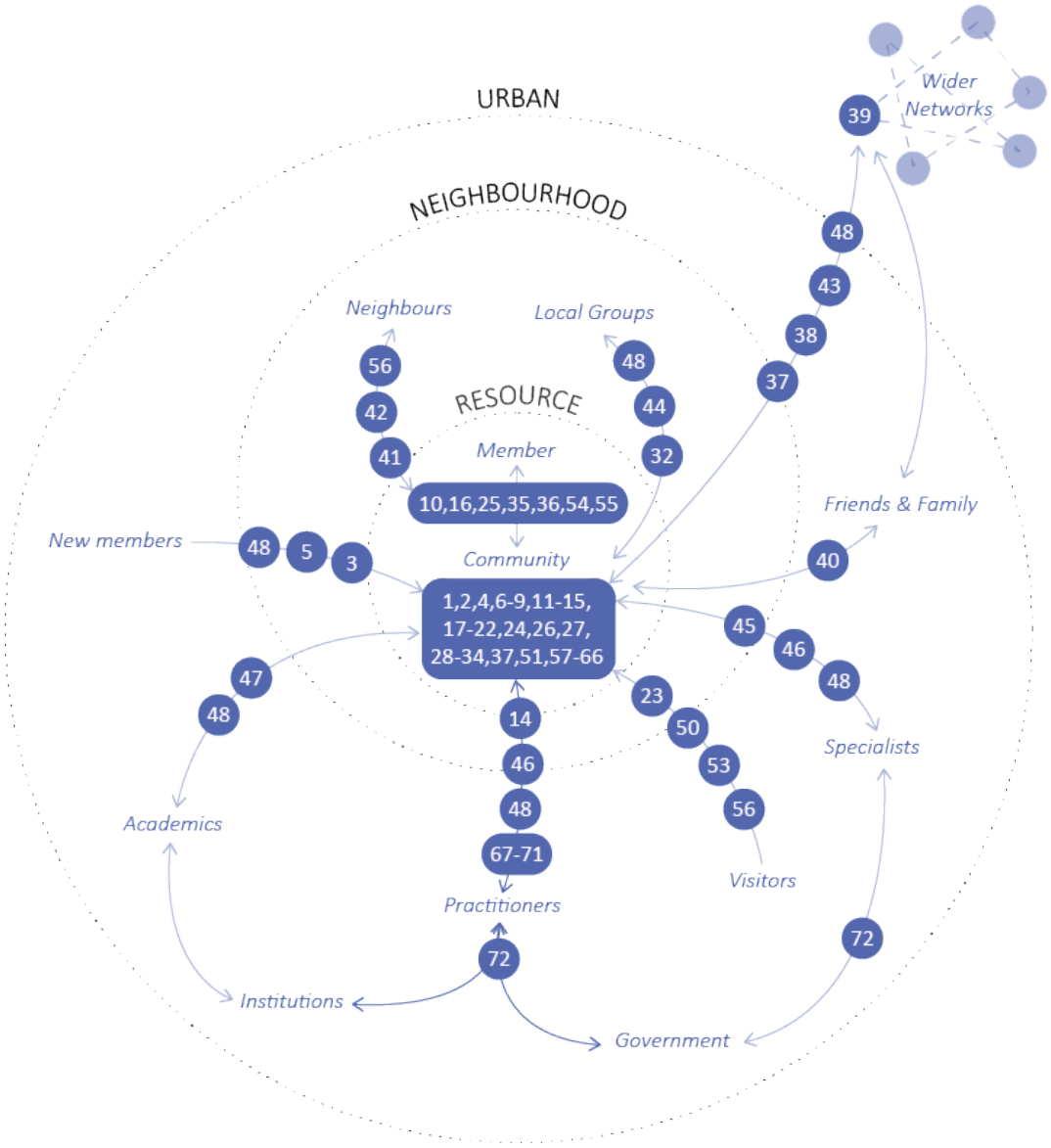
65. The noticeboard
66. Signs, instructions & lb.
67. Get to know the group
68. Expanded scope
69. Technical advisor
70. Group facilitator
71. Go-between
72. Design for adaption

Figure 5.25. *The spatial patterns mapped onto an axonometric diagram of a typical cohousing development.*



1. *Shared intentions*
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4. *Self-selecting group*
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7. *Policies & agreements*
8. *Picture in many ways*
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15. *Decision logging*
16. *A learning project*
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19. *Individual knowhow*
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24. *Reuse & repurpose*
25. *Rewilding the garden*
26. *An allocated budget*
27. *A cottage industry*
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30. *The unwritten rules*
31. *Creative play*
32. *Celebrations & trads.*
33. *A shared meal*
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35. *Being alone*
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37. *Networks & hubs*
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69. *Technical advisor*
70. *Group facilitator*
71. *Go-between*
72. *Design for adaption*

Figure 5.26. *The patterns mapped onto the urban commons' framework derived from the literature review highlight the role patterns play in negotiating the relationships between individual members and the whole group, internally and externally, with a range of stakeholders.*

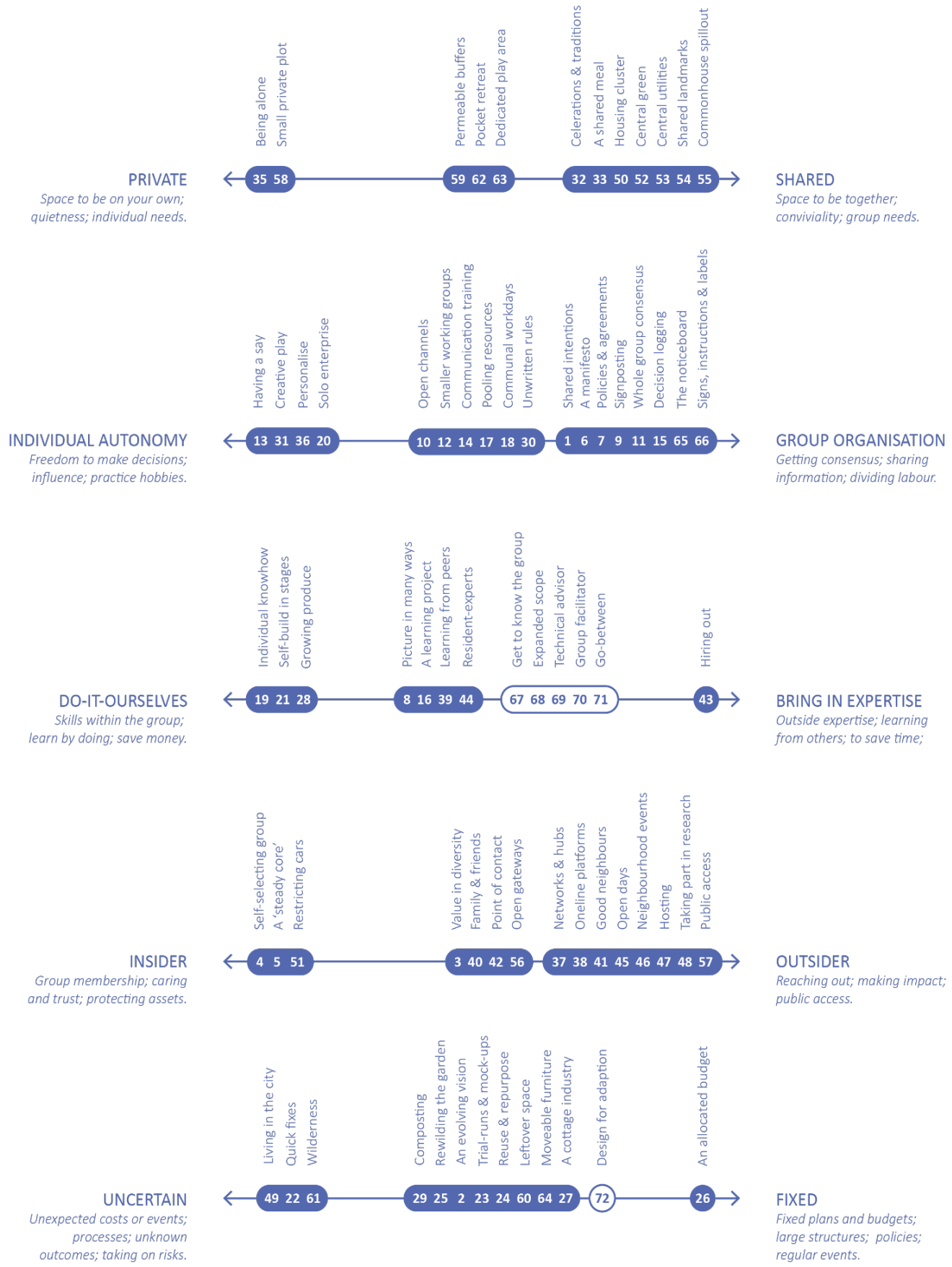


Figure 5.27. *Patterns mapped across emergent spectrums of opposite tensions in cohousing landscapes.*

Mapping the patterns in different ways to explore how to navigate the pattern language revealed how patterns, as solution-orientated ideas, were negotiating various types of tensions. Furthermore, feedback from participating cohousing residents during the later stages of the research suggests that the patterns didn't adequately convey the challenges in participating in the shared outdoor spaces in cohousing. The pattern language format presents problems from a solution-based perspective, and the challenges and complexities involved in making that happen sometimes are concealed within the simplified instructional texts within patterns. This confirmed that the tensions coming to the surface within the case studies and mapping the different relations between patterns was worth further exploration. Figure 5.27 illustrates five of the tensions that emerged from this exploratory mapping process, including private—shared, agency—organisation, DIY—expertise, insider—outsider, and uncertain—fixed. Mapping the patterns along the tensions within cohousing helps to acknowledge the challenges and problems cohousing groups face and make it easier to navigate patterns from a problem-focused starting point. The tensions highlighted here provide a first step towards theory building on residents' involvement in shared landscapes and form a framework for discussing how patterns in resolving these tensions in the following Chapter 6.

These different explorative mappings of the patterns reveal relationships between patterns to illustrate how it operates as a language. It begins to demonstrate how pattern languages can capture the assemblage like qualities of urban places by capturing interconnected social, spatial and organisational aspects of cohousing landscapes as urban commons and the complex relationships between those patterns. Finally the explorative mapping plays a role in identify broader emergent themes from the patterns, that reveal the types of tensions that the patterns are attempting to resolve in cohousing landscapes.

5.4 The Game

Due to the impact of the pandemic on limiting in-person and interactive events, workshops to test the pattern language were undertaken opportunistically to provide some initial insight into the validity, usability and potential impact of the card game. Four events were held in 2021 to get feedback from participants and other relevant stakeholders. These included a Zoom presentation to present the pattern language to the residents [redacted], a problem-solving card game workshop for residents [redacted], an online presentation and workshops for community-led housing stakeholders, and a lecture and scenario building card game workshop for undergraduate landscape architecture students (see Table 5.2). A copy of the card game and an accompanying instruction booklet (Appendix F) were posted to all the other participating groups. This section briefly describes each workshop and its findings as an initial step towards testing and evaluating the pattern language.

Format	Date	Participants	Output(s)
Presentation (zoom)	Feb '21	[Redacted] residents	Verbal feedback on the pattern language
Workshop 1: Problem-solving	Sep '21	[Redacted] residents	Observations and photos of the workshop
Workshop 2: Problem-solving (zoom)	Oct '21	Community-led housing stakeholders	Reflective notes
Workshop 3: Scenario building	Nov '21	Undergraduate landscape students	Feedback forms from students

Table 5.2. *Table showing the different ways and contexts in which the pattern language card game was disseminated and tested.*

Workshop 1: Problem-solving with an established cohousing group

A problem-solving workshop was undertaken as a 1-hour activity with residents [redacted] following a workday. The workshop was designed to help residents identify their shared visions for the shared outdoor spaces, the challenges in achieving those visions and develop solutions to overcome those challenges. Before being shown the pattern language cards, residents were asked to write down ideas and challenges for the shared outdoor spaces on post-it notes and then share them with the rest of the group. These included wishes and challenges around several themes that help to confirm and validate some of the patterns and understand how the card game functions as a collaborative tool between residents. Following this, residents were given the pattern language deck of cards and asked to play a card game, prompting them to develop imaginative responses to the challenges, using the cards in their hands (figure 5.28). Finally, residents were asked to interpret the solution cards they had selected into actionable solutions in small groups.

Figure 5.28. *Photo of a workshop held with [redacted] cohousing to reimagine new solutions to the challenges they faced in their shared outdoor spaces.*

The first visioning exercise highlighted both wishes for and challenges around organising shared labour, space for outdoor events and meals, children's play space, time alone and for relaxation, connecting to nature or beauty, and decision-making conflicts. The key themes arising from the workshop confirmed the problems and drivers underpinning many of the patterns identified in the research, including communal workdays (18), a shared meal (33), celebrations & traditions (32), dedicated play areas (63), being alone (35), connecting to nature (34) and decision logging (15). During the workshop, a resident spoke of recognising several patterns in their own setting, including identifying a prominent tree in the centre of their site as the pattern '54. Central landmarks'. In addition to this, the need for outdoor shelter, possibly prompted by the increased need to hold activities outdoors in all weathers during the pandemic, arose as a new potential pattern that didn't easily fit into any existing patterns. In this way, the workshop confirmed existing and identified new patterns.

In addition to confirming the research, the workshops also highlighted how the pattern language worked as a card game. Residents were initially concerned that it would take too long to read the whole pattern for each card in their hand, so it was suggested that they only read the pattern name and picture for the game's purpose. This proved successful in that residents were able to get the gist of what the patterns meant from this small amount of information, with some residents reading the more detailed description if they were interested in developing the pattern into an idea of the proposal. Further, the game successfully prompted residents to create new ideas for the shared outdoor spaces from their selected patterns. This included building a new covered terrace to host family and friends from the patterns '52. Central Green' and '64. Moveable furniture' and options for reducing car use from pattern '51. Restricting cars'. Other unusual ideas included an *"annual kipper throwing competition"* and a *"giant waterproof blackboard"* prompted by the patterns '32. Celebrations and traditions' and '65. The noticeboard'. Although it is yet to be seen if and how these ideas are agreed upon and implemented in practice, the workshops demonstrated that residents could understand the pattern cards and interpret the patterns to produce specific ideas suited to the group and context.

Workshop 2: An online workshop with a community-led home network

The workshop was undertaken as a short 20-minute activity following an online talk as part of an online community-led homes event. Attendees were put into small breakout groups to discuss their vision, challenges and ideas for their projects after being provided with a selection of cards on Google Jamboard. Hosting a workshop in this way was very challenging for several reasons. Firstly, 20 minutes was not long enough for the groups to introduce themselves and discuss the activity. Secondly, attendees were from different organisations and communities, and therefore it was difficult for them to work together and understand the different contexts each participant was working in. Thirdly, the

technology was prohibitive in allowing residents to interact physically with the cards, with some attendees being unfamiliar or uncomfortable with using google jam board. As such, I could not get adequate feedback from attendees on the workshop. Although it may be possible to translate this workshop online, given more time and working with participants who already knew each other, workshops were generally more successful and interactive if held in person.

Workshop 3: Scenario-building with undergraduate students

The workshop was undertaken as a short 30-minute activity, following a lecture on the research, for students involved in a landscape housing design module. The workshop was designed to help students consider how future residents may get involved with their housing design projects and develop appropriate design solutions in response. As an imaginary housing design project, it can be challenging for students to imagine how the spaces they design will be used and adapted in the future and by who. The random way the cards were dealt to students reflected the unknown aspects of how spaces will be used in the future. Following the workshop, 21 students filled in a feedback form (Appendix F).

Overall, the card game workshop successfully prompted students to develop scenarios for how residents would get involved in their housing design. All 21 students who filled in the feedback form agreed that the card game helped establish a scenario for resident involvement in their housing design project. These included scenarios such as temporary events or other changes over time, community governance and organisation, ways of using residents' skills and knowledge, activities that could occur on-site, the community's values and characteristics, consideration for budgets materials and time, and finally, personalisation of spaces. In particular, the cards prompted students to consider the temporal aspects of resident involvement, including factors occurring before, during, and after constructing their housing design. For example, one student described how the cards had prompted a monthly community event scenario: *"Residents will have [a] monthly event day…where they can participate in different activities such as shared meals where they can get to know each other and future new residents."* This was further reflected in the words and phrases used by students in their feedback comments such as "*instigate", "future", "across the year", "starting point",* and *"evolving*", which suggest consideration for the processual and temporal aspects of housing design. When asked what else they got out of playing the game, students felt that the workshop helped them to consider the role of design practitioners in community-led housing and gain a good understanding of the variety of ways residents could get involved in housing design. Other comments included that the card game format was fun, interesting or interactive and provided an opportunity to learn from other students' ideas.

One of the challenges students found in developing scenarios was feeling restricted by the cards they had been dealt. This was the case if all, or many, of the cards were from the same or similar

categories or if students had been dealt blue 'establishing a vision' cards, as these were harder for students to interpret. This suggested that the way the cards are distributed needs to be considered to work with the game and participants. Further to this, some cards may be more relevant than others to specific types of stakeholders. Ways to avoid this in the future include allowing players to swap irrelevant or hard-to-understand cards or designing the exercise to get more relevant cards.

17 out of 21 students agreed that the card game prompted them to think of new design ideas. These included ideas referring to incorporating wild spaces in a way that would bring social value to the site or more flexible and under-designed spaces to afford greater potential for residents to adapt them in the future. However, it was harder for students to articulate how these ideas would be spatially manifested. For example, one student described their design idea as *"play areas that can be adapted"*, but no detail about the spatial form that would allow adaption to happen. The lack of specificity could be for several reasons. Firstly, how the data was gathered through feedback forms didn't give students the space to elaborate on or draw those ideas. Secondly, several students said that there wasn't enough time in the workshop to develop these ideas in detail. Thirdly, a common suggestion to improve the workshop given by students was to include more specific examples of patterns, scenarios or communities to help students interpret or apply those ideas in their own projects. Although giving more real-life examples of the patterns could be a useful way of supporting players to understand and interpret patterns, I found that many of the design ideas students gave were very similar to the few examples I had given in the preceding lecture. Therefore, further research is required to explore ways of facilitating how patterns can be interpreted and adapted by users of the language, further highlighting the need for design practitioners in a facilitating role.

Resident feedback

Following the workshops or posting the pack of cards, some residents provided feedback on the card game by email. The resident feedback helped reinforce the findings and affirm that the participatory research approach had been beneficial to those involved. This feedback also provided additional ideas for how the card game could be used. For example, a resident suggested using a single card to prompt weekly discussions on the shared outdoor spaces, as the short span of a single game wasn't enough time to work through some of the issues raised. Further, the resident raised the idea that the card game would be useful as a digital resource. Although the previous online workshop had not been entirely successful, there could remain scope for the sharing of cards as a discussion prompt in a digital format. Therefore, further exploration of ways of using the card game and experimentation in the delivered form is required.

5.5 Conclusions

This chapter contributes to the research objectives; 1) to identify patterns of urban commoning in cohousing landscapes and 2) to develop and test a pattern language for urban commoning in cohousing landscapes. Firstly, it outlines the 72 patterns of urban commoning identified in the selected cohousing cases. In addition, the replication, breadth and interconnectivity of the findings are explored through various explorative mapping exercises, helping to justify and validate the grounded pattern research methodology developed in Chapter 3 to capture the complexities of urban commons as assemblages. Initial testing of the pattern language as a card game in a series of workshops also helped validate some of the patterns and explore the potential impact of the pattern language. The workshops support the contribution of the pattern language as a useful tool for workshops with cohousing residents and designers to evaluate existing practices and stimulate new ideas for residents' involvement in shared landscapes. However, the workshops also highlight the need for further testing and refinement of the pattern language card game, discussed further in Chapter 8 conclusions. Finally, the chapter also provides a framework for exploring the 3rd research objective: to contribute to the theory of urban commons. The tensions emerging from the explorative pattern mapping form the basis for discussing the patterns in the context of the various challenges in getting involved in shared outdoor spaces experienced by cohousing residents in the next Chapter.

6 DISCUSSION

The analysis outlined in section 5.3 demonstrates the relationships between the 72 patterns as a language, including explorative mapping of the patterns around the challenges residents experienced in achieving collective involvement in the shared outdoor spaces (figure 5.27). This exercise revealed five significant tensions underlying residents' participation in cohousing landscapes, emerging from the clustering of patterns around the broader tensions they attempted to resolve. This included the tensions of private/shared, agency/structure, DIY/expertise, insider/outsider, and fixed/uncertain. These tensions broadly summarise the conflicts cohousing communities attempt to negotiate through their collective involvement in shared outdoor spaces, forming the basis for this discussion chapter.

The focus on tensions, two opposing concepts, rather than singular themes, is important in this research to understand how patterns resolve or balance conflicting drivers. Identifying patterns captures the unresolved tensions that drive the need for a solution in the first place, and as such, *"[p]atterns have the potential to capture the principles and inner dynamics of self-organization"* (Helfrich, 2015, p.30). In this way, patterns can be understood, not as discrete things, but emerging from and impacting upon wider contextual forces. Therefore, this chapter describes in more detail the underlying problems that drive the formation of recurring solutions in the shared outdoor spaces of cohousing, contributing to spectrums between polarities of different kinds. These polarities are discussed in the first five sections of this chapter, which explore the underlying tensions and the patterns employed to resolve them, drawing upon the evidence from the cases studied and wider cohousing literature. This includes literature not previously highlighted in the literature review in response to the emergent findings in this research such as the use of working groups (Chatterton, 2014; Berggren, 2020), differences in meaning between private and public spaces (Coolen and Meesters, 2012) and cohousing residents connection to nature (Kirby, 2003; Glass, 2020). In doing so, the discussion seeks to not only highlight 'what works' as best practice in cohousing, but it also unveils the everyday negotiations, challenges, conflicts and strains cohousing residents experience in trying to achieve this.

The idea that cohousing straddles opposing ideas has been recognised by other cohousing researchers. Many cohousing researchers highlight the physical characteristics of cohousing

combining private homes with shared spaces and draw attention to the reduction of privacy and private facilities to maximise shared space and social interaction. In Axelsson's thesis on cohousing (2014), the dialectic experience of cohousing residents living both as individuals and as a collective is examined, highlighting the contrasting yet dependent relationship between resident and community. Williams (2005) discusses the need for homogeneity in residents' attitudes and diversity in their skills and interests to maximise social interaction. The apparent paradox that cohousing residents simultaneously seek independence and freedom, alongside reciprocity and interdependence, is raised (Axelsson, 2014; Fernández Arrigoitia and West, 2020). Finally, the tension between cohousing as a grassroots development that operates within top-down institutional contexts and frameworks and the potential for intermediary collaboration is also discussed (Tummers, 2015; Fernandez Arrigoitia and Tummers, 2019; Lang, Carriou and Czischke, 2020). By structuring the discussion around the five tensions identified in the analysis, this chapter furthers the discourse on the apparent conflicts within cohousing. This helps create a more complex and realistic picture of residents' experience of living in cohousing, beyond the predominant advocacy-based literature. The significance of this chapter is that it provides a realistic portrayal of the everyday challenges residents face in achieving urban commoning in a residential setting and how these challenges can be overcome through ongoing, long-term processes of response and adaption.

6.1 Private / Shared

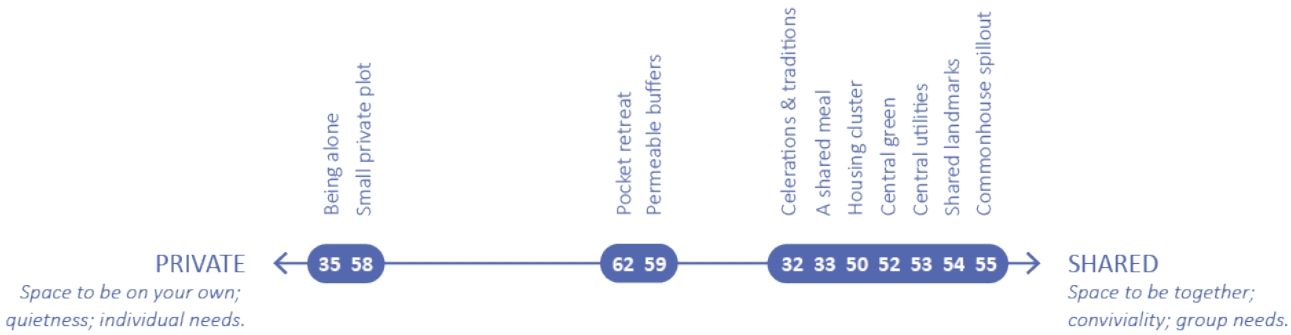


Figure 6.1. *Patterns that afford different levels of privacy, sharing and interaction in shared outdoor spaces.*

The shared / privacy theme describes the tensions between maximising shared spaces for interaction and creating areas for privacy and personalisation, balanced by permeable buffers and temporary or tolerated appropriation. The cohousing cases demonstrate a spectrum of territoriality across private, communal and occasionally public spaces within site, reflecting the typical cohousing design principles (see e.g. McCamant, Durett and Hertzman, 1994; Meltzer, 2001; Jarvis, 2011; Ruiu, 2014) for maximising shared spaces to encourage social interaction while retaining elements of privacy with individual homes. By straddling this middle ground between design for social interaction and individual homes for privacy, the cohousing cases in this research reveal both tensions

and resolutions between the personal need for privacy and a shared ambition to live more communally. This tension is explored through patterns in site layouts and ownership models that afford sharing and communality, alongside individual territorial practices and understandings within those spaces (see figure 6.1). The patterns **permeable buffers (59)** and **pocket retreats (62)** ease the tensions between the need for privacy and communality in the cases studied.

Spatial arrangements for social interaction

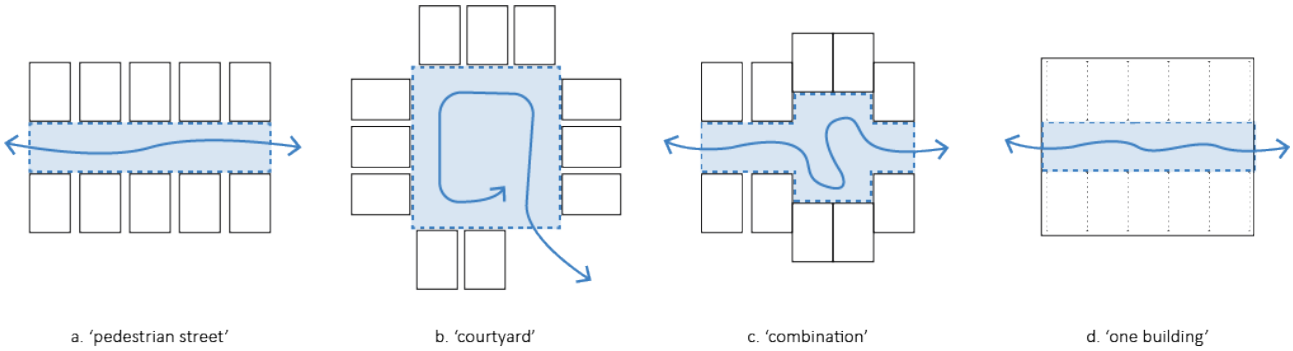
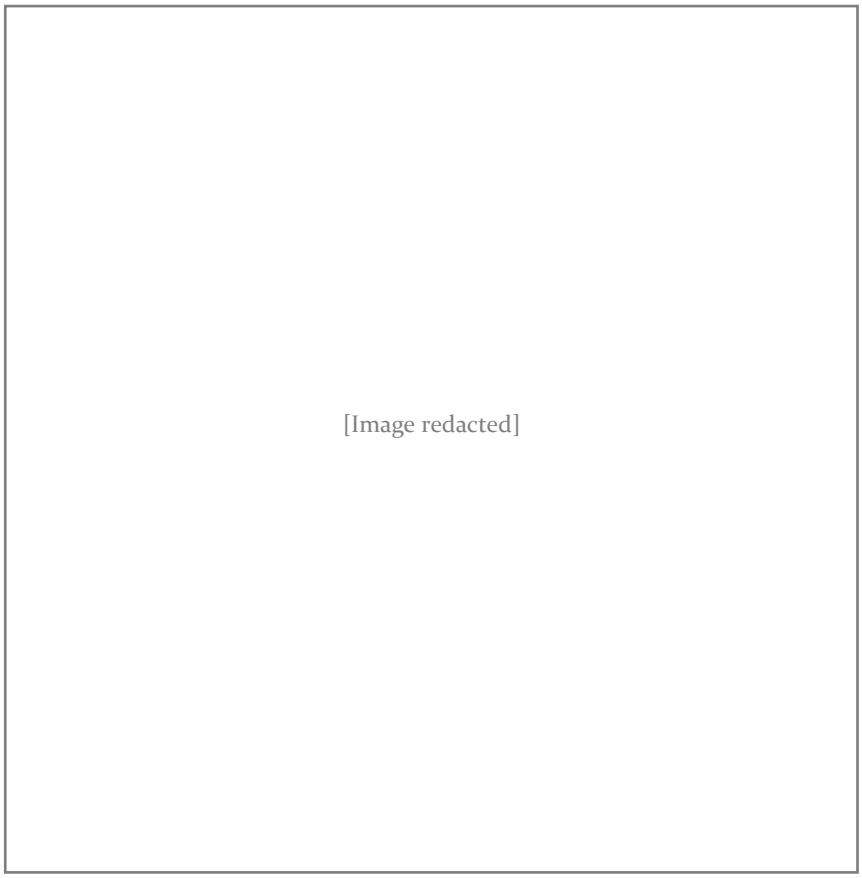


Figure 6.2. *Diagram of typical cohousing arrangements, adapted from McCamant, K. & Durrett, C., (1994).*

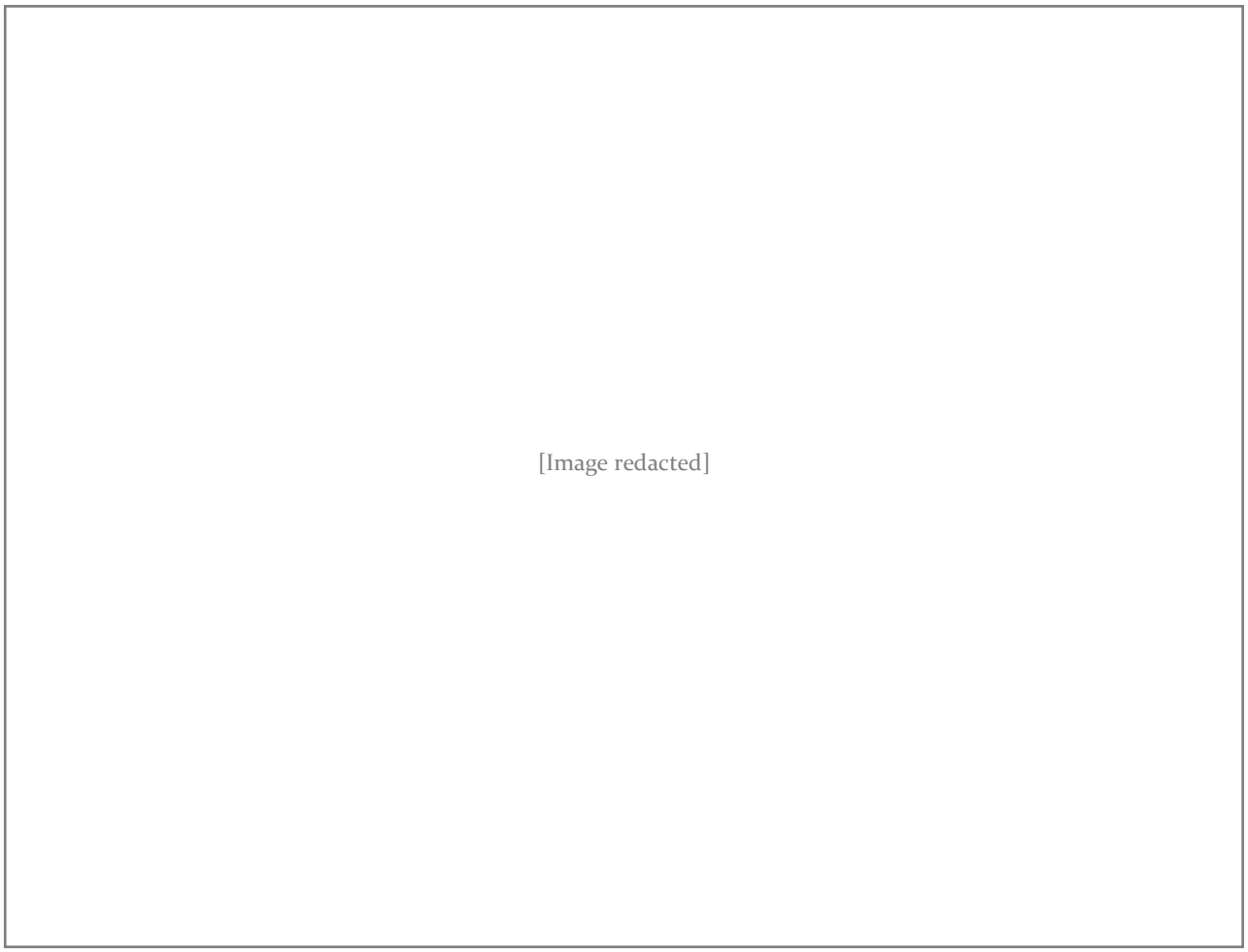
The site layouts of the cohousing cases in this study are designed around key patterns that encourage social interaction, reflecting the well-documented cohousing design principles. The patterns reflecting these design principles (illustrated in figures 6.3-6.6) include a **housing cluster (50)**—inward-facing groups of homes clustered around a shared internal or outdoor space; **central green (52)**—grass lawn in the centre of or otherwise overlooked by houses—and a **commonhouse spillout (55)**—a small area immediately outside the common house, **shared utilities and storage (53)** such as bin & bike stores, compost heaps, sheds, greenhouses and wood stores. The hared spaces were generally **buffered (59)** from private spaces and defended from traffic by **restricting cars (51)** in various ways, including locating car parking towards the edge of the site, restricting traffic through the site, and encouraging car reduction policies. The key design principles in each case study are uniquely adapted to meet the characteristics and requirements of the group and site, demonstrating the need for spatial principles to be customised to differing cultures and geographies (Tummers, 2015). This research noted variations in the layout of housing clusters, determined by the site limitations, and whether groups were undertaking purpose-built construction or renovating existing buildings. The cases demonstrated both linear and curved clusters of new build houses or internal clusters within renovated buildings, corresponding to McCamant, Durret & Hertzman's typologies for Danish cohousing layouts (1994) (see figure 6.2). The cases, therefore, demonstrate how the typical design principles that encourage social interaction in cohousing have been applied to a range of contexts.



Key:
50. Housing cluster
51. Restricting cars
52. Central green
53. Shared utilities & storage
58. Small private plot
59. Permeable buffers

Figure 6.3. *(Top) The patterns reflect the key cohousing design principles to encourage social interaction at Poplar House, with a 'courtyard' type housing arrangement.*

Figure 6.4. *(Bottom) The patterns reflect the key cohousing design principles to encourage social interaction at Timber Lane, with a 'combination' type housing arrangement.*



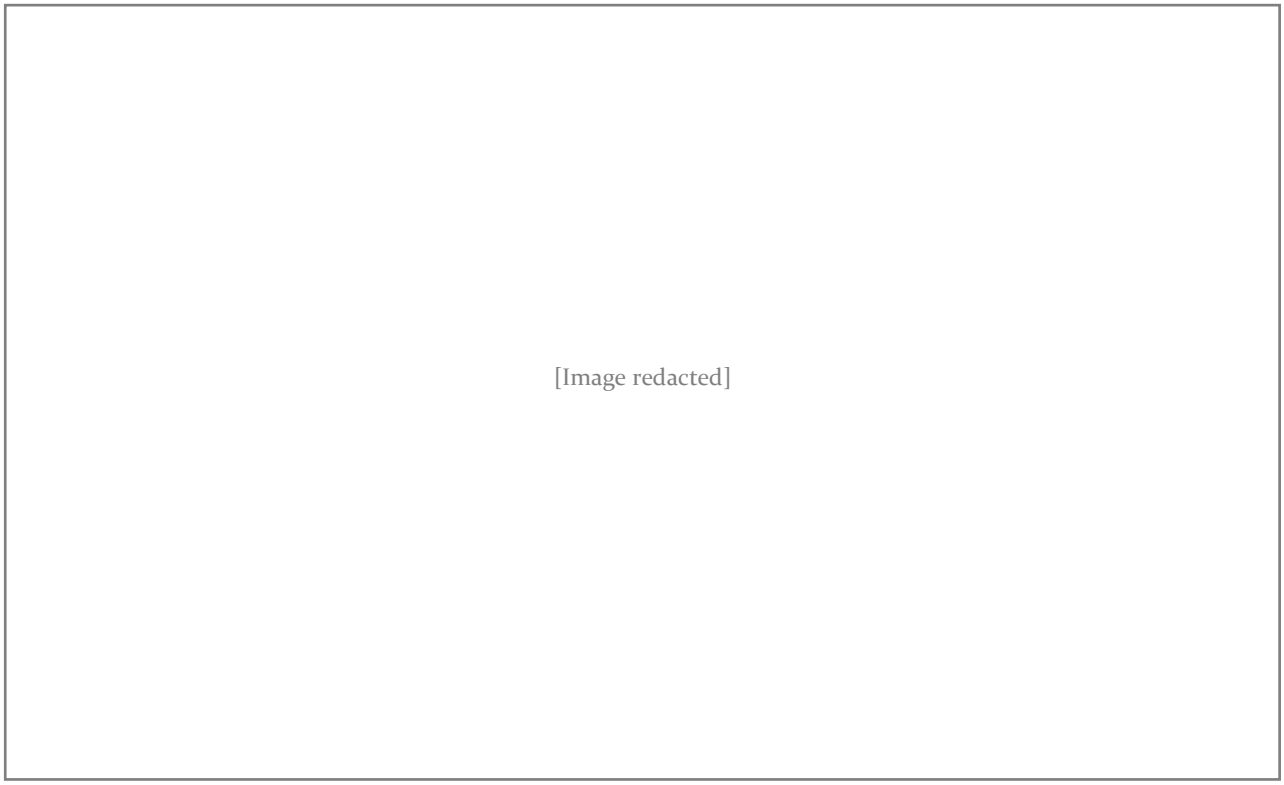


Figure 6.5. *The patterns reflect the key cohousing design principles to encourage social interaction at Grove Villa, with a 'one building' type housing arrangement.*

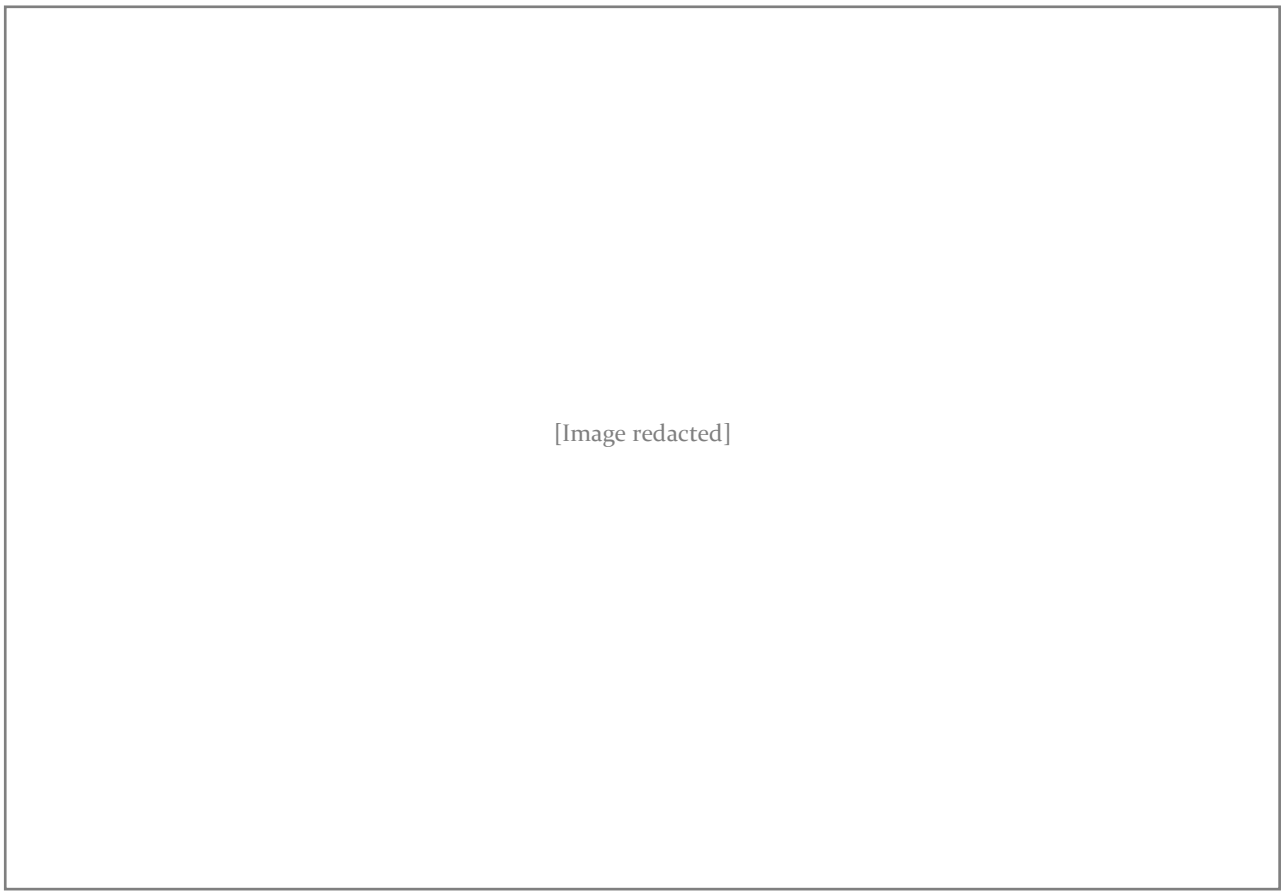


Figure 6.6. *The patterns reflect the key cohousing design principles to encourage social interaction at Cobble Yard, with a 'courtyard' type housing arrangement.*

Housing cluster layouts that define centralised outdoor spaces in the cohousing cases (e.g. 'pedestrian street', 'courtyard' and 'combination') enable key design principles for social interaction in the landscape to be more readily implemented. For example, the inward facing 'courtyard' and 'combination' housing arrangements evident in Poplar House, Timber Lane, and Cobble Yard (figures 6.3, 6.4 & 6.6) afford a **central green (52), commonhouse spillout (55), permeable buffers (59), central landmarks (54)**, and **restricting cars (51)** in the protected centre of the site. These spaces afforded a wide range of social activities, including **creative play (31)**, **celebrations and traditions (32)**, and **shared meals (33)** and residents of these cases describe the importance of living in a housing cluster that overlooks outdoor shared spaces, for feeling a connection to others and being able to supervise children while they play.

Figure 6.7. *The central retention pond acts as a landmark, reflecting the community's sustainable ethos and acting as a meeting place for residents and visitors.*

> *"[The architect] tweaked [the houses] so you've got that the lovely [curved shape] now and...that works in terms of [being] a statement about the community, how the architecture reflects the values of the community and being a shared space"* —Poplar House resident

In addition to the known cohousing design principles for social interaction, the cases highlighted the pattern **central landmarks (54)** as a symbolic feature of the group's shared ambition that acted as a meeting place or magnet to bring people together. Residents living in cases with inward-facing clusters frequently referred to notable trees, water features or polytunnels that acted as a visual reminder of the groups' ethos or achievements. For example, all the residents interviewed at Timber Lane referred to the central pond as an important site element and was often used as a recognisable meeting place to start or end interviews (figure 6.7). Therefore, the pattern **central landmarks (54)** were identified as a way of reinforcing and expressing the community's shared intentions, achievements and identity and being a feature that brings residents together and by which to navigate the site. This idea has rarely been discussed in cohousing literature and isn't mentioned as a key design

principle. The idea is briefly mentioned by Ruiu (2015), in a study where cohousing residents identify both the commonhouse and central lawn as key landmarks. Sanguinetti also suggests central and prominent common spaces and community projects in cohousing serve as *"features that may enhance connection to community via symbolic meaning"* (2014, p. 92). This finding reinforces the idea that the site's physical layout has an important symbolic meaning and practical, serving as a physical reminder and expression of the groups' identity and values. The pattern central landmarks (54) contributes a potential additional cohousing design principle for both design practitioners and communities to consider during the design stage.

Spatial arrangements for social seclusion or division

Grove Villa and Poplar House chose to renovate existing buildings and retain other existing features of the site. This resulted in layouts that were atypical of cohousing design principles. For example, the housing cluster layout of Grove Villa was determined by the division of a large central existing building into smaller private living units connected by internal corridors and common spaces (figure 6.5). This resulted in the dispersal of outdoor spaces outside the building with no clearly defined central shared outdoor space and each dwelling having a different view over the site. The lack of a single central outdoor space resulted in several separate outdoor social spaces and no central overlooked meeting points. Therefore, adapting existing historical sites and buildings created additional challenges for the site's design as residents had to work with features atypical of cohousing, such as through-roads and outward-facing buildings. The cases in this research reinforce the principle of creating safe, defensible and overlooked central shared spaces, which is well recognised in cohousing and broader residential design guidelines (Newman, 1973; Cooper Marcus and Sarkissian, 1988; Williams, 2005). In addition, it highlights the challenge of retrofitting existing buildings that are not physically suited to encouraging social interaction, something that Beck (2020) suggests cohousing groups should consider when choosing a potential site.

Further unconventional spatial features were identified in the cases, including two examples of outlier dwellings and individual houses located away from the main housing cluster. In Cobble Yard, the layout of the existing farm buildings included a dwelling towards the edge of the site, away from the main courtyard [redacted] (figure 6.6). Similarly, Grove Villa had one dwelling outside the main interior cluster of flats, and another planned to be built towards the edge of the site. [Redacted]. A study by Williams (2005), suggests the subdivision of housing clusters and a lack of connection to central shared facilities can create social division and reduced social interaction.

Figure 6.8. *One of the central greens between each sub-cluster of houses at Timber Lane.*

> *"I tend to spend more time at this end of the site because I live there…people tend to [use the green closest to their house]…Other people will move if they see someone else out, otherwise they stay at the end where they are."* —Timber Lane resident

To combat the social division, Williams, in the same study, recommends the location of shared facilities at the centre of, or at equal distances from, different subclusters of housing to encourage residents to access and interact with each other in common areas. Findings from the Timber Lane case reinforce this understanding. In this case, residents described two territorial subclusters emerging from the division of the housing cluster around two central lawns at different levels (figure 6.8). Residents colloquially referred to themselves as 'East-enders' and 'West-enders' to describe their closer affiliation and use of the central greens adjacent to where they lived. Residents tended to have greater input into the design and decision-making of the green they lived most immediate to and more frequent interaction with neighbours with whom they shared it. Despite this clear social and spatial subdivision, there was an even stronger connection to the centrally positioned pond as a **central landmark (54)** and the commonhouse positioned between the two subclusters. In this case, the physical division between the two ends of the site was overcome by a larger sense of connectedness to

the community as a whole and access to the centrally positioned facilities and spaces that could regularly bring residents from either end of the site together. The findings of this research generally reinforce the view that the division of housing into different clusters or outlying dwellings should be avoided. However, it also suggests that dispersed or divided layouts can be overcome if shared facilities and landmarks are positioned in the centre of the housing cluster and are regularly used by all residents. In such a case, dispersed or subdivided layouts could have the potential benefit of providing varying degrees of privacy for residents and hyper-local decision-making and ownership over space.

A need for personal space within a shared ownership model

Although cohousing is predominantly designed around sharing and social interaction, there remained a need for some level of privacy and control over spaces. The ownership model of cohousing plays a strong role in delineating the legal aspects of private and shared ownership within site. Cohousing can take on various ownership types, including privately-owned, cooperatively-owned or rented (Jakobsen and Larsen, 2019). The cohousing groups studied generally adopted a mix of private and shared ownership models, achieved through formal group structures—companies, cooperatives, or community land trusts—to tap into existing legal frameworks that enabled the group to buy and develop the site collectively. Residents are then considered equal members, shareholders or directors of the registered body that own the site, with each resident then owning, leasing or renting their home from the group.

> *"We're all directors of the company…as soon as you become part of the community, you put your money in to purchase your share then you are a director…we sold the properties to ourselves, which has been very complicated because we are both freehold and leaseholders at the same time."* —Poplar House resident

As the resident hints at above, when joining a cohousing community, each resident adopts multiple roles, as both a private homeowner or renter and community developer-manager. This structure, therefore, allows cohousing communities autonomy to develop and manage the site in a way that reflects the group's values and intentions and at the same time gives each resident a form of private ownership over their own home. The differences between residents' ownership and sense of belonging to the shared landscapes in cohousing have not previously been a focus in cohousing literature. This research highlighted a more unconventional relationship between legal ownership and a sense of belonging to outdoor spaces. Cohousing residents were generally resistant to 'privatising' any areas of the site in a way that would be formally recognised, but in practice, spaces closer to the home were generally used, managed, and personalised by those living closest to them on an informal basis. This relationship is underpinned by cohousing residents' shared understanding that anything outside the home's immediate footprint was mostly considered shared.

> *"Everything outside, all the landscape and all the space outside of the house is shared and managed by [Cobble Yard], which is the company [where] the people that are aiming to live there or do live there are the directors."* —Resident

Residents in the cases studied didn't legally own a front or back garden or other outdoor space (except for the back gardens at Timber Lane). Instead, the shared ownership models emphasise the joint ownership of the majority, if not all, of the outdoor spaces. In most cases, the legal delineation between private and communal ownership is marked by the external envelope of the home. Some residents were fundamentally against the principle that anyone should be allocated any personal outdoor space or kept to a minimum. However, this did not reflect their desire for differing levels of privacy and control over areas immediately adjacent to their homes for other residents. This ambiguity in ownership of the external spaces in cohousing is reflected in Research by Ruiu, who found *"cohousers strongly defended their private spaces, which correspond to their homes, but they are not always able to define external spaces, for example, front or back yards"* (2016b, p. 405). This issue was noted more in less established cohousing groups, [redacted] where groups had yet to develop agreements for dealing with the abrupt transition between private and shared. A resident [redacted] described feeling frustrated by not adapting the space in front of their home to place a small table and chairs to eat outside during the summer. Another resident [redacted] explains:

> *"Essentially as soon as you step outside your door you're in a shared territory, so you don't own that. I think that's been quite hard for people to get their heads round to some extent because that's slightly unusual, but by the same token I think it's really important that you can think of all of this as potentially shared."*

The idea that the outdoor spaces immediately adjacent to the dwelling are shared rather than private contradicts the well-established theory of creating defensible buffer spaces and a gradual transition between private homes and public or shared spaces (Newman, 1973; Williams, 2005). There was evidence that a total lack of buffer space between private dwellings and shared space did not function well, becoming a territorial void or "no man's land". [Redacted], for example, where the placement of new build houses close to a boundary fence (see figure 6.9) resulted in a rarely used, narrow green space at the back of houses. This area was designated as a shared space by residents in principle but was seldom used in this way for several reasons. Residents whose homes backed onto this space didn't feel like they were allowed to personalise or territorialise this area by placing objects within it, as it could encroach upon the shared use of the space. At the same time, the location at the back of residents' homes and proximity to windows with views into residents' kitchen and living rooms made other residents feel uncomfortable using this space. Further to this, the area was narrow and shady, making it less desirable to use than the other sunnier, overlooked central lawn spaces.

Figure 6.9. *Unused shared space at the back of residents' houses is impersonal and rarely used.*

> *"Where we were round the back [of the new buildings] there, that's everybody's area, but at the same time, that's next to their house. People would feel a bit odd just going and sitting around there. Except you wouldn't because it's sunnier in the main garden so you wouldn't need to. So there is those issues about using the space."* —[Redacted] resident

The suggestion that residents were unlikely to use this space, except for the resident who walked their dog, was reflected in my experience during the resident's walking tours. Only those who lived adjacent to the 'back of house' space felt comfortable taking me through there during their interviews, as illustrated by the blue line in figure 6.10. A resident who lived in a dwelling further away from the 'back of house' space didn't take me through this area on their walking tour, taking a longer route to walk around it, illustrated by the pink line in figure 6.10. In this case, the resident asked permission from another resident who lived next to the 'back of house' space before going into the 'walled kitchen garden' area, also located behind the new build houses. On the one hand, the lack of definition in the use and territorialisation of the space, so as not to limit its function by allocating the space to a single resident, gives the space 'loose' qualities. However, the space lacks the affordance and flexibility of multiple activities associated with 'loose space', as Franck and Stevens describe *"[f]or a site to become loose, people themselves must recognize the possibilities inherent in it and make use of those possibilities for their own ends"* (2006, p. 2). Instead, it may be considered a kind of 'non-place', a term that more accurately describes the lack of connection people have to the space and lack of references to groups or people (Augé, 2008). In this case, non-place has occurred not due to dereliction,

transience, or sterility, but a misalignment between the intended designation of space and the uses it naturally affords. The lack of territory or 'deterritorialisation' in this space, nonetheless gives it 'smooth' characteristics, an emptiness with the potential for new territorial expressions to be inscribed in the future (Dovey, 2010), which did inevitably happen during a later visit to the site, where the group had incorporated raised planting beds managed by individual residents to resolve this problem.

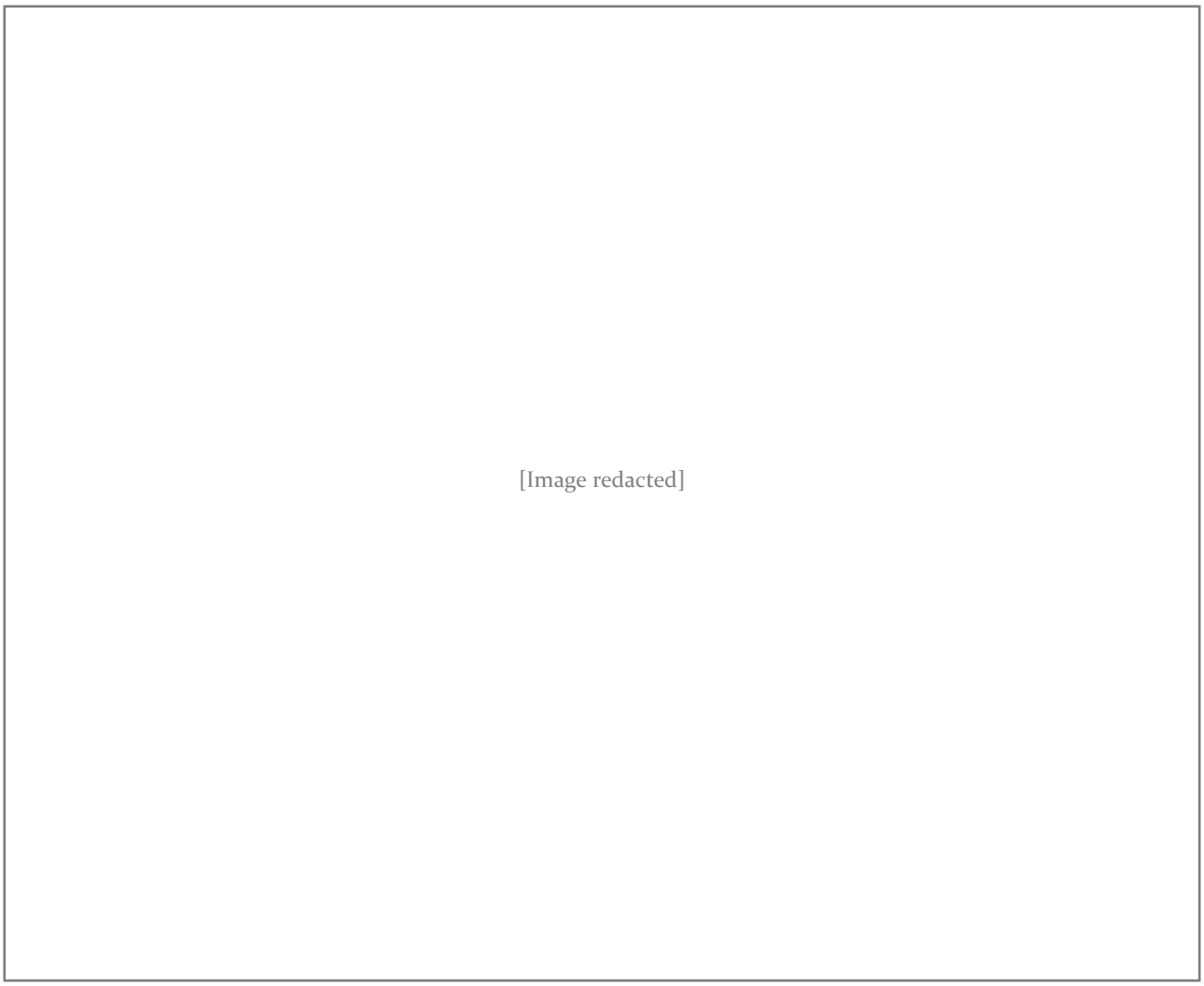


Figure 6.10. *A map of two different residents' walking tour routes around [Redacted].*

Small private plots & permeable buffers

Many of the cohousing cases studied employed permeable buffers to resolve the problems associated with the immediate transition between privately owned dwellings and collectively owned outdoor spaces. Just as the gradation of space between private and public is widely recognised in residential design, the need for buffer spaces between residents' homes and shared spaces is emphasised in the cohousing literature and design principles (Durrett and McCamant, 2011). However, the spatial characteristics and social understanding of private-shared buffer spaces in cohousing generally differ from the private-public transition in more conventional residential homes. They are

generally more transparent and open, and secondly, they have more complex and blurred management forms.

Figure 6.11. *A narrow strip and porch provide a permeable buffer between the house and the shared path.*

Residents in several cases exercised control over the narrow area between their front door and the shared path by maintaining and personalising them as a small garden. At [redacted], residents personalised this narrow strip with benches and plants, while individual porches provided niches for storing personal items such as wellies and watering cans and decorating with fairy lights. The narrow strip of land in front of residents' homes acts as a defensible transition space by positioning the shared path further away from the house and preventing people from getting too close to residents' windows. *A key design principle for cohousing advocates the use of buffer spaces for cohousing and can be achieved by "set[ting] apart from footpaths by plantings, low fences, or changes in paving, this area need not be large…"* (McCamant, Durett and Hertzman, 1994, p. 180). *This is reinforced by Williams, who highlights that a more gradual transition from private to shared "provide[s] a space in which both sustained, infrequent formal interactions (barbeques, meals and drinks parties) and frequent, brief, informal social interactions could take place"* (2005, p. 213).

A notable difference in the private-shared transitions in cohousing is a sense of openness created by a lack of physical barriers. In the cases studied, instead of fences and hedges to define front gardens, the transition spaces between private dwellings and shared spaces were notably open and barrier-free. For example, in figure 6.11, a change in material between the paved path and grass, and residents' possessions, such as benches and plant pots, are the only thing creating a buffer between neighbours passing by and private residences. In addition to this, further openness was afforded by glass panelled front doors and the opening of blinds and curtains in windows, allowing clear views between private homes and shared spaces.

Figure 6.12. *There are no permanent barriers between this resident's private patio and the surrounding shared kitchen garden. Instead, the resident has defined the edge by personalising it with moveable plant pots.*

This was also true of the edges of small private spaces, such as patios and back gardens, which were defined by low fences or potted plants, allowing others to see into those spaces (figure 6.12). These findings are reinforced by cases in the US and Denmark where there is *"little need for barriers such as fences or hedges"* (McCamant, Durett and Hertzman, 1994, p. 182). McCamant *et al.* suggest that the high levels of trust and familiarity between residents as a result of participation in community life is one explanation that allows the division between private and communal space in cohousing to become more permeable and ambiguous. This level of social familiarity and 'openness' was also reflected in the research through residents' willingness to invite visitors into their homes, borrow ingredients and materials from each other and host **communal meals (33)** in their private kitchens. Ruiu also identifies *"cohousers leav[ing] their doors open"* as something which creates a *"very thin line"* between private and shared life in cohousing (2016b, p. 405).

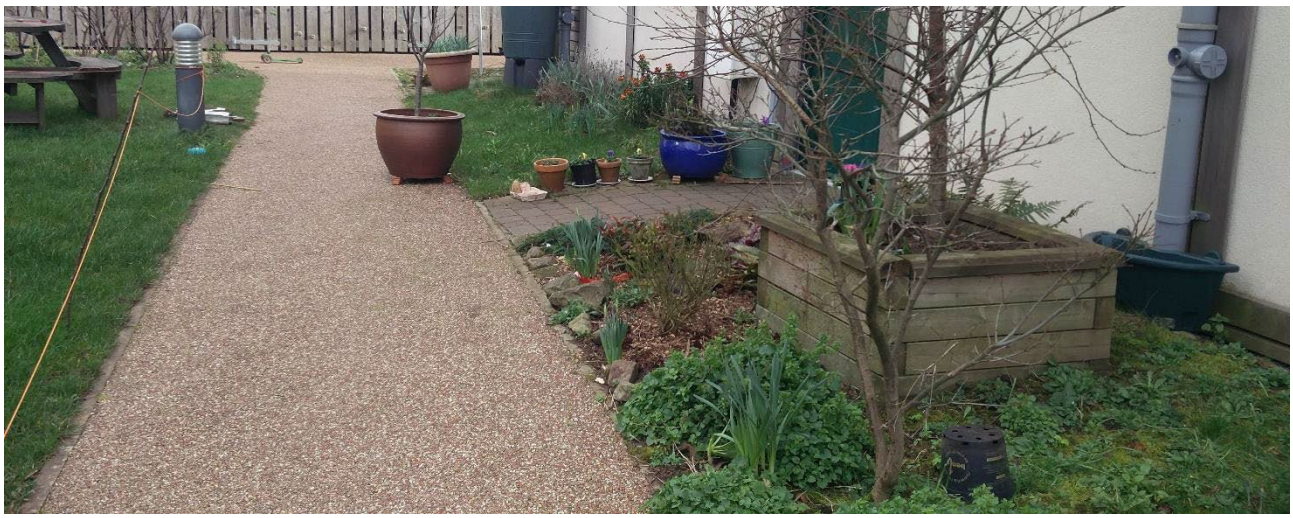


Figure 6.13. *The community owns these front gardens, but they are managed by the adjacent residents. The boundaries are kept barrier-free, so other residents can use and access the front gardens if needed.*

> *"The way we manage [the front gardens] is people plant their own front gardens, unless they don't want to or it got in a terrible state then [Timber Lane] would take them on. They are common space. So people use them with sensitivity…if the sun was shining on [my neighbour's] garden in the mid-morning, she was out at her work, if I wanted to sit over there and have coffee rather than in my shady North facing bit then that would be fine."* —Timber Lane resident

In some cases, the notion of thin boundaries or permeable buffers is reinforced by community policies and agreements that outline how residents are expected to treat their front gardens as buffer spaces. In Timber Lane, for example, their front garden policy defines rules for the treatment, use and maintenance of buffer spaces and aims to *"…promote a strong friendly community, manage the upkeep of the front gardens and recognise the reasonable expectations of privacy that Members have."* The policy outlines the use and responsibility of maintenance of front gardens to individual residents, allowing residents to personalise and use them as their own. However, the policy also prevents residents from building walls and fences or planting hedges along the 'front garden' boundary to be used as an extension of the shared central lawn. As such, the policy outlines the overlapping claims to spaces residents have, whereby anyone can use the front gardens as shared space in theory, but that individuals from adjacent residents can personalise these spaces and responsibility to maintain them. Ruiu described this overlap in private use and shared ownership in cohousing buffer spaces as *"'semi-public' spaces, which are public in theory, but private in practice"* (2016b, p. 405). A further blurring of the private and shared realms was observed in the placement of moveable and personal items at the edge of or within shared spaces. For example, the plant pots in figure 6.13 and the table and chairs on a shared path in figure 6.14. Although temporary appropriation of shared spaces was mostly tolerated by other residents, leaving personal items and toys in shared spaces for extended periods was contentious with residents. Therefore, these examples demonstrate a more complex and ambiguous territory occurring at the edge of private and shared spaces in cohousing, where the open thresholds afford an overlapping or temporary shifting of territory from private to shared.

Figure 6.14. *A 'dead-end' space has been occupied by a resident who has placed a moveable set of tables and chairs.*

Being alone in shared spaces

Although the boundaries between private and shared in cohousing were generally open and permeable, there remained a variety of preferences for privacy and screening among residents. Unlike conventional private gardens, which are valued for affording residents *"to be outside unobserved by non-household members as well as being able to control space"* (Coolen and Meesters, 2012, p. 62), the open boundaries between private and shared spaces in cohousing created less opportunity for residents to retreat away from others. One resident describes, *"all of the terraces and balconies, they are private, but you actually don't have any privacy."* Further to this, the recent pandemic has emphasised the need for space to **be alone (35)** in outdoor areas. Although some residents felt that having access to a large outdoor shared space while staying at home was advantageous during the pandemic, the smaller size of typical cohousing homes and private outdoor space meant those strictly shielding and isolating were mostly confined to their homes. A need for a greater level of visual privacy was demonstrated in an example where a resident chose to screen off the area between their 'front garden' buffer space and the central shared space (figure 6.15).

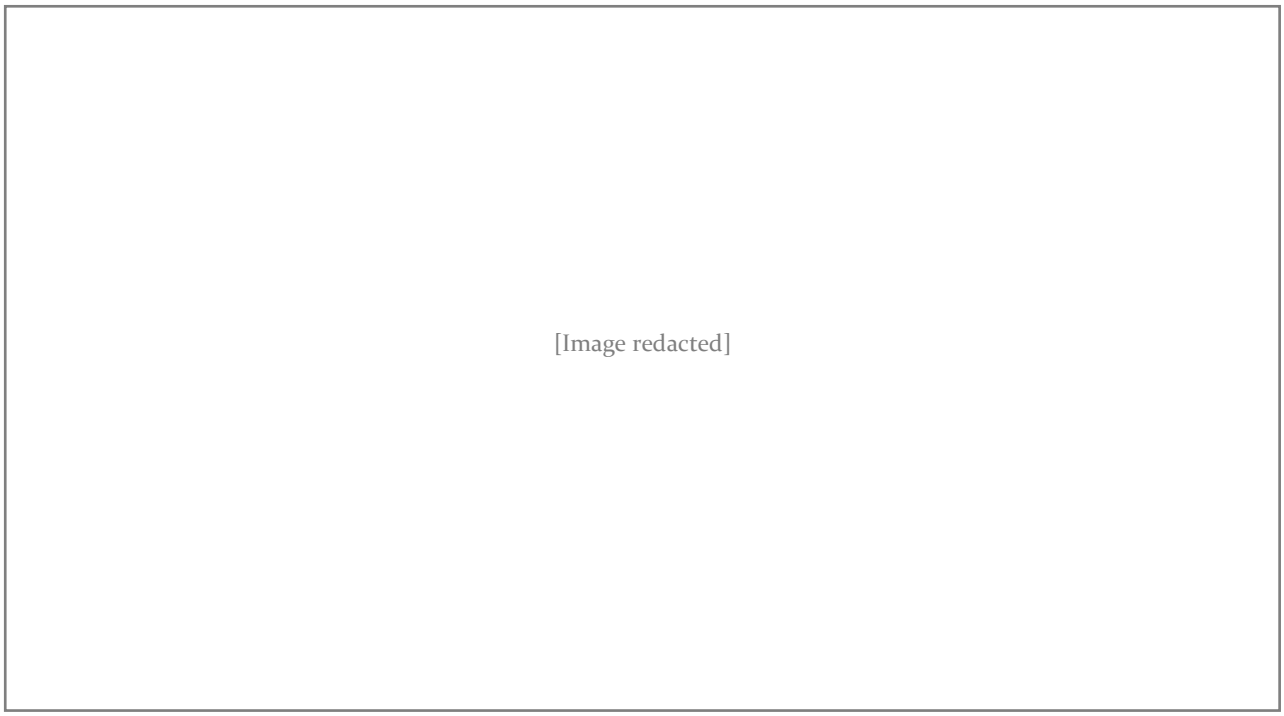


Figure 6.15. *A resident has put up a trellis fence where their house is set back from the shared space to create a more private space and less permeable barrier.*

> *"It's interesting from [this resident's] point of view, putting up the fence and feeling like [they] want that bit of private space. Whether that's an illustration of a human need, we need a bit of [space], that we feel is ours?" —[Redacted] resident*

The idea that permeable buffer spaces in cohousing may be too open for some residents chimes with Williams's (2005) observation that too small or 'rapid' a transition between private and shared

spaces in cohousing communities can result in increased withdrawal from residents into their homes and permanently closing curtains in windows. The optional preference for more privacy aligns with Martin's (1996) concept of 'hide and reveal', where spaces provide increased opportunities for residents to hide away from or reveal themselves to neighbours so that they can comfortably interact with others on their terms. Therefore, open boundaries between private and shared spaces and a general lack of visually enclosed outdoor spaces in cohousing create less opportunity for residents to retreat when needed.

Small private plots (58), modestly sized areas for individual residents, such as back gardens, patios, decks, balconies, roof terraces or individual allotment plots, are another design feature that afforded residents greater levels of privacy and control over spaces. Like the idea of smaller-than-average homes in cohousing, small private plots give residents individual control of personal space while still encouraging the use of shared spaces and facilities. In Timber Lane, each dwelling was allocated a small back garden (figure 6.16) or first-floor balcony and access to an individual allotment plot. Although other cases didn't give as much private space, some residents at Poplar House had a small patio area, and at Grove Villa, some residents had a balcony.

> *"When you're in this public space that would be a bit of a signal that you are happy to be sociable. So everyone has got a balcony or a private garden, small space, small garden. So if you didn't want to be sociable you could use those."* —Timber Lane resident

Figure 6.16. *An example of a resident's private back garden [Redacted]*

A notable difference in the private-shared transitions in cohousing is a sense of openness created by a lack of physical barriers. In the cases studied, instead of fences and hedges to define front gardens, the transition spaces between private dwellings and shared spaces were notably open and barrier-free. For example, in figure 6.11, a change in material between the paved path and grass, and residents' possessions, such as benches and plant pots, are the only thing creating a buffer between neighbours passing by and private residences. In addition to this, further openness was afforded by glass panelled front doors and the opening of blinds and curtains in windows, allowing clear views between private homes and shared spaces.

In [redacted], the configuration of dwellings within a single existing building meant there was less opportunity, aside from balconies, for residents to have **small private plots (58)** or **buffer spaces (59)**. Here, residents spoke of the conflict between noisier activities such as children's play and needing quiet spaces to retreat to for meditation and connecting to nature. In response to the tensions created from an increased need to **be alone (35)** in shared outdoor spaces, some residents [redacted] proposed creating a designated quiet area where residents could go to be alone, and others would know to give you some privacy. Although residents from other cohousing cases didn't explicitly refer to quiet spaces, there were examples of more private areas to sit within the site.

> *"...let's sit on this bench here. People do occasionally read books here, it's quite a unique view overlooking beyond to the houses on the other side of the valley, and the almond blossom and the signs of life around."* —[Redacted] resident

> *"The other thing I'm dead keen on is a quiet area...you only go there if you know that you want to be quiet...It would probably be a bit further over and amongst the trees...So even if someone else is there, but you say hello but that's it, you don't expect to engage in conversation."* —[Redacted] resident

One resident at Timber Lane took the researcher to several seating points around the site as quiet places to reflect on the shared outdoor spaces during the interview (figure 6.17). Similarly, at Poplar House, one resident described an understanding that others may want to use the shared space to be alone or with visiting family and friends. This was underpinned by discussions of having *'private-when-occupied'* areas, which signal to other residents when people want to be on their own. This idea of small niches of space that provide some temporary privacy within shared spaces and signal without words to other residents that you want to **be alone (35)** is summarised in the pattern **Pocket retreat (62)**. Even though these spaces exist within shared areas and can even be overlooked by other residents and therefore aren't private in the traditional sense, they indicate a level of private sociability through their occupation. In this sense, pocket retreats provide a temporary extension of an individual's personal space, the immediate zone or bubble they prefer to maintain between themselves and others they would socialise with (Hall, 1969). This is achieved firstly through the affordance of a small, semi-

enclosed space with a place to sit, and secondly, through the attribution of an agreed symbolic meaning to that particular location by the community. This pattern is not explicitly referred to in cohousing design guidelines; therefore, the idea of pocket retreats is a new spatial consideration for cohousing landscape design.

Figure 6.17. *An arbour bench built by one of the residents surrounded by shrubs on one side and with a view out of the site acts as a quiet place to sit on your own or with a friend.*

Contributions of private / shared tension to cohousing knowledge

The patterns relating to the tension outline spaces that afford varying degrees of sharing and privacy and residents' differing preferences for social interaction and control of space, confirming many of the existing design principles for cohousing. However, one case highlighted limitations in applying these design principles to renovating existing buildings. Several cases presented dispersed outlier dwellings as an unconventional feature of cohousing that provided additional privacy but the potential for social isolation and division. The theme highlights the potential pitfalls of 'non-places' in cohousing if the personalisation of shared spaces is overly restricted, reinforcing the need for buffer space. It also provides empirical evidence of the comparable 'thinness' of the barriers between privacy and sharing as previously suggested by others.

The theme contributes to a more complex understanding of the overlapping and blurred qualities of the buffer spaces in cohousing, enabling them to act as private and shared spaces. Finally, this theme reveals creative ways residents have created increased privacy in shared spaces that are largely designed for social interaction. This contributes to the idea of pocket retreats as a potential new design principle for consideration in cohousing landscapes, particularly in cases where other

private spaces are limited. Together these patterns demonstrate how the tension between maximising shared spaces for social interaction and creating smaller, and often temporary, areas for privacy and personalisation are played out in the outdoor spaces of cohousing.

6.2 Agency / Organisation

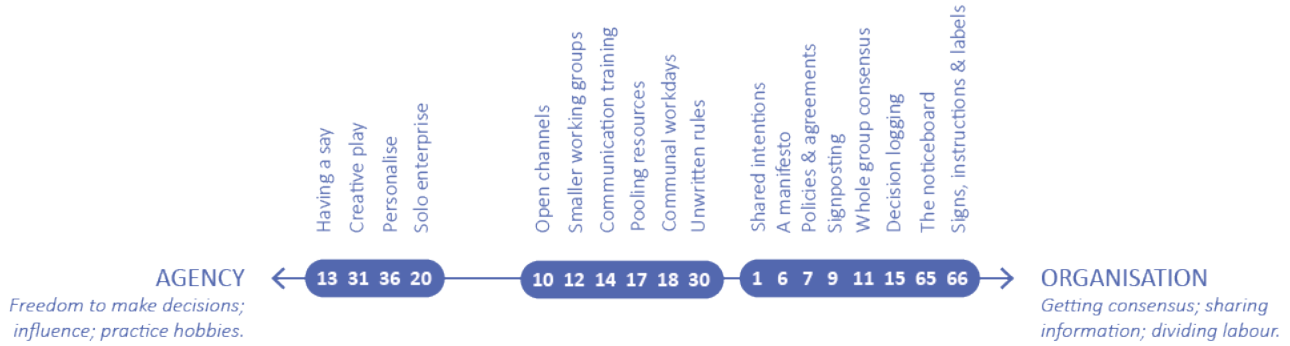


Figure 6.18. *Patterns provide varying levels of individual autonomy and group structure in cohousing shared outdoor spaces.*

The tensions between the individual agency and community organisation in cohousing are described in this section through the ethos and self-organisational systems implemented by groups and the more spontaneous everyday actions and activities across the site. The cohousing cases studied demonstrated various forms and scales of group organisation alongside more spontaneous acts of individual expression and activities (figure 6.18). The research revealed tensions between the need to develop formal rules and structures to enable the group to achieve their shared goals and maintaining informality, individual freedom, and agency. In the communities visited, finding consensus and supporting the opportunity for every resident to have a say remained one of the most challenging parts of living in cohousing. This tension is explored through patterns that deal with the broader ethos of the group, decision-making processes, organisational structures, norms and informal activities. To begin addressing this tension, communities looked towards creating hierarchical but open structures within the group to deal with different levels of formality and types of decision more effectively. Patterns enabling this resolution include **open channels (10)**, **smaller working groups (12)**, **communication training (14)**, and **the unwritten rules (30)**.

Manifesting shared intentions

Communities in cohousing often identify or are described as being 'intentional', forming around a shared motivation or goal functioning as the 'glue' binding residents together (Sargisson, 2010; Jarvis, 2011, 2015). In this research, residents' intentions in common were broadly driven by an ideology to live more communally, but residents' individual motivations for joining cohousing differed. These included an interest in building eco-housing, wanting to live with a like-minded but diverse

range of people, living a lifestyle that reflected their political views, finding mutual support in older age and having previous positive experiences of shared living. This reinforces previous research, which highlights *"a wide range of motivations for getting involved in [cohousing], ranging from the pragmatic…to more radical and disruptive living arrangements…driven by the intention to invent new ways of living…"* (Lang, Carriou and Czischke, 2020, p. 19). As such, the shared intentions underpinning cohousing can be better understood as common values for living together and engaging in community life, within which differing but complementary views and motivations exist.

Buying into the 'idea' of cohousing was raised as a more important consideration when moving into cohousing than more conventional concerns of location, the site, and the size of houses. As one resident explains, *"people bought into the idea, but not into the space as it were and that was critical really"* and described instances where prospective residents who had more specific housing requirements had left in favour of living elsewhere. All the cohousing cases chose to document their shared intentions in some form of **manifesto (6),** such as a website, planning statement, vision statement or another internal document as a way of formalising the intention. The shared intentions of the group were important in helping to guide group decision-making and actions, as highlighted by Jarvis (2015). For example, one case study community had three goals—to reduce the impact on the environment, provide affordable housing and promote a sense of community—were reflected in the decisions made, such as the use of ecological building materials, integration of rainwater collection and SUDs systems into the site. Although in smaller groups, these expectations were achieved through more informal understanding and norms, larger groups and more controversial decisions that impacted on the core values of the group, such as pet and car ownership or bringing meat into the commonhouse, were more likely to be formally documented in **policies and agreements (7)**. Poplar House, for example, developed a 'code of ethics and 'communication statement' to guide expectations for how residents should behave and communicate with each other. The expectations of the group in the management of outdoor spaces in Timber Lane were also guided by their gardening policy, which advised against the use of chemicals and inorganic materials in favour of using methods that are in line with their core values.

Although being explicit about the group's shared intentions was important for group formation and guiding decisions over time, individual differences in how these shared intentions were interpreted and enacted emerged over time, becoming a source of conflict between residents. This was particularly noted in differences in how residents interpreted the vision for the site, perceived aesthetics of planting and approaches or ideologies in garden maintenance. In [Redacted], the community had agreed early on that their shared aesthetic preference for the planting was 'natural and wild'. However, in practice, residents had very different interpretations of what that looked like and how it would be achieved. For example, one resident interpreted a natural aesthetic as being "*a*

lot of greenery, privacy and a barrier, a wild overgrown look", while for another, it meant pruning overgrown shrubs to maintain their health in the long term.

> *"What I didn't think about beforehand was how important [the aesthetics] would be and how different people's expectations…might turn out to be…we explored lots of things about shared living, what we all wanted and what our values are before we all joined the group, but this wasn't one of the things that we explored. Even if it had been I don't know whether we would have realised how strongly some people feel, including me, about things to do with the space and what it looks like."* —Resident
>
> *[Redacted]*

When a resident took the initiative to cut back the shrubs at the edge of the site, for Resident 1, the area's wilderness had been lost, and the open views impacted their sense of privacy. A lack of understanding between the residents on what a 'natural landscape' should look like and how it is maintained caused tensions between them. Although residents often talked about their shared vision and values for the group and site early on, it was difficult to predict in advance how those would be interpreted by residents in practice. Therefore, the broad values residents shared around living more communally didn't always address the more specific aspects of how they are practised and implemented when living together—this was something that had to be continually addressed and negotiated over time.

Despite cohousing communities' intentionality and shared values, dealing with conflict is a large part of communal living, requiring high levels of self-awareness and highly developed interpersonal skills to constantly negotiate the social dynamics of the group (Williams, 2005; Jarvis, 2015). This was demonstrated by several residents interviewed, who highlighted the conflicts that existed between them and other residents and openly reflected on how their own behaviour may have contributed to this. As one resident describes: *"tolerance and letting go is a big one. Even if you feel strongly about something, just accepting that you've got to compromise."* Other qualities needed to resolve disagreements mentioned by residents included *"patience"*, *"compromise"*, *"letting go"*, and *"being assertive"*. Jarvis (2015) highlights that if tensions remain unresolved, it can ultimately lead to residents withdrawing from the group, which, over time, undermines the sense of community and purpose. This was observed [redacted], where a disagreement between two residents on how the shared outdoor spaces were managed and used ultimately led to them retreating to separate areas of the site. When those residents had to isolate themselves, only during a lockdown did they feel some temporary relief from this tension. One resident described how for them the shared outdoor spaces had become associated with conflict and disagreement, rather than common ground. [Redacted].

Ostrom's (1990) principles for commons highlight the need for conflict resolution mechanisms to avoid this situation. Although several groups had undertaken communication and group facilitation training, residents didn't mention any formal mechanisms or strategies for dealing with conflicts that couldn't be easily resolved. Although many of the patterns arguably help to avoid conflict in cohousing, e.g. **open channels (10)** and **communication training (14)**, specific examples of successful conflict resolution mechanisms in cohousing are needed.

Consensus decision making and solo enterprise

> *"We have a series of cards, which has a gradation of decision making. You can support [the decision]. You can abstain because you're not sure what this [decision] fully means…Then there's when you stand aside which is a bit of a stronger dissent…then there is a final block…then it is incumbent upon you as a person who has blocked it to get a group of people together to try and find an alternative way through."* —Poplar House resident

All the cases studied adopted a consensus-based decision-making process **(11)**, described above. Making decisions by consensus aims to ensure everyone **has a say (13)** in a decision that affects the group, shared spaces or their intentions by reaching an agreement with all residents before a decision is made. Furthermore, all the communities studied adopted a fallback option of taking a majority vote if consensus couldn't be reached. However, most residents reported rarely resorting to this, if ever. Consensus decision-making aims to enable all residents to equally contribute to group decisions; however, many cohousing scholars say difficulties in managing the decision-making processes (Williams, 2005; Renz, 2006; Sargisson, 2010). Gaining a unanimous decision requires *"time, patience and a strong willingness to solve potential internal conflicts"* (Ruiu, 2015, p. 634). Residents who took part in this research also described the process as time-consuming, energy-intensive and often contentious, with *"lots and lots of decisions to make…and a lot of meetings. Many. Many. Meetings…[that] just get bogged down in [the] process."* For some, objecting to a decision was challenging because *"it's harder for one person to say, 'I don't want something' [when] it's the group against one person"*. For others, there were frustrations of *"serial blockers",* residents who would repeatedly object to a decision without suggesting a way to resolve it. Even when a decision had been successfully agreed upon, residents described how previously resolved issues could *"chunter on for a few years and sometimes pop up again",* further drawing out the process.

> *"[Redacted] But there was this deadline where you have to get [the design] into planning. And 'I don't agree with that,' but not coming up with something that's an alternative…I did do a lot of work at personal cost really because it was like being criticised and undermined…"* — [Redacted] resident

The design stage was a particularly intensive decision-making process for residents as many small decisions needed to be agreed upon as a group in a short space of time. Although previous researchers highlight that the design making process is an important first stage in defining decision-making processes and establishing a sense of community (Ruiu, 2016a), this was a less enjoyable part of living in cohousing for some residents. One resident described, *"I hated having to choose everything, all the decisions we had to take"* and suggested they would have preferred to join a cohousing group at a later stage, where the main design decisions had already been made. The design process was particularly intensive for residents acting as the main **point of contact (42)** between the group and the landscape architect or resident-practitioners. These residents took on the additional responsibility of gathering consensus on design decisions and relaying them to the design practitioner. Although allocating a single resident who acted as a point of contact (42) between the community group and the design practitioner helped streamline communication, having one point of contact also put additional working pressure on that resident, disconnecting other residents from the design process.

Figure 6.19. *An area of the site used for 'guerrilla gardening', growing vegetables as a temporary, uncontentious intervention.*

> *"Well [the consensus decision making] doesn't always [work], and it's become a little bit anarchic...and there's almost a bit of a defiant 'just do it' creeping in...I just did the raised beds at the back myself without asking anybody, which was a little bit contentious, because...some people were saying 'why don't you go through the proper procedures' and I said 'well it would take too long'...I just knew that it was April, and if we didn't put anything in then nothing would grow that year, in terms of veg."* —[Redacted] resident

The more challenging aspects of consensus decision making led residents to avoid group meetings and find ways to act without consulting the whole group. Actions taken without group consultation are described by residents as being *"anarchic"*, *"defiant"*, and *"a little bit contentious"*.

However, they were also viewed as being necessary to feel a *"sense of ownership of a space"*, *"not feel too constrained",* or *"over formalised"*. For example, residents [redacted] who wanted to grow vegetables before the kitchen garden was completed used a guerrilla gardening approach to grow veg in unused shared spaces (figure 6.19). In this case, guerrilla gardening had little impact on the group's budget, design of the site or any future uses of the space because they were temporary and, at the same time, beneficial to the rest of the group. At Timber Lane, solo enterprise was encouraged by allocating individual residents to become 'area coordinators' for different parts of the site, allowing those individuals to take on the responsibility for maintaining space and deciding what is planted there. Residents tolerated the uncontrolled, inexpensive, and low-impact actions made without going through a formal decision-making process, as described in the pattern **solo enterprise (20).**

Figure 6.20. *Children's informal play in a den they created in a wooded site area from a resident's video diary.*

> *"Some of the loveliest times here have been when people have had friends and family visiting and lots of people having been sitting on the lawn, kids marauding about and generally a very positive use of the great space that we have. The tree swing has been universally popular, and our daughter and grandson also thought it was wonderful when [another resident] set up a pulley to hoist them into the top of one of the beech trees."* —[Redacted] resident

Residents valued informal and unpredictable everyday interactions on-site and creatively used the shared outdoor spaces in unprescribed ways. This included activities such as growing vegetables, woodworking, comet gazing, yoga or bird watching, and children, using the whole site in creative ways for informal play, including using driveways as racing tracks, repurposing old materials as well play equipment, and making dens underneath shrubs. The everyday play recorded in a children's video diary (figure 6.20) demonstrated how this freedom stimulated children's imagination, learning about nature, socialising with others, physical exercise and learning new skills such as climbing. This wide

variety of activities on the site was broadly captured in the pattern **creative play (31)**. As such, how the shared spaces are used and managed to accommodate this range of activities is, for the most part, negotiated by residents outside of formal processes, developing more informal understandings and norms between each other to deal with the organisation of space. This was particularly notable in smaller and less established cohousing groups, where it was easier to gauge other residents' thoughts and get an agreement through small informal discussions, labelled as the pattern **unwritten rules (30)**. These findings reflected those of Axelsson, who identifies spontaneous *"casual socialness"* as an important part of social life to residents in cohousing, often occurring in the 'neutral' features of the site such as the outdoor spaces (2014).

Figure 6.21. *[Redacted] play equipment on the central lawn and chalk markings [redacted].*

> *"Within the group, there have been some differences about the placing of the climbing frame and whether it should be placed to one side to leave the lawn clearer and perhaps more [inkeeping]."* —Resident

Where informal understandings, norms and toleration of other residents' use of the site are preferred by residents over consensus decision making, this has its limitations. Particularly controversial, sensitive, or impactful actions that resulted in a conflict that could not be easily resolved or unequal participation in shared spaces would eventually trigger such an issue being raised through more formal processes. Examples include tidying children's toys and play equipment away (figure 6.21), maintaining quiet areas of the site, or anything that negatively impacted wildlife or the environment. In these cases, more definitive rules and policies were required to be developed through the consensus decision making processes.

Smaller working groups and community workdays

Consensus decision making (11), and formal **policies (7)** provide cohousing communities with a shared organisational structure to work towards a common goal and over formalise everyday interactions with the site. Conversely, acts of **solo enterprise (20)** and **unwritten rules (30)** afford residents individual freedom to make decisions based on more informal understandings but can also be controversial and lack an overall plan. Therefore, the cohousing communities studied developed a hierarchy of decision-making processes to appropriately deal with more informal or detailed decisions and some of the negative and intensive aspects of consensus decision-making. This was achieved by adopting **smaller working groups (12)** and **communal workdays (18)**.

> *"It's trying to work out ways to allow people to have a say, to have a voice, and be involved, feel involved, but without it becoming a real encumbrance, so that [a larger group of people] decide every tiny bit of a decision."* —[Redacted] resident

Three of the cases studied had developed smaller working groups to reduce the frequency of whole group meetings and provide increased autonomy over detailed everyday decision making. Cobble Yard, the smallest and newest cohousing group, did not employ smaller working groups formally, as individuals could take on responsibility for different aspects of the project in a more informal way. Smaller working groups consist of 3-7 residents with a small budget to take responsibility for a specific remit such as 'gardening', 'legal and finance' or 'building maintenance. Residents **self-select (4)** to be in the group they want to be in based on their interests and skills, and roles remain unfixed so residents can change roles over time. This allows residents to focus on the aspects that matter most to them without getting bogged down in other detailed decisions. For example, groups that had chickens on-site tended to have a 'chicken group' for residents interested in looking after the chickens and eating their eggs, and other residents, for example, those who follow a vegan diet, can invest their time in other interests.

The use of working groups in cohousing appears to be widespread in practice, with several authors mentioning them in their research (Chatterton, 2014; Noterman, 2016; Beck, 2020). However, the timing of when cohousing communities begin to delegate decisions to smaller working groups is key. Three cases began formally using smaller working groups during or after recently moving in, in response to whole group meetings becoming bogged down by detailed decision making. This understanding is reflected by Landenberger and Gütschow, who describe from their experience of *"discuss[ing] technically complex issues such as construction, financing or contracts in every technical detail with the entire building group often leads to irritation and can mean unnecessary extra effort; hence it is not effective"* (2019, p. 303). Jarvis describes the use of smaller working groups during the

'norming' stage of the project, so that *"smaller decisions may be delegated to a working group"* (2011, p. 571).

> *"The working days have been really successful, having a specific task and probably a bit of notice and the idea that 'oh we're going to come together'. So the shared project we had was painting the fence, and that is the sort of thing that would not have happened until lockdown…there has been some really nice moments where there's been 3 or 4 of us taking a panel each…and just being able to chat, and feel like you are connected and working together on a shared project."* —Grove Villa resident

Communal workdays (18) schedule a regular time and space open for any resident to maintain and create shared outdoor spaces. All the cohousing groups found Communal workdays a useful way of bringing together residents together at the same time to tackle larger, manual or monotonous projects. Similar to working groups, the use of workdays appears to be common across cohousing and are often mentioned in cohousing literature as an important community activity (Sanguinetti and Hibbert, 2018; Berggren, 2020). Further to this, the cases revealed that the frequency and regularity of workdays depended on the group's size and stage. For example, Timber Lane holds regular monthly workdays across a range of weekends and weekdays so that there is a greater opportunity for residents to get involved. As a more established cohousing group, this is a useful way of keeping on top of ongoing maintenance tasks such as turning compost, weeding and mowing the lawn. In addition, the workdays regularly coincided with open days to enable visitors to get involved. By contrast, as a less established group, Poplar House 'working weeks' around two times a year to get residents together to tackle larger projects, such as constructing a storage building, with the more regular maintenance tasks, such as lawn mowing and watering, are undertaken more informally by residents. Therefore, workdays are a flexible solution that can be adjusted to the size of the community and stage of the project.

Signposting and open channels of communication

Although less established groups were still developing an efficient method for directing decisions to the most appropriate people and processes, the more established example, Timber Lane, had a clear system for **Signposting (9)** decisions to the most relevant persons. This was based on four types of decisions; 'major', 'significant', 'routine' and 'emergency'; defined by the decision's impact on members, the site or existing policies and cost. Expensive, controversial, or impactful choices were more likely to be considered 'major', whereas temporary or minor adaptions with little or no impact on existing policies were more 'routine'. Important decisions that need to be made urgently could be fast-tracked through an emergency decision making process. Two groups used matrices or flow charts to define different types of decisions, how they are made and who is involved, illustrated in figure 6.22.

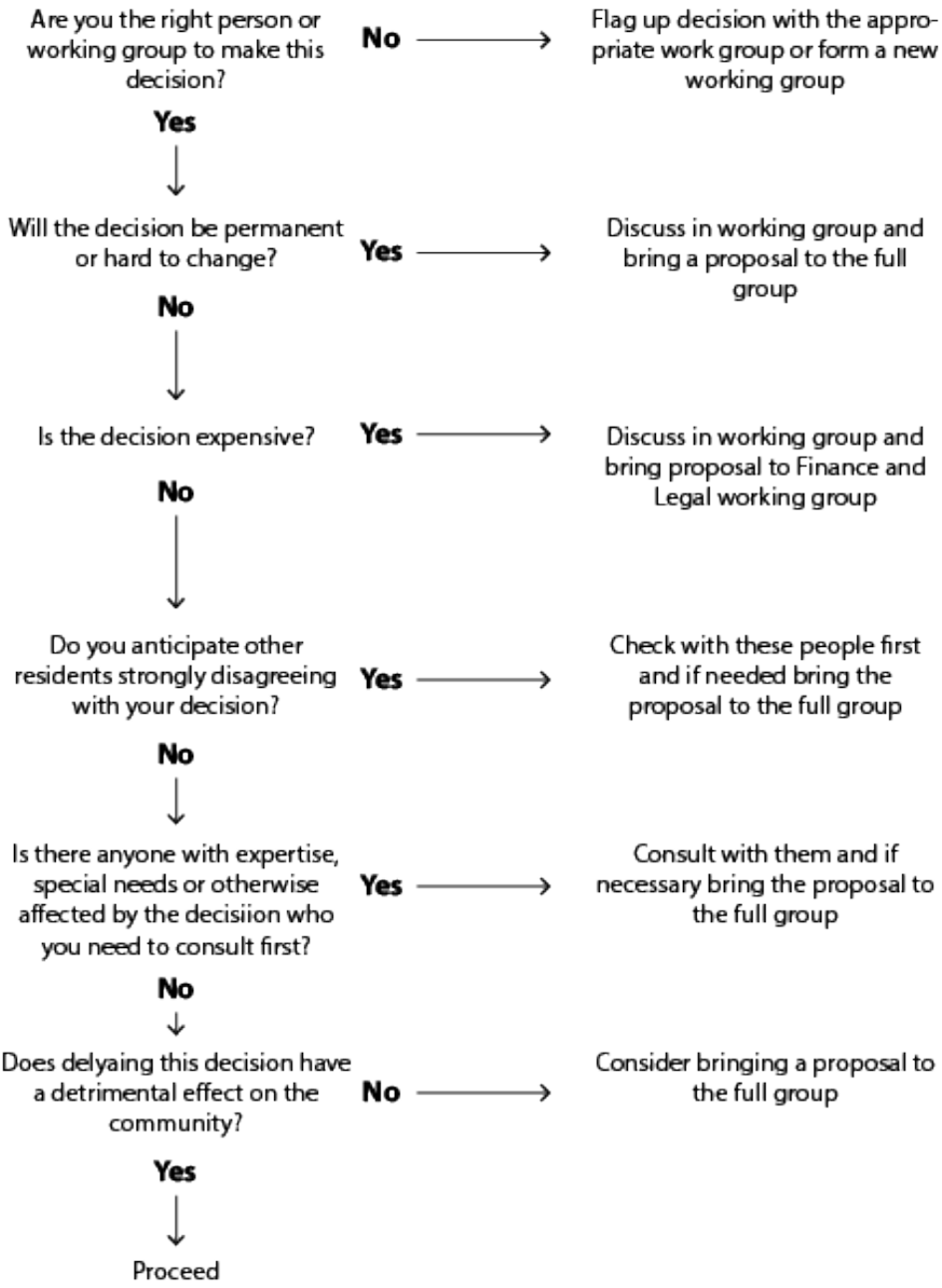


Figure 6.22. *An example of a flow chart used to 'signpost' decisions to the relevant persons and processes.*

> *"[A decision] that would shape the project in some way would go to a general meeting, or expenditure that's over £100 or not been budget for [the working group would] take that to a general meeting...maybe [the working group] bought a polytunnel which is quite expensive we would take that to a general meeting. The [decision about the] chickens is coming to the general meeting."* —Timber Lane resident

The purpose of signposting is to avoid more routine, small and less impactful decisions being debated in whole group meetings when they can be resolved and implemented by a smaller group of residents without causing much impact on others. Therefore, decisions can be directed towards the

residents who will be most impacted to have a say (13), or a smaller working group (12) of residents interested in bringing the decisions to fruition.

Maintaining opportunities for individual residents to have an individual say, especially when the decision has a bigger impact on them, is as important as signposting systems and is key to maintaining the idea of consensus. Residents expect to be consulted directly and be given a 'major say' over decisions affecting the spaces close to or viewed from their homes. One resident explains:

> *"The bit behind our house, I think people would expect us to have a major say about what happens there because we are overlooked by the [neighbours] and so it would be quite important that we say 'well we want some trees to hide the [neighbouring buildings]' and people say that's fine because that affects us most."* —[Redacted] resident

As discussed in the previous section, having a say may not be possible if another resident decides to take an impactful decision without first consulting the relevant individuals, working groups or whole group. Therefore, **open channels (10)** of communication are essential in cohousing to share information and keep residents informed across the various scales of decision-making processes. This ensures any decisions made by individuals or smaller working groups are documented through minutes or similar so that others can track and contribute to decisions if needed. This requires communicating large amounts of information between groups and individuals, which can be complex and overwhelming.

Figure 6.23. *A resident pinned up three layout options for the kitchen garden area of the site, including a 'design your own' option the get feedback from the rest of the group.*

> *"I just drew a picture and annotated that with possibilities, 'we could put wood across the [boundary fence], we could cut a hole, we could plant a spikey hedge'...and left post-its in the post room...for about three weeks people put their thoughts about that. There was a very clear bias from that feedback. So we fed that back to people who had a different view."* —Resident

The groups used various paper and digital methods for keeping each other up to date with decision-making. These methods of communication needed to be accessible to all residents, particularly for digital platforms, where not all residents had access to. In one case where a resident didn't have access to a messaging app because they didn't have a smartphone, they felt they were being left out of more informal decision making. In response, the group began trialling an **online platform (38)**, 'slack', to make information sharing and decisions accessible to all the group. Paper methods of communication were also popular. N**oticeboards (65)**, chalkboards or whiteboards located in central areas where residents frequently pass, such as the entrance to the common room or the places where residents collect their post, to update residents on community events or to submit ideas and get feedback from residents in between whole group meetings (figure 6.23). Informal surveys and idea boxes were a useful way of allowing residents who weren't in the smaller working group to remain involved and influence some of the decisions made in the shared outdoor spaces.

Contributions of agency / organisation tension to cohousing knowledge

The idea of personal sacrifice and loss of autonomy for the 'greater good', is played out to a certain extent in cohousing, where residents voluntarily give up larger private spaces and their preferred homes in favour of the 'idea' of sharing, belonging to a community and sense of collective purpose. At the same time, individual freedom, agency and informality are highly valued by chousing residents. This tension is recognised by several other cohousing researchers, including Fernandez Arrigoitta and West. They describe cohousing as being governed by *"an intricate balance between individualism and interdependence"* (2020, p. 19), whereas Standtsted and Westin (2015) highlight the existence of both autonomy and reciprocity in cohousing. Sullivan describes a similar paradox in cohousing *"that while cohousers seek to reestablish the centrality of community, they are bound together by distinctly individualistic pursuits"* (2016, p. 622). Axelsson (2014) describes how *"forming sociality together"* and *"living apart as individuals"* in cohousing is not contradictory but a necessary dialectic relationship with each other.

This section provides a deeper insight into the organisational systems of cohousing communities, which are often not discussed in cohousing literature beyond the existence of working groups and workdays. This section reveals that although cohousing is based upon a non-hierarchical ethos of equal membership and say, a hierarchical organisational decision system is required with the large number of technical and routine decisions that need to be made in cohousing. The key to maintaining an equal say in decisions within this hierarchical system is to create opportunities for

residents to see and have a say on decisions outside the working groups they are involved in. The balancing of hierarchical and non-hierarchical organisation mechanisms in cohousing is described by Lietaert as *"the existence of ranking and leaders is acknowledge by cohousers as human processes that naturally occur in communities [with] clear mechanisms [...] created to ensure that everyone gets a fair opportunity to express their ideas..."* (2010, p. 578). Although this system may be constantly challenged in cohousing, unconsulted actions or imperfect communication methods demonstrate an interesting ambition to balance vertical and horizontal forms of organising.

6.3 Do-it-yourself / expertise

Figure 6.24. *Patterns that enable varying degrees of bottom-up or top-down intervention and knowledge.*

The tensions between a DIY ethos and the need to bring external expertise into cohousing are described in this section through the forms of knowledge sharing that occur within and beyond the community. Communities in cohousing generally have high input levels into planning, designing, constructing, and maintaining cohousing developments (Chiodelli and Baglione, 2014; Ruiu, 2014; Jarvis, 2015). Residents across the case studies were involved to varying extents in the design and build of the outdoor spaces, ranging from **building parts of the site themselves (21)** to **hiring out (43)** contractors and specialists, reflected by a range of **resident skills and interests (19)** including **resident-architects and -builders (44)** (figure 6.24). Despite these high levels of involvement, some residents were less interested in DIY, and the time limitations, complexity and risks involved in taking on a new housing development required bringing in expertise and skills from outside the group. The outdoor spaces were viewed by residents and design practitioners as affording more opportunities to get involved through gardening and small-scale building than the construction or refurbishment of new homes. However, this still required residents to engage with design practitioners to plan the site's layout, contractors to build structural elements, and specialists such as tree surgeons. Finding a balance between ways for residents to get involved in the development process and working with outside professionals raised several challenges. These included sharing and utilising knowledge within the group, communication between residents and professionals, and the additional skills and roles required from both. This section will explore several patterns that attempt

to resolve these challenges, including **picture in many ways (8), a learning project (16), learning from peers (39),** and **patterns 67-72** for design practitioners.

A self-build landscape ethos

A key aspect of cohousing is the autonomy of communities in designing, creating, adapting and managing their housing environment. According to Axelsson, the involvement of residents in influencing their living environment is *"a reaction to an unfulfilled demand of other ways to live"* and *"to supply [them]selves with the residential situation that [they] need"* (2014, p. 90). The cohousing communities studied adopted a resident-led approach to development instead of partnering with a developer such as a housing association. This model requires residents to fund the development themselves, giving them control over the process with the help of an appointed professional. For some residents, the ability to shape their residential environment to suit their needs was an important motivation for joining cohousing. Furthermore, high upfront costs and budget limitations coupled with residents' skills and interest in gardening or building drove a **self-build (21)** approach to the outdoor spaces.

Some residents were initially interested in **self-building (21)** their own house and the outdoor spaces. However, due to the complexity of developing a multi-dwelling project, all the cases decided to hire contractors to undertake the main building work. Where residents had the skills or interest to learn, they constructed built landscape elements, such as sheds, wood stores, green roofs, paths and raised beds. Self-building is usually used to describe projects where individuals or groups build their own homes from scratch (Porqueddu, 2018). Self-building was mentioned by Ruiu as occurring in several cohousing cases where *"members physically built some part of their communities"* resulting in "*spending a long period of time working together contributed to creating their community in both material and immaterial terms."* (2016b, p. 405). This was observed in Poplar House, where the construction of the shed (figure 6.25) brought a sub-group of residents together regularly to problem-solve, communicate and develop understanding between each other. Self-building also had a further benefit for residents in allowing them to adapt or 'tweak' the design at a very detailed scale, which would likely not be possible if it was being built by an external builder. In this case, the planned height of one half of the shed was slightly lowered during construction, responding to another resident's concerns about how their view would be affected. The ability to adapt their environment in a way that reflects the community's precise needs was important to those residents whose motivations for joining cohousing was driven by an interest in building eco-housing. This reinforces Axelsson's finding that for some residents having control over shaping their residential environment was a key driver for joining cohousing, as they did not believe it to be possible in other residential models (2014).

Figure 6.25. *A shed, workshop and bin store with a green roof was designed and built by a small working group of residents.*

A wider range of residents was involved in building the soft elements of the landscape, such as planting and lawns, which were perceived as easier for residents of different abilities to create and maintain. For example, **growing produce (28)** was a popular activity in all four case studies, and practical way residents got involved in the shared outdoor spaces. Although this was mostly led by individual residents or smaller groups interested in growing fruit and vegetables, it also provided additional opportunities for other residents to pick salad when making group meals, children picking fruit, and group harvest activities such as jam making.

> *"Making a landscape or growing things and making a garden…is a lot quicker than it is to build a building…the landscape is just a bit easier for people to participate in [with] different abilities."* — Design practitioner

Self-finish describes a less involved version of a self-build project, usually associated with architecture. Residents are involved in completing and customising an empty building 'shell' by installing the internal decoration and fittings or exterior cladding themselves (Stride Treglown, 2018). Self-build and self-finish fit within the broader idea of 'Open building' covers design approaches that leave potential for the adaption of architecture by people who live there (Habraken, 2008). These terms are rarely applied to a landscape context, despite the outdoor spaces providing greater opportunities

for a wider range of residents to adapt the spaces themselves, as is demonstrated in these cohousing examples. This research highlights that self-finish may have particular relevance for the landscape context, as residents found it easier to customise, adapt and finish off the outdoor spaces at their own pace and required more readily available skills.

Sharing residents' knowledge within the group.

To achieve elements of self-building and collective involvement in the shared outdoor spaces, residents' shared knowledge within the group in various ways. This included utilising residents' **individual knowhow (19)**, **self-selecting (4)** roles, and treating cohousing life as a **learning project (16)**. **Individual knowhow (19)** describes residents' previous experience, knowledge, skills, and abilities to participate in various gardening and building activities. Several of the residents interviewed had a prior building and carpentry experience and were able to volunteer their skills to design, order materials and construct small scale buildings. Others had experience teaching permaculture principles, which enabled them to help design composting systems and suggest planting locations. As discussed in the previous section, this know-how is given voluntarily to encourage residents' agency and the self-selection of roles.

> *"[One resident] who's rather wonderful at construction has made this amazing wood store. That's good isn't it? We have some amazingly handy people I have to say. They say, 'I'm just going to build that' and it just sort of happens. It is amazing."* —[Redacted] resident

The need for residents to freely volunteer or put themselves forward is reflected in not all residents wanting to participate in gardening or DIY projects. This research captured mixed interest levels in gardening and self-build projects. The below quote describes one resident's dislike for gardening and DIY activities and a lack of energy to get involved in workdays. Instead, residents got involved in a range of different roles and activities best suited to their interests and capabilities, such as cleaning the common house, cooking, advising on legal and financial aspects, building maintenance, writing meeting minutes, organising social events and open days, and managing the website and social media accounts. As such, residents contribute to the shared outdoor spaces in different ways, including in 'behind-the-scenes' and supportive roles.

> *"Some people are definitely more green fingered than others and some people like doing DIY and projects like that…I have had a garden, but heavy digging, lifting and general labouring is not now my idea of a good time!…I have less energy now than previously…ask me to do an 8 hour stretch, which is what some people do when we have workdays, and I feel absolutely shattered and I don't enjoy."* —[Redacted] resident

> *"I think that's a different set of skills and knowledge…What we try and do is not be too dictatorial and recognise people have got different interests and capacity…people are hopefully not oppressed by having to do stuff they don't want to do."* —[Redacted] resident

The cohousing communities in this research did not stipulate specific roles or requirements for residents, instead of relying on residents to self-select and volunteer for roles most suited to their interests and skills. For example, at Timber Lane, although residents are required to join at least one small working group, they choose which group they want to join and the role they take on, which they can decide to change later. Therefore, the emphasis is placed on giving the individual freedom to self-select or volunteer themselves for roles and activities in cohousing to suit their interests and capacity (see **self-selecting group (4)),** section 6.4). The patterns of **individual knowhow (19)** and **self-selecting (4)** enabled residents to capture and utilise various skills and knowledge to provide mutual support within the group. The idea of volunteerism and willingness has been highlighted as a typical characteristic of cohousing communities (Jarvis, 2011). This reflects the importance of proactive willingness in participating rather than something dictated or enforced, further underpinning the idea that cohousing residents seek individual freedom and agency within the organisational structures discussed in the previous section.

> *"I've got a lot of ideas and I throw ideas out and sometimes I'm quite firm about I'd quite like to do...and then people feel disempowered, because they think 'oh, alright I just won't bother then'...I don't know whether to try and work hard in...help[ing] people get involved or whether just to accept it's [mine], this is what [I do]...[it] just made me think how well are we doing in terms of people feeling empowered and involved?"* —[Redacted] resident

Although giving residents the freedom to self-select roles and responsibilities was an important part of maintaining a sense of freedom and agency in cohousing, this research found that this could also lead to some residents feeling unable to get involved. One resident, who was actively involved in the decisions made in the shared outdoor spaces, reflected on how others may be put off getting involved because of their knowledge and experience. Less experienced residents may feel like it isn't their place to get involved in shared outdoor space creation and maintenance when others have already taken charge. Due to physical limitations or child-caring responsibilities, residents who cannot get involved in gardening activities may also feel left out of decisions made about the shared outdoor spaces by more able residents, leading to unequal input. One resident explains: *"there's a lot about gender and age that needs to be handled really carefully so that the people who are able-bodied and skilled don't take some lead all the time."* The challenge of getting other residents involved in the outdoor spaces which weren't part of the smaller working groups was noted where residents didn't feel able to harvest vegetables or collect eggs if they weren't part of the allotment or chicken group. Despite potentially wasting a bumper crop of chard or a surplus of eggs, residents outside the relevant working groups either weren't fully aware of the produce that needed to be harvested or didn't feel entitled to take it. This was also frustrating for other residents, who felt the crop had gone to waste or had bought similar produce from the supermarket when it wasn't necessary, leading to a divide between those perceived to be contributing and those who were not.

By treating the cohousing development as a **learning project (16)**, organised events and activities provide opportunities for residents to get involved and try out new skills, where they otherwise may not feel confident to do so. To encourage the sharing of skills and knowledge between residents and allow less experienced residents to get involved in activities, the cohousing groups studied held organised and informal events and activities. Timber Lane has a dedicated 'learning' working group who see their cohousing group as a learning project, as one resident describes: *"so people who know absolutely nothing about gardening can still be in the landscape."* The group holds regular skill share workshops to encourage members and friends to share their knowledge and skills. I attended one such skill workshop on creating a plan for your allotment for the year, where I learnt useful things for my allotment, including where to source local recycled materials and when to sow seeds (figure 6.26). After the event, many people tended to their allotments, swapped plants, and shared advice. In other cases, residents shared ideas and knowledge informally during other organised events such as workdays and harvesting events. Social events, such as an annual bonfire night, were places to celebrate and showcase residents' skills such as juggling or baking.

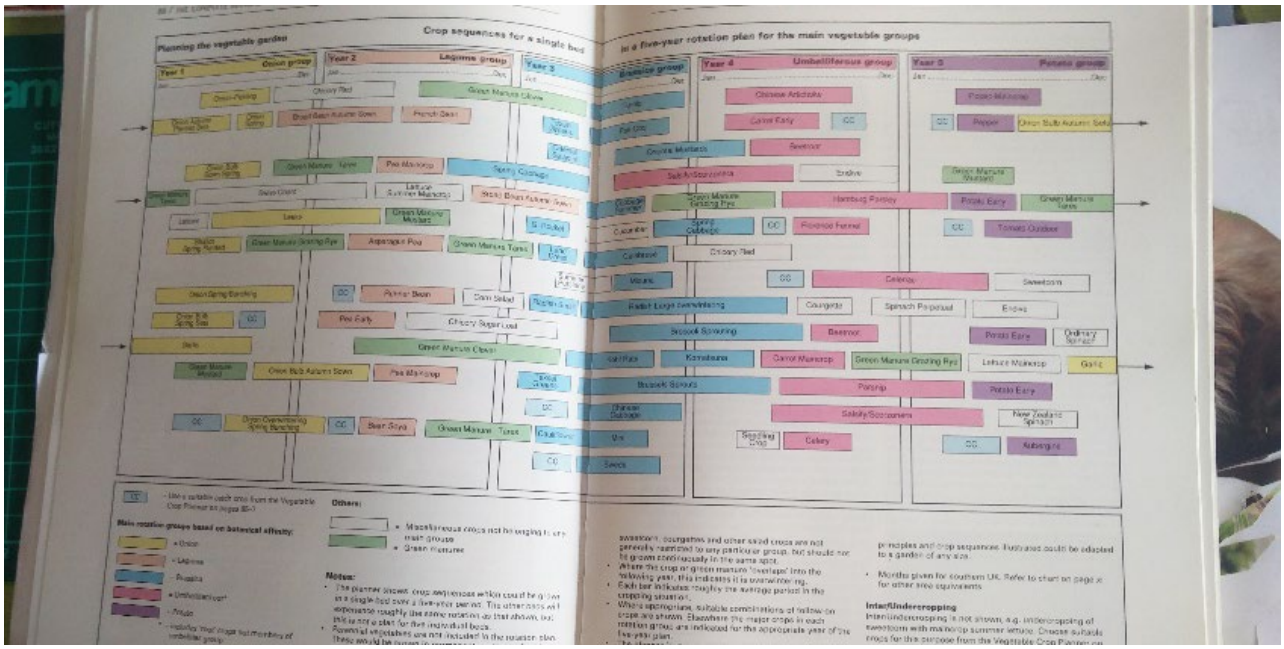


Figure 6.26. *A reference book was put out on a table to support a skillshare day where residents shared their knowledge of planning out an allotment plot.*

> *"The common room was set up with tables for activities, one for planting onion sets, comfrey, and seed potatoes, one with reference books and magazines that people had brought with them, and another with crafts materials for designing their plot…[an attendee] shared with me information when to plant squash seeds and where to source cheap materials for raised beds…after, I stopped off at the place [they] had recommended and bought some cheap timbe for my allotment…"* —Fieldnotes from Timber Lane.

Residents' ability to get involved in shared outdoor spaces requires a wide variety of skills, including coordinative skills for ever-day organisation, social skills, and financial, technical, and planning capabilities (Huber, 2017). Many authors describe how knowledge is shared in cohousing through collective activities or 'doing' (Noterman, 2016; Fernández Arrigoitia and West, 2020; Laine *et al.*, 2020) or what Jarvis describes as continuous *"circuits of learning, doing, being, and becoming"* (2011, p. 568). The ability for residents to capture and enhance these skills within the group have led researchers to associate cohousing with mutual support, community capacity, empowerment and social capital (Ruiu, 2016b; Czischke, 2018; Brenton and Argent, 2020; Fernández Arrigoitia and West, 2020). This research highlights that although this does occur informally through a general willingness for residents to volunteer their time and share knowledge, this alone does not guarantee residents' ability to get involved in shared outdoor spaces. In fact, such informality can exclude residents with less time, ability or confidence from participating in activities and decision making in outdoor areas. Instead, formal activities and events, such as skillshare days, organised by more involved residents, provide greater opportunities for others to try their hand at something new, join in as a one-off occasion, and learn new skills without having to commit to anything more.

Sharing residents' knowledge outside the group.

> *"There was kind of a precursor to [Timber Lane], and before that…there were 10 people, 5 couples, who had a year of visiting places, communities and cohousing places and learning a bit about build methods…We've got policies we looked to other housing projects to get inspiration to get guidance of how they've done it."* —Timber Lane resident

Residents who have gone through the cohousing development process gain significant knowledge and expertise beyond those who often lack specialisms in collaborative housing and are valuable for other emerging groups. Fernandez Arrigoitia and Tummers described in their research *"the facilitation skills learnt during their communities' development and their everyday experiences were felt to contribute a form of lived, embodied knowledge that cannot be gained entirely through formal training"* (2019, p. 357). Many cohousing communities share information with and learn from other community-led housing groups through **peer to peers (39)** learning. It is common for cohousing groups to visit and attend open days of established cohousing groups at the early forming stages to learn about successful development (Chatterton, 2013). All the case studies mentioned seeing other groups in the early stages of forming and finding a site. One cohousing community shared advice with another local cohousing group at a similar stage in development, as they had both been part of a local cohousing network before forming, with a cohousing member acting as a project manager for the other. Residents also commented on ideas borrowed from other communities, such as building methods, policies, decision-making, governance and financing models. To facilitate sharing between cohousing groups, Timber Lane held 'learning events' to share what they have learnt with early-stage groups or

for students and academics who want to learn more about the cohousing model. These include regular talks on different aspects of cohousing, a tour of the site, meeting residents, networking with other groups. Other ways of sharing information included spending away days at other cohousing sites or arranging house exchanges locally and internationally.

This grassroots approach to sharing among cohousing communities is also facilitated by **networks and hubs (37)** designed to connect housing groups on a national scale (Fernandez Arrigoitia and Tummers, 2019). Lang, Chatterton and Mullins identify organisations such as the UK Cohousing Network as organisations that act as intermediaries between regime actors such as local authorities and community-led housing projects (2020). According to one study, the role of the UK Cohousing Network includes broadening the relationships between community housing organisations, gathering new evidence on community-led housing, facilitating knowledge exchange at local and international scales, raising awareness, building relationships with government and policy mobilisation (Fogele, 2016). National online networks such as the UK Cohousing Network and 'Diggers and Dreamers' were mentioned by residents as useful ways of finding cohousing communities to join or advertise vacancies for prospective members. The larger networks, such as the UK Cohousing network, have been useful for residents during the pandemic, as a way of sharing their experiences and knowledge on how to adapt to the sharing of spaces in response, by launching a series of online 'cohousing cafes' to share their advice and experience of dealing with the pandemic.

Residents also mentioned more local city-based cohousing networks, which allowed emerging local groups to connect with, share information, and support each other. The researcher's first introduction to community-led housing was during an event held by the local cohousing network, which had a series of talks by established community-led housing groups across the country and was organised by the architecture department of a local university. At least one resident also mentioned attending cohousing events at a university, suggesting they are potential 'hubs' for cohousing information and networking. Although a community-led homes workshop is mentioned being held at a University in one paper (Lang, Chatterton and Mullins, 2020), the idea that universities may act as hubs for cohousing networks and knowledge sharing has yet to be readily discussed in cohousing literature.

> *"We used to have meetings with the council, but that stopped about 18 months ago maybe two years, when there were more cuts particularly in the housing planning departments."* — [Redacted] resident

One of the challenges identified with the support provided by intermediary organisations highlighted in the quote above is the shifting nature of government policies and funding in supporting these networks. During the timeframe of this research (2018-2021), a new government-funded

organisation called Community-Led Homes was set up, which included a partnership of existing organisations, including UK Cohousing, the Confederation of Co-operative Housing, the National CLT Network and Locality (Community Led Homes, 2018a), and included the development of a network of local hubs aimed at providing free advice and support to community-led housing groups. The cohousing groups in this study didn't mention these hubs partly because they were established after residents had developed or begun developing their site and partly because there wasn't one local to them. Although several different funding options are available for cohousing communities, they are short-term, only lasting a year or two, making it hard for community groups to plan funding routes. This finding supports the establishment of government-level financing and advisory infrastructure, which has been suggested to expand the cohousing idea to other models of living (Hacke, Müller and Dütschke, 2018).

This research found that **taking part in research (48)** is another potential avenue for cohousing communities to share their knowledge with and learn from others outside their group. The cohousing groups involved had all previously been involved in research, and the most well-known group received high levels of interest and requests to participate in research. Although some cases had led to research fatigue and disappointment for not benefitting or hearing about the research outcomes, Timber Lane cohousing set out criteria for being involved in research that ensure the group had access to or otherwise benefitted from the research they were involved in. Residents sometimes referred to past researchers who had visited the site and passed on contacts and sources of information that might be relevant, suggesting past research had transferred some knowledge to the group. Participation in research that feeds back the findings to cohousing communities could be a different way to share knowledge.

Working with professionals

The construction or renovation of cohousing requires a developer to find the land, finance the construction and hire builders. In all the cases studied in this research, cohousing communities became their own developers, financing the land acquisition and construction themselves and hiring out (43) design professionals, building contractors, and other specialists. Although residents drew upon a wide variety of skills and resources within and outside the group to self-build and -manage the outdoor spaces, there were barriers to residents doing everything themselves, particularly concerning the building construction and planning. The unforeseen complexities in a housing development require legal, planning, construction and project management knowledge, and residents often need to balance the running of the cohousing build alongside full-time jobs and family commitments (Chatterton, 2013). In the outdoor spaces, specialist structural, technical and topographical expertise may be required when dealing with complex site challenges or incorporating new and specialist

sustainable technologies, such as SUDS or green rooves. Therefore, **hiring out (43)** outside expertise is often necessary for cohousing groups at some point in the development.

> *"I think some of us were puzzled at the choice of plants. I don't think that ended up as a really shared feeling about 'Oh yes this is great, we've had an expert come in and help us to develop an idea'."* —Resident
>
> *"What we're probably going to do is get a contractor in when it's next dry to do a bit of digging around, and see if he can find the membrane, see what state it's in, what's going on and see if he can fix it."* —Resident

In the cases studied, outside specialists were hired to construct hard landscapes and technical elements such as a path made from a specialist permeable material, retaining walls, SUDs systems, topographical regrading and planting plans, and specialist maintenance, pruning large trees and managing building services. All the groups worked with design professionals, including Architects and Landscape Architects, to design the site, facilitate planning applications and coordinate the build. Although getting in outside specialists allowed residents to construct the more complex and technical aspects of the site, the output didn't always reflect what the group wanted. In a case where residents had asked a garden designer to produce a planting plan to help them make a quicker decision, residents felt disappointed that this didn't reflect the group's vision. A further challenge with hiring outside specialists to construct technical landscape elements, such as specialist SUDs systems, as residents could not fix or maintain them themselves when they went wrong. This happened in Timber Lane when the central water retention pond developed a leak over time. As the membrane for the pond was made from specialist material, residents had to bring back in the expert contractor to fix the leak, costing them additional unexpected money. This reinforced findings in previous research where residents felt left out of design decisions and lost their influence in shaping the outdoor space (Scanlon and Fernández Arrigoitia, 2015) or that the ethos of the professional didn't align with those of the community (Devlin, Douglas and Reynolds, 2015).

Professional roles

A participatory approach to design is well recognised as an important part of cohousing development to ensure the design adequately responds to residents' needs (Chatterton, 2013; Devlin, Douglas and Reynolds, 2015; Ruiu, 2016a; Hammond, 2018) and for promoting a sense of community and developing decision-making processes (Ruiu, 2016b). However, as Hammond highlights, *"there is a lack of critical understanding of participatory design within the cohousing field beyond the notion that cohousers should be 'involved' in the design process to some extent"* (2018, p. 4). Of particular interest to this research was the role of the design practitioner in enabling residents' participation in the design and implementation of shared spaces. Fernandez Arrigoitia and Tummers (2019) describe a critical professional mediating role described as 'middle agents' or 'mid-way developers', which can transform

collaborative housing provision and highlight design and built environment professionals as one of several currently occurring filling this gap. The 'middle agent' role requires design practitioners to expand beyond their traditional role as a technical expert to that of social facilitator to empower residents in the design process (Riseborough, 2013). The three design practitioners interviewed in this research, one architect, one landscape architect and one resident-architect, described several different roles and ways of engaging residents in the design process or wearing *"several different hats…to do a number of different things"*. These multiple roles for design practitioners involved in cohousing are described in the patterns for practitioners**: 67. Get to know the group, 68. Expanded scope, 69. Technical advisor, 70. Group facilitator, 71. Go-between,** and **72. Design for adaption**. These patterns are outlined in the following paragraphs, providing a more detailed understanding of the specific roles of design practitioners as 'middle agents' in cohousing.

Get to know the group

Developing good relationships with the community group at the early stages of the design process was highlighted by the designers interviewed to understand the end-users' perspectives and engage with them in the design process. One strategy adopted by two of the cases studied was to draw upon their existing contacts, either outside or within the group, to bring on board design practitioners with who they were already familiar. In the case of the landscape architect, they were asked to put together a design for the outdoor spaces as a friend of the group, and a resident-architect, who was already a group- and family-member of the cohousing group. By contrast, in [Redacted], residents took a more traditional route of putting out the design for tender, which involved several different architects submitting an outline design based on a written community brief to demonstrate how they would approach the design. The architect who was chosen for tender explains:

> *"The brief was outline. It said 'looking for [a number of] dwellings, sustainable cohousing setup', how many people were involved, and the idea of what the site was. That was pretty much it. From what we got to tender…we had to come up with a couple of site responses, which helped them choose the architect…[We] were quite reluctant to design something without talking to the people…I find that a little bit problematic."* —Design practitioner

> *"We had a shared meal and it was just really nice, there was lots of little details that he set out little napkins and things like that, which gave a very warm collective feel to it…[The architect] had a great sense of who we were, how we wanted to live together and how we wanted to make decisions. [They were] very sympathetic."* —Resident

In this case, where the architect was not already familiar with the group, after being chosen to tender the architect **67. got to know the group** before starting to design by hosting a **shared meal (33)** for the community. This provided the architect with the opportunity to talk to individual residents and ask them to fill in a survey to capture their aspirations for the design. The residents described

feeling the architect had a good understanding of the group. Getting to know residents personally allowed the architect to further develop a brief for the design by getting residents to reflect on their aspirations for how they envisaged using the site. Further to this, by getting to know residents' interests and skills, the architect understood what parts of the site residents would be able to and interested in building themselves and designing structures and spaces they knew residents would be capable of finishing and adapting themselves.

Technical advisor

> *"They needed someone to…have an understanding of planning and materials and cost of things, and then produce a plan that they could base these things off…most of the group, they wanted landscape experience to really help and drive what was achievable…understanding the levels…"* —[Redacted] practitioner

Another key aspect of the design practitioner's role remains giving specialist and technical design advice. In the cases studied, this included appropriately responding to site constraints and planning restrictions, such as minimising the visual impact for neighbours, identifying easements, knowing native plant species, understanding topographic levels and drainage, specifying hard materials, dealing with soil contamination and producing technical drawings. Although developing technical design solutions are a core tradition of design practice, how that information was delivered to communities in this research was in an advisory capacity. This included presenting different design options and their implications, justifying design decisions, and giving residents technical training, such as reading a plan, understanding scale drawings, and other standards for sustainable building. This approach allowed residents to have a more informed and active role in making or influencing technical design decisions, and as one resident described, *"it didn't feel like an expert was coming in to tell us what to do."* This is underpinned by the skill of the design practitioner to not only explain *what* the potential design outcomes are but *why* and *how* they are made. This was achieved in the design practitioner's role as a group facilitator.

Group facilitator

Involving residents in the design process required design practitioners to take on the role of a **group facilitator (70)**, described by Fernandez Arrigoitia and Tummers as *"'social facilitators', the additional professional skills required concern[ing] communication and decision-making"* (2019, p. 353). A resident [Redacted] described how the group could not articulate their vision of the site to each other: *"at that very early stage we all had unarticulated visions of what it would look like, how [the outdoor space] would be."* The architect [redacted] developed a series of workshops to engage residents in the design process (figure 6.27). This included enabling the group to visualise their shared vision using precedent image prompt cards. The architect also experimented with various ways of allowing

residents to give feedback, adapt and interact with the design. This included marking feedback onto design options, interactive massing models, post-it note comments, precedent prompt cards, 1-to-1 massing of buildings using helium balloons and giving residents the SketchUp model. A key follow-up stage to getting residents to feedback in this way was to ensure their input was then presented back to the group to understand how the design had progressed in response to their input. Two of the three design practitioners interviewed mentioned the advantages of how residents had become experts over time as a result of this participatory approach, also described by Riseborough as helping *"participants to 'become the experts' by providing the right amount of information"* (2013, p. 5).

Figure 6.27. *A workshop was held by a design practitioner to understand the group's vision and preferences (photo taken by a design practitioner participant)*

The go-between

In advising cohousing residents on the technical aspects of design, design practitioners act as **a go-between (70)** the community and planning, legal or other regulatory frameworks. For example, in [redacted] the architect engaged directly with the local conservation officer to ensure the design of new buildings was sensitive to the local area's characteristics. In [redacted], the group were unaware they would need planning permission for the landscape works they hoped to do. The Landscape Architect played an important role in adapting the scope of works to include a planning application plan and communicating to residents the planning requirements for the site. At [redacted] cohousing, the architect was able to negotiate a later stage for deciding and implementing the landscape planning requirements with the local planning department, which allow residents a greater timeframe to consider how they wanted to design the site after they had moved in, as described below.

> *"The landscape scheme was left as a notional thing because we didn't know what we were going to do with it...I've since got permission from [the local planning department] to extend the timeframe on [submitting the landscape design for planning] a bit longer, because we said the people moving into these to have more of an input into the design of the courtyard...I think really what we'd like to do is for them to move in and sort of just experience it for a little while before we confirm exactly what we're going to do, and then we'll get on with it."* — [redacted] practitioner

Having experience working with local authorities and awareness of council and planning issues give cohousing specialists a *"unique perspective allow[ing] them to steer and communicate with different kinds of stakeholders."* (Fernandez Arrigoitia and Tummers, 2019). As such, design practitioners can *"act as 'middle agents' between residents' vision and the requirements of the house planning and building system"*. This is echoed in this research where design practitioners work between these two worlds, facilitating residents' involvement in the design process, informing residents of the necessary building codes, planning requirements and technical solutions, and negotiating with local authorities to better suit cohousing communities' needs.

The above example demonstrates how the practitioners understanding of the planning system allowed them to negotiate some of the timings to suit the group; it wasn't always possible to make the planning regulations work to suit cohousing in this way. Several communities attempted to negotiate the number of parking spaces required per house, down from two to one, based on the argument that the group would implement car sharing agreements; however, most were unsuccessful in this. This was due to concerns from local authorities that if residents didn't adopt car sharing, this would create additional demand for on-street parking in the local area, particularly when visitors came to the site. This was instead negotiated by demonstrating how the total required number of parking spaces could be accommodated on-site, suggesting that residents could temporarily adapt the hard surface car parking for other activities. Although mandating high levels of car parking in cohousing seems counterintuitive when the group are aiming to reduce their car use, in practice, reducing car parking remains a challenge in cohousing due to difficulties finding realistic and practical ways to implement car sharing. Therefore further examples of successful car-sharing projects may be needed to convince local councils to reduce required car parking spaces. No different examples of this conflict have been identified in the literature, although other cohousing projects experiencing similar discussions around cohousing are mentioned on cohousing websites and planning documents, indicating wider relevance.

Expanded scope

> *"[The architect] rang up one day and said 'there's this property, it's just come on the market, it would be much more suitable than [the other property], let's go and have a look at it'…we came round and had a look at it and I thought it was very dark and overbearingly enclosed by trees and it looked a bit like a massive project, so I didn't have the vision, but [the architect] did, because they've got a different sort of spatial awareness…"* —[redacted] resident

The broader range of skills and roles required of design practitioners engaged in cohousing developments demands an **expanded scope (68)** for involvement before and after the design and planning process. Several architects write about their experience working with cohousing groups at this earlier stage, including helping to define the scope and values of the project (Hammond, 2018), identifying the site (Devlin, Douglas and Reynolds, 2015), and working with municipalities to create more opportunities for cohousing (Fernandez Arrigoitia and Tummers, 2019). Hammond explains, *"by challenging the idea of the architect solely as a building designer, spatial agency also opens the opportunity for architects and cohousing groups to collaborate at a much earlier stage of development…"* (2018, p. 5). The design practitioners involved in the cohousing cases played a role in identifying potential sites, sources of funding, partners and suppliers. In the case of Timber Lane, the architect played a pivotal role in finding and applying for sustainable housing grants that were instrumental in getting the project off the ground. Grove Villa worked with an architect who identified their site as it came on the market and developed a feasibility study for them to purchase it. At Cobble Yard cohousing, the architect was highly involved in scoping out and identifying potential sites both as a group member and from a professional perspective. In understanding the potential pitfalls of getting planning permission for a cohousing development, the design practitioner was able to identify a site with existing residential planning permission and then negotiate the purchase of the site with a condition on them getting outline planning permission.

> *"The whole process was very, very long and massively [more] time than we could ever have charged for."* —Design practitioner

Although additional input at the early and later stages of development can be beneficial for cohousing communities, it can also lead to 'scope creep' or unexpected additional time and cost for the designer. For example, one architect held a series of design workshops and social events over several months and maintained contact with the group over several years during construction. The architect describes approaching the project, knowing that the cohousing project would require additional input and time. Despite anticipating the extra time required, the project became even more time-consuming and complex than expected due to the group's decision to have individualised housing layouts and subsequently relaying individual design decisions from multiple residents to the building contractor.

> *"I could well imagine, with a [cohousing] group, th[ere] could be…a lot of opinions…[the scope of works] was very structured because I knew if I'd done it from a freelance point of view that would have gone out the window because it's like 'I'm doing this for a mate'…We talked about contracts and their expectations of us…We sent them back quite a strict fee proposal so it was very clear on what we can produce, the time that we would give in terms of meetings…we were really clear on what we were going to provide… I'd like to have more time. When you're limited on fee and time that becomes restrictive in getting the right information out of them and then producing the drawings and too-ing and fro-ing."* —Practitioner
>
> *"I was really keen to have a bit more of a consultative time with [design practitioner]…which they did partly…I thought [the designer] would just help us by coming along lots…but [they] didn't really, [they] just set up a contract and we had a few nuggets of their time…"* —Resident

Freelance, independent and resident-practitioners had more freedom to accommodate and justify 'scope creep' at the cost of their own time because they were driven by their commitment and interest in the uniqueness and worthwhile nature of the project. By contrast, one design practitioner was cautious of the potential for the time and input required to snowball over time, particularly as it might be expected of them as a friend of the group. As such, they decided to undertake the work through a larger design practice rather than a freelance basis, allowing them to put a contract in place outlining a more concrete scope of employment, working hours and budget. A strict scope outline was beneficial for the group in having clear expectations of the costs and work produced by the landscape architect, whereas other groups complained of spiralling costs and uncertainty on how much the overall spend of the development was. However, it also left less scope for the design practitioner to play a facilitative role. One resident felt disappointed by the lack of 'consultation' with the design practitioner as they had expected them to visit more frequently and hold more participatory design sessions, highlighting a disconnect between the cost of the additional time required of design practitioners and residents' willingness or ability to meet those costs.

Fernandez Arrigoitia and Tummers (2019) describe the tensions between the need for design practitioners to work efficiently to keep their professional costs down and cohousing communities involved and the time-consuming consensus decision making process. Being the 'middle agent' "*requires factoring in the time needed to 'translate' information and reconcile different design criteria"* (Fernandez Arrigoitia and Tummers, 2019). However, they also highlight that cohousing groups see professionals as *"an additional unnecessary cost"* (Fernandez Arrigoitia and Tummers, 2019) and therefore don't budget enough money for the time and input required of the architect to involve residents in the design process. Hammond echoes these concerns; *"architectural expertise at such an early stage of the development process presents a number of challenges, including how such a collaboration can be funded…"* (Hammond, 2018, p. 10). For design practitioners, who are a friend of the group or feel a commitment to their ethos, may feel additional pressure to donate their time to the cause, which is financially unsustainable in the long term.

Picture in many ways and mock-ups

> *"The key is making [sure] everyone's on the same page…so we all know what we're saying, so we're not coming in saying something that can be misread by people."* —[redacted] practitioner

Communicating spatial ideas with external design practitioners and between residents requires **picturing ideas in many ways (8)** so that different people can understand (Devlin, Douglas and Reynolds, 2015). As Riseborough describes in their experience working with cohousing communities, *"we decided to use a mix of facilitation and learning methods with short bursts of factual information, all geared to enable participants to use their imagination and discover ideas for themselves"* (2013, p. 5). One interviewed practitioner described the challenge in residents interpreting drawings differently than was intended. It is challenging to understand how other people interpret drawings and accurately represent the spatial idea. This can lead to miscommunications and disappointment further down the line when the group envisioned the space.

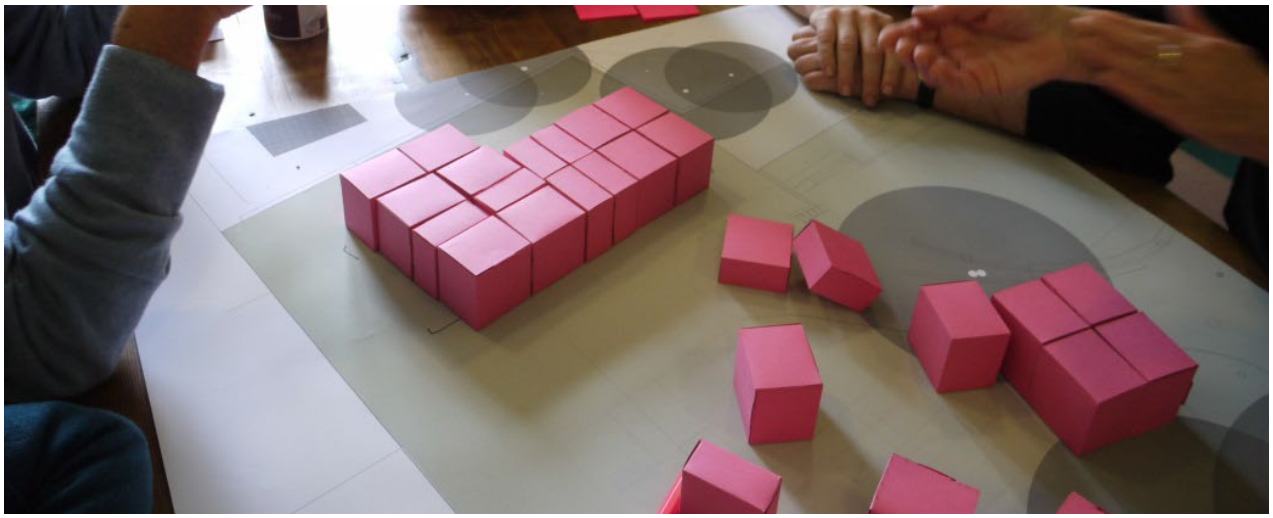


Figure 6.28. *A workshop using paper cubes to mass out different housing layouts on the site (photo taken by a design practitioner participant)*

> *"We didn't produce any sections, just a plan for them…You could see that some people were a bit frustrated or didn't quite understand what we were suggesting…it was a case of sitting in a meeting and drawing a section for them to really understand what was happening with the levels and particularly where the tree roots would be, getting access."* —Practitioner

For example, the above design practitioner describes the limitations of traditional plans for communicating spatial ideas. In this case, there became a need to explain the topographic levels and the knock-on effect these were having on access to residents' homes and existing tree roots. Due to the limited fee and scope, the practitioner could not produce various drawings but found it necessary to draw sections during meetings to communicate the different levels around the site. By contrast, two other design practitioners interviewed used a wide range of ways to visually present design ideas,

including physical models, precedent images, 3d visualisations, and **1-to-1 mock-ups (23)**. Small scale models were particularly useful for residents to grasp the reality of the intended massing and form (figure 6.28) and unexpectedly engage residents in using the model itself to visualise and plan how they would inhabit the spaces in the future.

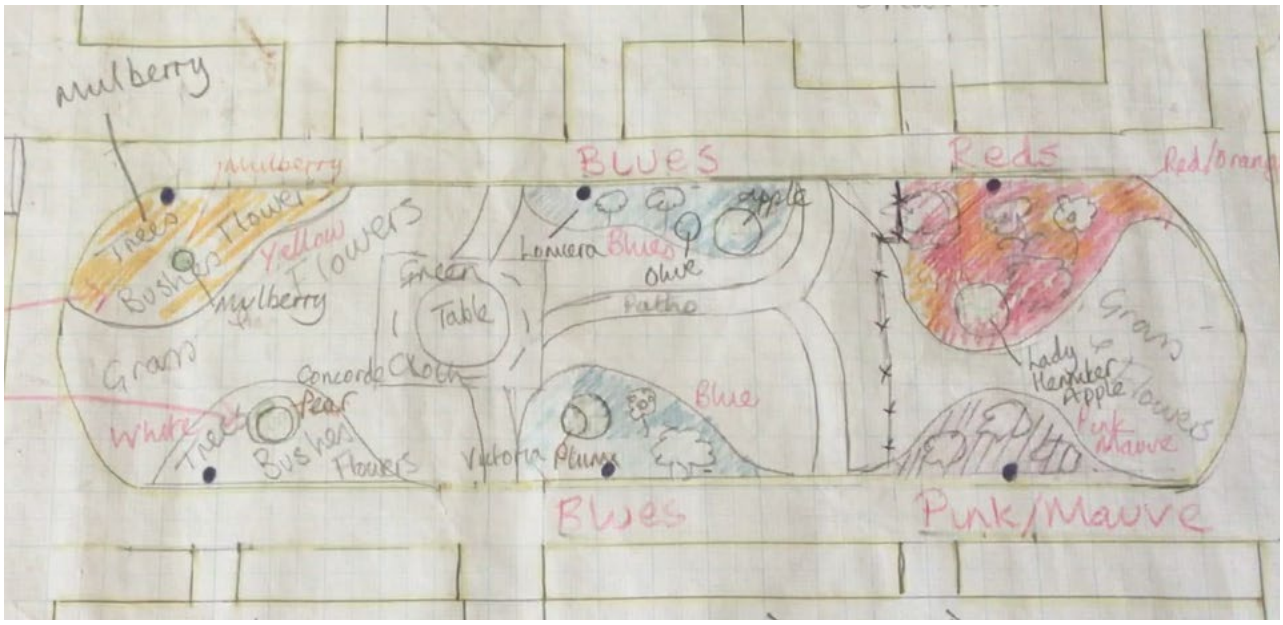


Figure 6.29. *A sketch was made by a gardening working group to plan out their planting of the central green traced over the architect drawn plan.*

> *"The plan...will hopefully become our working document. The idea is to use this to think and plan for what we want to develop in the gardens and grounds...and make changes as we go along and after further continued discussion."* —[Redacted] resident

This research also found that Cohousing communities reused practitioner-produced drawings as a base to create their drawings and design ideas. Site plans were used to pin up the community noticeboard and get feedback and ideas from other residents. Such plans become a working document for the group to communicate and layout their suggestions and proposals over time. When residents were deciding how to build, adapt or plant up the site once the key infrastructure had been built, the plans, images and other drawings produced by design practitioners became a useful base for residents to plan out and make decisions together. For example, Timber Lane used the base plan to trace over and plan out the planting in the shared central lawn together (figure 6.29). Further to this, residents also reused design communication techniques by design practitioners to communicate their own design ideas within the group. For example, at Poplar House, the design practitioner had used helium balloons to mark out the heights of buildings for residents to visualise at a one-to-one scale on-site. Later, a small group of residents at Poplar House decided to use a similar **mock-up (23)** method, using string, outlining the size of the new bin/bike store and workshop they were building themselves. This allowed residents to adjust the bin/bike store's planned height in response to feedback from other

residents. These examples further highlight the transfer of knowledge, in this case, participatory design visualisation methods, from design practitioners to the cohousing community.

Contributions of DIY / expertise tension to cohousing knowledge

This research identifies how residents build and share knowledge in multiple ways; by sharing and creating knowledge within the group, sharing knowledge horizontally with other cohousing networks, and outside the group through intermediary organisations and networks. This reinforces Ruiu's research on social capital in cohousing, which identifies bonding relationships within the community, bridging relationships outside the community and linking relationships with other cohousing groups (2016b). Although high levels of resident participation are often described as a defining characteristic of cohousing, the cases revealed that this isn't guaranteed. A balance between informal volunteering and formal activities is required to enable involvement from a wider spectrum of residents.

Furthermore, this section provides insight into the role of design practitioners as middle agents in cohousing (Fernandez Arrigoitia and Tummers, 2019), particularly in their capacity and limitations in negotiating the planning system. In doing so, it outlines five key roles for design practitioners that build upon research looking at the participatory design process in cohousing (Devlin, Douglas and Reynolds, 2015; Ruiu, 2016a; Hammond, 2018). This section concludes by highlighting the importance of communicating ideas in a variety of ways, and the tension this and the additional facilitatory and expanded scope roles creates with the extra time and costs this makes for practitioners and residents, as Fernandez Arrigoitia and Tummers (2019) also found in their research.

6.4 Insider / Outsider

Figure 6.30. *Patterns that promote varying levels of internal cohesion and external connection with others.*

The tensions between strong internal community relationships and integration with the wider neighbourhood and beyond are described in this section through controlled yet open spaces and temporal hosting of outside people and groups. As discussed in the previous section, the cohousing cases studied demonstrated various types of relationships within and reaching

outside the community. This research reveals tensions between creating strong communities with access to protected shared spaces and remaining open to and integrated with the wider neighbourhood and urban context, which are presented physically in the site's layout and socially in the accessibility and organisation of the group. This tension is explored through patterns that deal with the site layout and boundaries, membership requirements, temporary events, and other forms of wider engagement (figure 6.30). Patterns enabling this resolution include those that promote a desire to remain open and create points of connection, if only temporarily, including **value in diversity (3), point of contact (42)** and **open gateways (56)**.

Becoming a cohousing resident

> *"The money we paid over was our reserves. [Several residents] made themselves homeless, they'd sold their houses to be able [buy into the project]...everything we had, <u>everything</u> was put into this house on the prospect of being able to sell these various flats. We become developers but with our own property at risk all along the way."* —[redacted] resident

Developing new cohousing schemes is expensive and risky, limiting who can get involved, particularly at the initial development stages. As discussed in section 6.3, many cohousing communities in the UK, including the cases studied in this research, choose a resident-led approach to development, requiring residents to raise substantial amounts of funding in the initial stages to acquire land and construct or renovate properties. Although some of the groups in this research were supported in part by government grants, nearly all the cohousing groups used the sale of their own homes and lent money from the bank to fund the development. Residents describe how this required them to take on large amounts of risk, which in some cases left them temporarily without a home or struggling to complete parts of the development. This was also reflected in the literature, highlighting that England's cohousing is mainly self-financed with the support of commercial bank loans, early-stage public grants, and in-kind contributions (Lang, Chatterton and Mullins, 2020). Scanlon and Fernandez Arrigoitia highlight that commercial developers are rarely willing to partner with cohousing communities in the UK. Therefore group members have total control over the development process but take on all the risk and financial commitment (2015).

> *"As our family has all left and grown up and we've got grandchildren, [moving into cohousing] seemed quite an ideal thing to do. We downsized from quite a big house [and we were] looking for a slightly smaller location."* —[Redacted] resident

The upfront costs to cohousing development and risks involved remain a potential barrier to those without substantial financial backing and willingness to take on such risk (Williams, 2008). The research implied this by the demographics of the residents who took part in the study and their stories of joining a cohousing community. The surveys taken were not representative of cohousing population

demographics but captured an understanding of the participants who chose to participate in the research. Even so, the surveys reflected the general narrative of cohousing communities as being predominantly older, well-educated and in middle-earning professions (Williams, 2008; Ruiu, 2014, 2015; Tummers, 2016). From its inception, residents who were involved in the group were most often retired or semi-retired from professional backgrounds (see Table 4.2). The retired professional demographic can partly be explained by residents' availability and willingness to be interviewed, alongside their motivations for joining cohousing to seek more supportive living environments as they get older. However, residents interviewed revealed that to join cohousing, they had to quickly raise funds from the sale of their homes to buy the land when it became available. They also described how others who couldn't immediately 'buy-in' into the project when the land became available dropped out at this stage. Except for one case, which received a substantial one-off government grant, the cases demonstrated that residents in an older, higher-earning professional demographic could finance this risk through the existing homeownership. This research reinforces that at the moment, in addition to *"only those who value the returns very highly (i.e. those who are strongly ideologically committed) will choose to become involved with and continue to be committed to cohousing"* (Scanlon and Fernández Arrigoitia, 2015, p. 120), successfully becoming a cohousing resident at the early stages requires the financial backing to take that risk.

As groups came towards completing the building phase of the development, there became further opportunities for a wider range of people to join, such as buying shares or a leasehold for newly built homes. After the construction phase, joining was less risky and more accessible for younger couples and families [redacted]. However, buying, leasing or renting a dwelling in these cases was not necessarily considered affordable, particularly as these cases were in more affluent neighbourhoods. Only one case described themselves as being affordable to working people, achieved through an ownership model linking the cost of housing to the member's income, made possible in part to being given a one-off start-up grant. So far, this has been difficult for other groups to replicate. This research reinforces the view of cohousing, particularly in the initial stages, as unaffordable to all but those who can afford to take on the financial risk involved (Hacke, Müller and Dütschke, 2018). Therefore questions remain over how cohousing can benefit a wider range of people; as Epting highlights, *"the bigger problem is that people who could use cohousing to improve their lives cannot access it"* (2018, p. 136). This is further emphasised by Ruiu, who suggests *"[t]he higher costs [of cohousing] may represent invisible barriers that avoid the access of disadvantaged people"* (Ruiu, 2016b, p. 409).

> *"[Two of the founding members] have got lots of contacts, they're sort of network-y people, especially [one], that's what [they do]. And the architect is part of [that resident]'s drinking network…"* —[Redacted] resident

> *"A friend of ours [a design practitioner] I knew [them] a bit and we invited [them] round just to come and have an informal look around really."* —[Redacted] resident

As discussed in the previous section 6.3, cohousing development requires access to knowledge and resources to negotiate the various complex legal and planning frameworks involved in a housing development (Tummers, 2016). As highlighted previously (Lang, Chatterton and Mullins, 2020), cohousing residents use 'in-kind contributions' where possible, such as pro-bono work, favours and discounts through existing contacts. Residents in the planning and development stages frequently reached out and leaned upon networks of professional contacts, including **family and friends**. This included design practitioners who could give initial free advice and friends of the group who were willing to share their time to help them with general garden and maintenance tasks. Residents' contacts were often formed from their professional networks, giving them access to additional knowledge, skills, and beneficial partnerships with people they had already built relationships with. Access to expertise and resources through networks and contacts in cohousing is necessary for new cohousing groups as it remains a complex and unconventional model in the UK, and groups often have limited funding available. However, this requires that cohousing members already have access to various professional and personal networks and obtain professional knowledge from them, framed as a form of 'linking social capital' in cohousing often associated with higher levels of economic capital (Ruiu, 2016a). Therefore a lack of social capital is a potential barrier to joining cohousing during the early stages of development.

> *"It's about politics and values and not wanting to live in a nuclear family, not liking the way that the economy manages private ownership of property and wanting to live in a different way and make that work…I just like the idea of sharing with people that I liked…living with a chosen group of people who were friends, who were more supportive and sharing than just good neighbours."* —[Redacted] resident

> *"I went out into the courtyard and talked to [another resident]…who is also a member of [an activist group], and in 5 minutes I was completely energized, we were both saying 'right, this is what we will do'. And it will now happen. We'll get something off the ground and we'll get other people involved. And that's really exciting just to be able to organise something very casually that's dear to my heart and that I couldn't do on my own."* —[Redacted] resident

For some of the residents interviewed, joining cohousing was an expression of their political views and values and an opportunity to practice pro-social and environmental behaviours with others. In this way, the combination of sharing resources and living with like-minded people allows residents to manifest their views and values through a chosen lifestyle. This was the case for the residents quoted, which reinforces that although residents within cohousing express a range of personal views, in some

cases, their motivations for joining cohousing can arise from a preference to live with a chosen kind of neighbour (Chiodelli, 2015). Residents, therefore, may not see the lack of diversity in viewpoints in cohousing as a problem, but rather living among similar social groups as an advantage or even the attraction of cohousing (Axelsson, 2014). While this is known to help create a sense of identity within the group and aid in decision making (Sargisson, 2010; Chatterton, 2013; Tummers, 2015, 2016), this homogeneity can also act to segregate the community from institutions and outsiders who do not share those views (Ruiu, 2016b). Williams highlights that other people who do not share similar values to those in the cohousing communities would be unlikely to join because *"they would [feel] socially and culturally isolated"* (2008, p. 272).

> *"We had a core of [...] households who'd all known each other for [...] years and had a very high level of trust and were all involved from the very beginning in this scheme...We took a lot of things on trust, legal and financial things."* —Resident

> *"my partner [...] was involved in [the cohousing project] for a couple of years before it came into being ...we had some friends who were involved, that's how [my partner] got to hear about it, and then gradually started going to the meetings...although I didn't move in until [later] I was still here quite a bit anyway, and still doing things like joining in with landscaping sessions and stuff like that from the start."* —Resident

The recruitment process in cohousing aims to make prospective residents aware of the group's ethos, expectations and responsibilities so that residents can decide if it is the right place for them. In this research, cohousing communities formed around '**a steady core' (5)** of long-term residents with high levels of trust and understanding, made up of extended family members, long-term friends, or strangers who shared similar interests and ambitions. Having a smaller core group of members in the initial forming stages was beneficial for residents for managing early decisions and establishing a clear ethos and approach. However, when cohousing communities reach the stage where they need to finance the build, it becomes necessary to recruit further members to buy into the project and to replace residents who leave. Therefore before joining, residents are expected to visit during open days and participate in working days and community events to get to know the group and gain an insight into community life. Being involved in the group before joining permanently allowed residents to see if they were a good fit for the group. This reinforces the understanding that the compatibility of new residents is important to both the community and prospective members to facilitate decision-making and day to day living (Fernández Arrigoitia and West, 2020). In this way, residents are expected to agree to community policies and meet the financial requirements in advance to form a mutual agreement between the community and prospective members (Chiodelli and Baglione, 2014; Brenton and Argent, 2020).

> *"...[Previous members] they got so anxious about moving, and was their space going to be like this, or would they have enough money, would they be overlooked, would it be noisy...People who get anxious in this process can't survive in it, they leave...they couldn't cope with the decision making and the uncertainty and the stress and the risk it does weed out people a bit...some people just can't cope with what it involves really."* —Resident

This research reinforces the idea of cohousing communities as **self-selecting groups (4)**, a process that inevitably filters out noncompatible members. One resident describes how previous prospective residents left the group when they realised, they didn't want to take on the risks involved in cohousing during the membership process. Despite this, several residents highlighted the **value in diversity (3)** when describing wishing to live with a variety of people, the importance of having a range of different ages and skills in the community, and an ambition to make cohousing more accessible to a wider range of people. Chiodelli notes this apparent conflict; *"notwithstanding co-housers' good intentions towards diversity and integration, the idea of creating a close-knit community naturally leads to a search for affinity with residents in terms of preferences, values and attitudes"* (2015, p. 2573). Williams (2005a) challenges this assumption by highlighting increased diversity in age and income in a cohousing case that was beneficial in terms of social interaction and encouraging a wider range of activities and relationships, despite residents sharing a similar mindset.

Relationship with the wider neighbourhood

[Image redacted]

Figure 6.31. *A railing topped wall separates the cohousing site from the neighbouring houses.*

The spatial qualities of cohousing communities have been criticised for being 'introverted' and convened for members' enjoyment only, disconnecting the development from the surrounding area (Axelsson, 2014; Chiodelli and Baglione, 2014). At the neighbourhood scale in this research, the cohousing developments' aesthetics, layout and organisation contrasted with the surrounding neighbourhood. As well as having inward-facing arrangements, as has been previously discussed, defined boundaries around the cohousing site in the form of walls and fences were a common feature in the cases studied. Figures 6.31 and 6.32 illustrate how the retaining walls and fences separate the

cohousing sites from their surroundings, limiting the outward-facing presence on the street. Further to this, the use of sustainable materials, unconventional construction methods, naturalistic planting and recycled elements in the outdoor spaces create an unconventional aesthetic that differs from the more traditional architecture of the surrounding areas. This was noted [redacted], where the flat rooves and timber cladding of their eco-homes aesthetically contrast with the typical brick, pitched-roofed semi-detached housing surrounding the neighbourhood.

Figure 6.32. *The boundary retaining wall surrounding the cohousing site provides little views in or out of the site.*

Cohousing communities rely on forms of 'natural surveillance' such as having a high rate of people present, good relations with their neighbours, and central overlooked common spaces to create a sense of safety rather than using more physical barriers of locked gates (Ruiu, 2014). Natural surveillance was employed by many of the case studies to create protected internal areas of the site where residents felt comfortable leaving things outside. However, several cases chose to temporarily lock entrance gates in response to vandalism, theft or visitors driving through the site, which had occurred in areas that weren't overlooked by residents. At Timber Lane, the community occasionally experienced vandalism and anti-social behaviour from people who used the corner of the site allocated as a publicly accessible space. The community decided to lock the space at night and for a few days after any incidents, to deter unwanted behaviour. [Redacted] had also chosen to lock their main entrance gate at night to deter thefts from outbuildings and leave it closed but unlocked during the day to slow down cars entering the site. In line with Bouma and Voorbij's findings (2009), several communities had safety systems for entering the common house. Although natural surveillance allowed cohousing communities to retain some level of openness to the outside, the experience of threats to the community, such as theft or vandalism, prompted communities to become more

enclosed and protected, at least temporarily. Therefore, unlike public space, cohousing communities retain flexible control over who has access to the site and when.

> *"Sometimes it feels like it's easy for people to complain about stuff here because we're a bit of an institution. You can feel that you're not complaining about a person, your neighbour, you're complaining about a thing, which is easier to do."* —Resident
>
> *"We wanted to [have] a more normal relationship with our neighbours and not be like this benefactors that invite people on to their estate"* —Resident

The cohousing cases were further disconnected from the neighbourhood by the perception of their organisational structure as institution-like. Several residents from different cases noted how the perception of their cohousing group as *"an institution"* or *"benefactor"* rather than as a neighbour encouraged a more formalised relationship with neighbours. Some residents felt that this encouraged neighbours to submit their concerns as formal complaints rather than meeting to discuss this on a one-to-one basis and that it challenged establishing more normal neighbourly relationships with the surrounding community. This supports Axelsson's (2014) description of how the view that cohousing is different and separate from other traditional forms of dwelling is potentially problematic, isolating cohousing communities from surrounding neighbourhoods and communities. Although cohousing groups, including the cases in this research, often had the intention to integrate with, and have a beneficial impact on, the wider community (Ruiu, 2014), conflicts between cohousing communities and their neighbours are not uncommon. Ruiu (2016b) highlights that most cohousing communities in England faced initial opposition from local authorities and their surrounding neighbours. The planning and construction phases of cohousing development were particularly contentious with the neighbours of the cohousing communities studied. This included concerns about the impact of the new development on their views, the removal of trees, noise of the construction, responsibility for maintaining boundary fences or trees, and that it wouldn't be in keeping with the area. Groups had attempted to avoid these conflicts by holding consultations with neighbours beforehand, which, although they were generally described as a positive experience, weren't always successful in alleviating the individual concerns or conflicts of neighbours.

The insular characteristics of cohousing described above have led critics to align cohousing with 'gated communities' and question their wider benefit to wider society (Chiodelli, 2015). The defined boundaries, ability to lock gated entrances, internal organisational structures and membership processes described in the cases studied highlight some of the similar characteristics cohousing communities share with gated communities. However, this research concurs with Ruiu (2014), who argues that the outward-facing intentions of cohousing communities set them apart from their gated counterparts. The findings of this research highlight several outward-facing patterns cohousing communities have implemented to counteract the challenges of cohousing cases in integrating with

the surrounding community and wider urban area. These include **open gateways (56), public access (57), good neighbours (41), neighbourhood events (46), open days (45), hosting (47), online platforms (38)** and **point of contact (42).**

> *"This is one of the areas that is quite controversial for us, whether we have a gate or not. We do have a gate, but we've had a lot of discussions about whether we wanted to be...a gated community, but we did end up with a gate for various reasons, we've had a couple of break-ins on the sheds and things, so having a gate closed at night we think discourages people from doing that."* —[Redacted] resident

> *"So the park is open to the public, but it's not open all the time. We've been leaving it open during the day and then locking it at night...The reason that we lock it is because there are occasionally fires, or recently somebody was in the polytunnel and smoking...So we can open and close it when it suits us."* —[Redacted] resident

[Image redacted]

Figure 6.33. *The main entrance to the site has no gate to allow visitors and public access.*

The cohousing cases studied used **open gateways (56)** to allow pedestrian access to or through the site to prevent the impression of a gated community while retaining the flexibility to adapt and control access when needed. Three cohousing cases used gates in some way to enclose or restrict access to the site, either to prevent car access or to discourage antisocial behaviour and theft. However, all these cases left gates open and unlocked wherever possible, only choosing to close or lock gates to pedestrians at night or after crime incidents. Where gates were closed to reduce access to cars, side pedestrian gates were left open. Furthermore, Timber Lane allows **public access (57)** through the site, acting as a cut-through by leaving gates open where possible (figure 6.33). In addition, Timber Lane was the only case that had a designated 'public' space on site as a small open space designated for 'public' use during the day, mostly used by neighbours for dog walking. The location of this public space at the edge of the site posed a challenge as it was not overlooked by any of the cohousing dwellings, allowing more antisocial behaviour to occur in this space. This finding reinforces the need

for natural surveillance in cohousing, not only to protect shared community spaces but particularly in areas designated for public access.

> *"Many, like Sandy, felt that erecting a fence and gate would protect their privacy while leaving the gate open would send the message that Sunrise Place remained part of the surrounding neighbourhood…By agreeing to leave the gate open, cohousers were able to strike a balance between their desire for privacy and their ideal that communities should be open and inclusive."* (Sullivan, 2016, p. 617)

Figure 6.34. *An annual bonfire night event that friends and neighbours are invited to attend.*

> *"We just joined the [neighbourhood] festival and we did a yard sale. So we have people coming who hadn't met us before and they were really excited and interested and we showed them round and we've had coffee mornings"* —Grove villa resident
>
> *"We did have some little garden parties in the park and things like that…because we were very new and people were curious and then we wanted to become a more normal relationship with our neighbours and not be like this benefactors that invite people on to their estate. So we stopped doing that."* —[Redacted] resident

The shared spaces in cohousing communities can act as semi-public spaces accessible to people outside the group (Sargisson, 2010; Jarvis, 2011; Ruiu, 2014). Cohousing groups held **neighbourhood events (46)** and **open days (45),** which temporarily made the site accessible to the wider public. Examples of neighbourhood events include having an annual bonfire night (figure 6.34), 'yard sale' as part of a wider neighbourhood festival, coffee mornings, music nights, 'little library' book exchanges and garden parties. Some cohousing groups had open days and events during the planning stages and after first moving onto the site as a way of meeting neighbours. However, one resident [redacted] spoke of wanting to move away from more formal neighbourhood events and open days, as they felt such events reinforce the group's view as a 'benefactor'. Instead, they suggested that it is more beneficial to build more normal one-to-one neighbourly (41) relationships in the longer term. As a more established cohousing community, residents at Timber Lane have built up good relationships with some of their neighbours through their shared interests in gardening or through children's school

friends. Interactions with neighbours include swapping seeds and produce and inviting children around to play. Although cohousing appears to be particularly contentious during the construction phase, this case demonstrated how cohousing residents can develop good relationships with their neighbours over time. This idea is supported by Ruiu's (2016a) experience of the threshold centre, where after receiving initial disapproval from local neighbours, hostility from surrounding neighbours decreased over time as the established group found ways to integrate with the surrounding area.

> *"We also attach work morning to an [open day]…That means people can come get a free place as well…Mostly people who take up that option come because they want to do the gardening and they want that causal connection with people or they like doing gardening and they can have more casual conversations with people while there doing it."* —Timber Lane resident

Beyond the immediate neighbourhood, cohousing groups reached out in various ways to engage with the wider city and beyond. At Timber Lane, open days, in addition to being an opportunity to get to know potential new members and neighbours, serve as public engagement events. They are an opportunity for anyone interested to learn more about cohousing to visit and get a tour of the site, meet residents, attend talks in return for a small fee or take part in working mornings. These events also act as useful networking events, where recently established cohousing groups and others interested in cohousing can connect. These regular open day events were organised to coordinate and satisfy many requests to visit those interested in learning more about cohousing. Similarly, Cobble Lane organised one-off open day visits for interested student groups.

> *"A lot of people come through on polling day because we're the polling station…There has been [campaign group] meetings here this week…there was [local youth club] which were largely outside."* —Timber Lane resident

> *"We had started a youth group for 2 to 5 year olds connected to [a local youth organisation], and so every Saturday morning we would run sessions here in this park. And it's a great space for that because it's a beautiful natural environment, it's got the confines of the railings so children can't run off too far."* —Timber Lane resident

In addition to **neighbourhood events (46)** and **open days (45)**, cohousing groups use their shared spaces to **host (47)** other groups, organisations and even public services. For example, the common room can be booked out by a local choir and music groups, meeting spaces, youth groups, or as a polling station. Timber Lane go further than this is renting out several their allotment plots to local neighbours, encouraging further social interaction with them on site. All the groups in the research used **online platforms (38)** such as social media accounts and websites to give more information about their cohousing project, document their development, publish newsletters and blog posts, share information on events and connect with people on a wider scale. The wider engagement of cohousing groups was often coordinated by a specific working group and facilitated through one resident as the main **point of contact (42)** to enable communication and logistics. Together, these

patterns demonstrate a level of openness and external interaction in these cohousing cases, which wouldn't be expected to occur in more conventional private dwellings and set it apart from other more closed forms of gated communities. Further cohousing research corroborates this 'open door' attitude in cohousing, underpinned by a general willingness to share their spaces and what they have learnt with people outside the group (Ruiu, 2016b; Ahn, Tusinski and Treger, 2018). However, this does not equate cohousing landscapes to other forms of public spaces, as these levels of openness cohousing communities demonstrate are most often temporary, allowing residents to retain control of when and how often they occur.

Contributions of insider / outsider tension to cohousing knowledge

This section reflects the concerns that cohousing remains an exclusive type of housing, identifying the initial costs and risks in setting up cohousing, homogeneity in viewpoints and self-selecting membership processes as contributing to this issue. In doing so, the findings reported in this section contribute to the ongoing debate of the comparison between cohousing and gated communities (Ruiu, 2014; Chiodelli, 2015) by demonstrating their similarities in the spatial enclosure and 'invisible' barriers alongside differences in the intentional and temporal openness of cohousing. In many ways, cohousing communities go beyond many other types of housing in providing shared resources that can be used by the wider neighbourhood and tolerate visitors and outside groups in a way that wouldn't normally be expected in private residential spaces. Therefore, this research considers cohousing different from isolated gated communities through its ambition to open and connect with wider society, but it still experiences some barriers to accessibility and inclusion.

6.5 Fixed / Uncertain

Figure 6.35. *Patterns reflect the fixed, uncertain and flexible or responsive elements of cohousing shared outdoor spaces.*

The tension between needing fixed, long-term certainties and flexible adaption in response to changes within and outside the group is described in this section through the evolutionary and experimental nature of the community and site. The ability for cohousing

communities to change and adapt their spaces and social structures over time has already been demonstrated in several of the patterns in other tensions. As has been discussed in the previous section (6.4), cohousing communities take on risks and uncertainties that are involved in housing development, such as availability of land, unforeseen costs, complex legal and planning procedures, changes in residence and different uses of space (Scanlon and Fernández Arrigoitia, 2015; Hacke, Müller and Dütschke, 2018; Fernandez Arrigoitia and Tummers, 2019). In conjunction with unpredictable contextual circumstances, such as the recent global pandemic, the inherent uncertainties and risks in cohousing require cohousing communities to respond and adapt. Cohousing communities and spaces need to be flexible enough to respond to these uncertainties, yet sufficiently stable and specific to fulfil the groups' ambition and purpose. These include the affordance of multiple uses and activities in shared spaces, the adaptable boundaries of open gateways, the territorial fluidity of permeable buffers, and the temporary hosting of public events. This section explores the predetermined and specific alongside the flexible and unprescribed aspects of cohousing and the patterns that allow communities to adapt (figure 6.35).

Responding to financial uncertainty

> *"The new build has ended up costing up an awful lot more than we imagined and we still don't have the final bill. We don't know what we can afford and what we can't afford."* —[Redacted] resident

> *"A lot of [garden furniture] we've got we either inherited or got second-hand and a lot of it's on its last legs. But [new furniture is] really expensive...I think last year the landscape [working group] started to save a bit of money for future garden furniture, but realistically it's not a lot, it will take us a long time if we even buy a table."* —[Redacted] resident

The ability to raise funding to start and maintain a cohousing development is a key barrier to its success (Ruiu, 2014; Scanlon and Fernández Arrigoitia, 2015; Fernandez Arrigoitia and Tummers, 2019). Until cohousing groups have a site, sufficient funding, knowledge and legal structures in place, they face long periods of uncertainty (Ruiu, 2015; Jarvis *et al.*, 2016; Hacke, Müller and Dütschke, 2018). Cohousing residents interviewed described being unaware of the total cost and the complexity of what was involved in housing development before embarking. Unknown issues with the site, such as soil contamination or the presence of endangered wildlife on the site, required unforeseen additional professional input and technical solutions that weren't originally budgeted for. Last-minute changes to the scope of work or personalisation of individual houses also contributed to the unexpected costs of the development overall. The final cost of the build was, therefore, often not known until completion, and as such, residents ran out of money or had less budget than expected for the landscape works, which were typically completed last and viewed as something that residents could achieve themselves. At the same time, residents overlooked the need to submit the landscape works such as

bin and bike storage (53), parking spaces and access paths within the planning documents to fulfil planning requirements. In the longer term, the costs of maintaining shared outdoor areas, such as replacing outdoor furniture was a further oversight. Due to a combination of these unforeseen circumstances and lack of experience of residents taking on such a project, cohousing groups often didn't have enough budget to cover the cost of the outdoor spaces.

> *"There is some money in the existing budget for a small amount of landscaping around all the phase two buildings…We have fought to keep an entirely different amount in a separate budget for landscaping work, and this could cover the cost of this work depending on other Landscape priorities."* —Grove Villa resident

> *"One of the budget things that we do is, we save up money for tree surgery because we expect […] last year to have to take down a cherry tree which is on its last legs."* —Timber Lane resident

Although funding the shared outdoor spaces was often a challenge for cohousing communities, several groups set aside a fixed allocated budget (26) for the initial landscape works and ongoing maintenance, partly covering the costs needed. Keeping the landscape budget separate from the building budget helped protect some money for the landscape works when prices for the building were more than expected. In addition, some groups had an annual maintenance budget, which all residents contributed to, for costs associated with maintaining buildings and outdoor spaces such as tree surgery. This budget was allocated to the relevant working group to undertake the maintenance works. However, the budget was often small and insufficient to cover the unforeseen costs described above. Any additional fees were submitted to a whole group meeting and agreed upon by consensus to spend money from other budgets or residents' extra costs.

> *"We had a big brainstorming session when we thought about different ways of raising money, we could grow some produce, sell some produce. We could ask people if they come to use the space, because we do let groups use the big communal space, to make a donation. So we made some money at the yard sale so that was good."* —Poplar House resident

As a result, cohousing groups searched for alternative ways of bringing in income through small-scale hobby enterprises or **cottage industries (27).** Residents looked for informal ways of bringing in small amounts of money by selling or swapping excess produce, renting spare spaces, or selling and swapping second-hand materials. This provided modest amounts of additional income that could go towards other small costs such as buying seeds.

Less has been written about the economics of cohousing, particularly regarding the more complex and everyday decisions of how residents negotiate the ongoing costs of shared landscapes. This research reinforces the uncertainties and risks that remain around the funding and costs of cohousing as a remaining barrier to its success (Scanlon and Fernández Arrigoitia, 2015). Further, the research highlights that these uncertainties around costs in cohousing continue to fluctuate over time

about the ongoing maintenance of development of the shared outdoor spaces, which can easily be overlooked by residents. A fixed budget is useful for residents to ensure money is set aside for unexpected costs, but residents also utilise more informal mechanisms of saving or raising small amounts of money, such as through pooling resources or cottage industries. This reinforces Huber's (2017) findings, highlighting collaborative consumption practices in cohousing, and Lietaert (2010) describes the collective action and economies of scale in cohousing as a form of economic degrowth.

Group dynamics and an evolving vision

> *"The area where the new extension is being built is an existing spoil mound and shrubby trees. When they removed a very large hedge it revealed a cherry tree, which bounced back to life and became a sort of identity or symbol for the group."* —Fieldnotes

As discussed in the previous sections, the set **shared intentions (1),** and '**a steady core' (5)** steers group decision making and enables the group to work towards the same goal. According to Wang *et al.* (2020), most cohousing communities consist of long-term residents, suggesting that becoming a cohousing member is a long-term commitment to the community. This is backed up by research that suggests collective action can help maintain stability in communities (Montelongo Arana and Wittek, 2016). The idea of long-term stability and sustaining collective action in the community is reflected through the physical manifestation of the groups' long-term vision through **a manifesto (6),** such as a vision or mission statement, or **central landmarks (54)**, such as a major tree or building. For example, a polytunnel built at Cobble Yard became a celebration of the group's first achievement and a physical reminder of the group's shared intent. Similarly, a wildlife retention pond located in the centre of Timber Lane overlooked by all the houses reflected the group's ethos for designing a sustainable and ecological approach by collecting rainwater from rooves and providing a habitat for ducks, frogs and dragonflies. This reinforces comments from other researchers highlighting that physical elements in cohousing developments function as symbolic representation of the group's values and ethos, including examples such as central lawns, community art projects, prominent trees or the common house (Jarvis, 2011; Sanguinetti, 2014; Ruiu, 2015).

In addition to creating a fixed representation of the group's ethos, residents found it important to record decisions by logging them in different ways. If residents didn't keep track of group decisions, they found the same choices and conflicts would come up again and again, even if they had previously been resolved. This problem was reflected in Scanlon and Fernandez Arrigoitia's (2015) research into a cohousing case where the fluid changes of group members during the decision stage opened previously resolved decisions for further discussion. Pinning up meeting minutes on the **noticeboard (65)** or **online platforms (38)** provide permanent and often-visited spaces in which to display and **log decisions (15)** so that others are aware and to prevent the same issue from being repeatedly raised.

Logging decisions also allows other residents who couldn't attend group meetings to stay up to date with the goings-on in the community and respond to any decisions they are unhappy about. The processes of establishing and laying out new forms of practices and systems in cohousing are linked to the idea of coding in assemblage theory by Boonstra to provide *"stability and security to the initiatives"* (2016, p. 287). Although Boonstra refers to coding as the process communities, go through to make the development work within existing planning and legal frameworks, already discussed here in section 6.3, coding also occurs internally in cohousing through the setting and fixing expectations, rules and decisions physically in the environment.

Figure 6.36. *After previously deciding against it, residents [redacted] decided to get chickens as new residents joined, and the consensus changed.*

> *"We've also had join us a couple with two small children. So they have completely different ways of using the space than adults without children and we have quite a few grandchildren who visit now and we also now have one couple with a dog, which again has a different impact on the outside space as well…"* —[Redacted] resident

> *"We definitely weren't having chickens – now we have chickens! So again a few people lately have been really into the idea and put a lot of work into making it happen. And again because there's been a few changes in who lives here there hasn't been any sort of strong opposition to it – or any opposition to it at all really this time…"* —[Redacted] resident

Cohousing groups can be particularly fluid in the early stages of the design development (Scanlon and Fernández Arrigoitia, 2015), but this continues to a lesser extent over time, as residents continue to move on, new members are recruited. With each recent change in members, the group dynamics, opinions, and vision evolve in response. For example, the [redacted] community had previously decided against having chickens on the site, as some key members opposed the idea. But, as residents with strong opposition left and new residents who wanted chickens moved in, the decision was reviewed (figure 6.36). Similarly, as families with younger children moved onto a site that previously only had adults, residents find the spaces used differently. This research supports the view

that new cohousing members are *"value shapers"* who influence the beliefs and actions of the group and that *"overly rigid adherence to values can thwart the growth of the collective"* (Fernández Arrigoitia and West, 2020, p. 11).

It is important that original members involved in developing the cohousing project, described as 'pioneers', *"give way to new ways of thinking and doing by the 'settlers' who follow them"* (Brenton and Argent, 2020, p. 3). Rigidness in the vision for the site can also be limiting for getting newer residents involved in the shared outdoor spaces. For example, one resident, who moved into cohousing as it became more established, felt as if the vision was already *"finished"*, leaving them with little opportunity to make their mark on the site. Jarvis (2015) emphasises that dynamic intentions and values are needed in response to resident turnover and as individual residents and their relations with each other naturally develop and evolve. Therefore, cohousing groups benefit from allowing the **vision for the site to evolve (2)** in response to changes in the group dynamics, even if the broad ethos and ambition of the group remain the same. An evolving vision was achieved by regularly reviewing policies, holding repeat visioning days when new members joined, and including prospective members in member meetings and decision-making.

Implementing change in shared outdoor spaces

As has been highlighted in section 6.2, the consensus decision-making process can become a barrier to change in the outdoor spaces when groups fail to find an agreed solution that deals with conflicting concerns. Further to this, a lack of money, time or skills also created barriers to agreeing, starting or completing ideas. The cohousing communities found different ways around this to make more immediate changes to the outdoor spaces to alleviate these concerns or avoid the need for an immediate decision. These included patterns such as **quick fixes (22)**, **trial runs and mock-ups (23), reusing and repurpose (24)** and **rewilding (25)**.

> *"...if it's a temporary thing then we don't need full member consent because it's moveable, so there's been a lot of experiments and things that are moveable or temporary. And so junk play, and having loose materials like those black pipes, like bits of wood, like the tubes, a lot of this is left over actually from the build process are all things that the children can build and create with."* —Timber Lane resident

When implementing new ideas that were controversial or unresolved, residents would test these out through temporary **trial-runs and mock-ups (23)**. This allowed the group to get feedback from residents and understand any unforeseen issues before implementing the idea on a more permanent basis. Temporary interventions were less controversial and useful to experiment with and test new ideas. [Redacted] trialled the idea of having chickens on the site by 'borrowing' a neighbour's chickens for a few days at a time. This enabled the group to decide whether the chickens would become a permanent feature based on this experience.

Figure 6.37. *Temporary raised beds for growing vegetables are made from wooden pallets tied together, so they can be taken apart when the final design of the kitchen garden has been approved.*

At Poplar House, the group had yet to decide on a final layout for the kitchen garden beds and were reluctant to build anything before agreeing. However, one resident was keen to construct something before the growing season was over (figure 6.37). This was resolved by creating temporary raised beds out of pallets fixed together by wire to easily disassemble after the harvest. The transient nature of the raised beds alleviated concerns from other residents whilst allowing timely construction of beds so vegetables could be grown before the end of the season.

> *"These wildflowers that we planted here this year have been really nice although that's only a very temporary phenomenon. But that was because we didn't know quite what to do with that little bit…that was quite successful."* —Poplar House resident
>
> *"[A resident] has used that a lot for his tomatoes, which has been really nice and has been a really nice shared thing for people. [That resident's] happy to put them in, then people pick them, people have really liked that and the raspberries as well. I think that's been a bit of individual enterprise that has really benefited the community."* —Poplar House resident

Where residents weren't immediately able to implement ideas or necessary repairs due to a lack of funding, time or skills, residents' **quick fixes (22)** provided a direct and temporary alternative. For example, in the first year of moving into Poplar House, while it was still a construction site, residents planted an annual wildflower meadow as a quick yet temporary way of adding some planting and colour to the site before agreeing to a site planting plan. At Grove Villa, residents used a container on site as a temporary place to store bikes and equipment until they had got planning permission and agreed on the design for a permanent store. Similarly, at Cobble Yard, residents had put down a temporary cover to stop weeds coming up and provide a play space for children outside while the rest

of the site was under construction. Annuals growing vegetables in beds were also tolerated by other residents as a temporary act and perceived as providing useful produce that everyone benefitted from. Several groups incorporated edible planting into ornamental planting areas to have the dual purpose of looking nice and giving food and herbs. Planting edible food in pots was also a useful temporary and uncontroversial way of adapting shared outdoor spaces.

Many who write about cohousing refer to it as a form of experiment (Jarvis, 2011; Noterman, 2016; Larsen, 2019), with Lietaert highlighting that *"[t]he strength of cohousing is that it is based on a trial and error method…making it possible to adapt each cohousing community to its particular cultural context"* (2010, p. 567). The patterns, **quick fixes (22)** and **trial-runs and mock-ups (23)** highlight how the open-mindedness cohousing communities bring to exploring new forms of shared living is enacted in the shared outdoor spaces. This research reinforces other research that mentions how cohousing communities utilise experimentation to generate user feedback to help understand what works well and what doesn't (Ahn, Tusinski and Treger, 2018) and try out new sustainable materials and building techniques (Boonstra, 2016).

Figure 6.38. *A seating area made from materials found around the site, including cut logs, paving slabs and stone.*

> *"We had to cut down some trees here…you can see the stump of one tree there…we got all the wood is from these trees, we planked it all [as timber] and stored over there."* —Poplar House resident
>
> *"Potatoes are being grown in reused compost bags. Raised beds have been created from a range of reused materials including coffee table frames. "* —Fieldnotes from Grove Villa

Self-building (21) gives the additional advantage for residents to identify, **reuse and repurpose (24)** found materials on the site and in the local area, reducing costs and impacting the

environment. Reusing and repurposing found, and waste materials allowed cohousing residents to create outdoor spaces cheaply, without the need to get a spending budget approved from the group. At Timber Lane, cut logs, old tires, sinks, fences and other types of found and reused materials are used throughout the site as planters, edging materials and in the children's playing field for DIY play. The rock garden was created using stone sourced for free from a local school and a log fence from free timber given in exchange for help coppicing a local woodland. Organic materials were reused and repurposed on-site through centralised composting systems, and residents even grew their own bamboo canes. This not only was a more affordable way for residents to create outdoor spaces, but it also created a distinct material characteristic and identity in all the sites studied, noted in the field notes and photos taken during site visits (figure 6.38). Although many studies mention recycling as a common activity in cohousing, the idea that this creates a recycling aesthetic or materiality, and a specific character and identity is not described in the cohousing literature. It also raises further questions from a design perspective of how design professionals adapt their approach to incorporate on-site materials in the local area or a common waste product and create spaces that residents can easily add to and adjust by using recycled materials.

Figure 6.39. *An area of the site left to become 'wilder' using a low maintenance approach to save time.*

> *"Looking from this bottom bit (shrub border near site entrance), this is the area that at the moment we are just having to leave, we just do not have the capacity."* —Poplar House resident

> *"Around the pond here we started off with something that was quite formal I guess, neatly defined plants all in their right place, and that was beautiful but very hard to maintain, and one of the key people who was behind keeping that happening moved away. So what we've got now is a little bit more…overgrown, weedy – or natural depending on your point of view! It's left to its own devices a little bit, which works well I think".* —Timber Lane resident

Leaving areas of the site to **rewild (25)** overtime was adopted by all the cohousing groups in some parts to minimise the required maintenance and encourage wildlife (figure 6.39). At Poplar House, residents described a lack of time, capacity and funding as barriers to maintaining and creating shared outdoor spaces. Residents were keen to preserve as many existing mature trees as possible, and some residents wanted to retain the 'wild' aesthetic and privacy gained from mature shrub and tree boundaries. In response, residents have taken a *low maintenance approach* to some site areas. This included minimal removal of shrubs, allowing plants to self-seed and leaving some areas as 'wild spaces'. Similarly, at Timber Lane, the planting around the central pond, which had previously been maintained as ornamental planting by one resident, had become wilder and less maintained after that resident left. Although it wasn't the group's original intention, many of the residents grew to like the aesthetic of the naturalistic planting and that it required less time to maintain. As well as reducing the amount of maintenance needed, some residents preferred the more natural aesthetics or the idea that it would attract wildlife. Wilderness spaces also afforded informal play spaces for children and materials to create dens (figure 6.40).

This research reinforces other studies that highlight cohousing residents taking a wild approach to gardening to encourage wildlife (Brenton and Argent, 2020) as an aesthetic preference (Lies, Kang and Sample, 2017) and to build a stronger relationship with nature (Kirby, 2003; Sargisson, 2012; Sanguinetti, 2014; Glass, 2020). In addition, this research shows that rewilding may occur in cohousing for practical reasons, including a lack of time or money or lack of action due to disagreement. In contrast to Kirby's finding that the connection to 'wildland' was a unifying factor in a rural cohousing case, this research found a common area of disagreement between cohousing residents. As has been previously highlighted in section 6.2, how wild landscapes are maintained and what they should look like was a common point of contention in cohousing as residents had very different views about what 'wild' or 'natural' landscapes meant to them. This may be due to the more limited space within urban cohousing case studies, meaning they are more likely to become contested spaces within the group.

***Figure 6.40**. A 'wild' area of the site is used by residents to connect to nature and children for play.*

Affording adaption

> *"They did the green roofs themselves because once we've got the membrane and all technical things down to satisfy the warranty, it's been designed so the top is a separate thing, so they then put the substrate on…people still have experience and knowledge and making sure you take that into account and use it in a good way."* —Design practitioner

To accommodate resident involvement and an evolving vision in cohousing, including forms of experimentation and embracing natural processes described above, design practitioners need to **design for adaption (72).** The idea of designing for adaption was employed in several case studies by leaving some areas of the plan blank, optional or open to change. The design practitioner working with Grove Villa produced two plans to negotiate the fixed and adaptable elements. The first plan was drawn to get planning approval and included the fixed features required to meet those regulations, such as parking space allocation and bin and bike store locations. A second 'aspirational' plan was then produced to outline the adaptable elements that residents would implement over time, including a firepit, kitchen garden, and an orchard.

Figure 6.41. *A leftover part of the site has yet to be given a purpose. On a later visit to this area was being transformed into a 'quiet space'.*

> *"This [area] is the bit that we didn't know what to do with. It's very overshadowed by the trees here that keep on getting bigger and then the flats here. We struggled to come up with a function for it when we were designing it…it's really hard compacted ground, nothing much grows here…so we've struggled with what to do with it…We did one year, for a mid-summer's party, made a sauna here…it's a space that can absorb things…"* —Timber Lane resident

> *"We've got the field here as well which we bought as part of the site…planning wise we can't really do a lot with it, and we wouldn't want to, it's a field and that's what it is. Having said that, there is a make-shift football pitch over here, just by cutting the grass!"* —Cobble Yard resident

One of the ways residents enable an evolving vision for the site, alongside keeping open channels of communications and allowing residents to **have a say (13)**, is by leaving some parts of the site undeveloped. **Leftover spaces (60)** occur as residents cannot develop all the site at once, inevitably leaving some site areas 'unfinished' (figure 6.41). In the meantime, leftover spaces become useful, flexible spaces adapted for temporary play areas, **storage space (53)** or even events. For example, a narrow and shaded area with the hard impacted ground between a block of flats and shared allotments at [redacted] was left undesigned as it was unsuitable for planting. Alongside being used to store materials and occasional events in the summer, when residents decided they wanted chickens on the site, the space was adapted to house the new chickens. The idea of Leftover spaces is in line with Hammond's experience of co-designing shared outdoor spaces with a cohousing community where residents wanted to avoid predetermining functions for spaces so that they could be appropriated over time as different uses emerged. Hammond explains, *"in recognition that the group's needs would inevitably change as they grew older…the types of shared activities the group might want to undertake in the future are unknown to them as present"* (2018, p. 10).

Figure 6.42. *A small picnic bench with a temporary umbrella provides an outside meeting space for residents.*

> *"During COVID we've started having our communal meals outside, so we can still socially distance. And not everyone's comfortable with doing that but if people are then they can join in."* —[Redacted] resident

The centralised open common spaces, such as a **central green (52)** or **commonhouse spillout (55)**, allow for multiple activities to take place there at different times of the day. This is

supported by specific use spaces such as workshops, kitchen gardens or **dedicated play areas (63)**. Spaces that afford multiple activities are generally located within the centre of the site. In contrast, specific use spaces are located towards the edges of the site, in line with Jordao, who highlights that *"[a]reas of specialized activities…[should] remain on the edge of the core community, in order to concentrate the spaces with higher and multi-activity frequency in the inner side of the development"* (2016, p. 95). **Moveable furniture (64)**, such as picnic benches, foldable chairs, plant pots and children's play equipment, allow residents to personalise their own spaces, temporarily appropriate shared spaces and facilitate a range of activities (figure 6.42). Moveable tables and chairs are vital for accommodating outdoor shared community meals and events. Moving tables and chairs into different configurations afford additional activities such as larger public events and open days.

Similarly, having moveable children's play equipment allows play spaces to be used for different purposes, such as a space to have a fire on bonfire night or a marquee to celebrate a resident's wedding. A single picnic bench or cluster of tables and chairs in the centre of a central green provided neighbouring residents with an impromptu place to have a chat over a cup of coffee. Moveable furniture was particularly useful during lockdown to offer new social spaces outside. This included more room to spread out and have communal meals or group meetings outside. Several groups used temporary gazebos and umbrellas to facilitate 'all-weather' outdoor meeting places during the pandemic. These patterns demonstrate how moveable furniture provides increased temporal affordance within flexible shared spaces and in response to unforeseen events, supporting other findings that moveable furniture attracts residents to use shared spaces in cohousing for spontaneous activities (Jordao, 2016). Although moveable furniture remained a point of contention in cohousing when toys or personal furniture were left out on the communal lawn for extended periods, the temporary nature of moveable furniture meant short periods of appropriation in shared spaces were tolerated by other residents.

> *"And what we've done is, we've negotiated a little bit, we've got a WhatsApp group that if you want to use the garden by yourself, if you want exclusive access to it, then you just give notice on the WhatsApp group for 30 minutes notice and say how long you want to spend in it."* — [redacted] resident

The capacity for cohousing communities to create informal understandings and **unwritten rules (30)** within the group also allowed them to quickly adapt those rules in response to the pandemic. When the social distancing guidance was brought in during the lockdown, the official advice didn't specifically address the use of shared outdoor spaces in cohousing, which many residents considered equivalent to their private gardens yet were spaces designed to encourage social encounters and interaction. Cohousing communities responded to this by developing their own rules for using outdoor spaces, including timetabling for children's play equipment residents to request exclusive use

of the outdoor spaces for a set time. This further exemplifies how collective action in cohousing can enable resilience to change (Montelongo Arana and Wittek, 2016).

Contributions of fixed / uncertain tension to cohousing knowledge

This theme reinforces the uncertainties and risks UK cohousing communities face, particularly when first starting out in the site acquisition and design development stages. The group utilises long-term goals and a core group of residents to help steer them through this process, manifested into a fixed physical form, such as a landmark, to act as a symbolic reminder. Further to this, this theme presents several ways that residents adapt to such uncertainties. This includes allowing the vision to evolve in response to changing community dynamics, experimentation in low-impact and -cost placemaking approaches and utilising different affordances in spaces. This highlights the need for designers to consider how to build in adaptiveness to the design by leaving areas of the site undeveloped and providing communities with 'working plans'. The tension between fixed and uncertainty in cohousing landscapes is rarely discussed in the literature. Therefore, this section contributes unique insight into how cohousing communities adapt to change, maintain outdoor spaces over time, and respond to unforeseen events such as the recent pandemic.

6.6 Conclusion

This chapter ties together the patterns, and associated empirical evidence within the case studies, with the literature on cohousing to provide an authentic account of how cohousing communities collectively participate in the shared outdoor spaces. Together, chapters 5 & 6 meet objective 1 *(to identify patterns of urban commoning in cohousing landscapes)* by firstly outlining the patterns and then discussing the underlying tensions from which they have emerged. By referring to the wider cohousing literature, this chapter demonstrates the similarities and differences between the experiences of the four case studies in this research with other cohousing in the UK and internationally. The detailed accounts provide rich empirical evidence that expands upon the existing cohousing literature and contributes to understanding how outdoor spaces in cohousing are created and managed by residents. Together this highlights detailed examples of cohousing residents' lived experience at the human scale and during the post-occupancy phase of residential landscapes, providing insight into the successes and the challenges and tensions of residents' participation in shared outdoor spaces.

This chapter firstly contributes an understanding of the complex, and sometimes ambiguous, the interplay between private, shared and public territories in cohousing landscapes, negotiated by defined yet open boundaries and overlapping, temporal claims to space. Secondly, this chapter highlights that shared outdoor spaces are important arenas for social interaction and collective action

but can equally become spheres of division and conflict. This emphasizes the need for formal and informal governance in hierarchical and horizontal organisational systems to negotiate these conflicts through a balance between individual agency and group organisation. Thirdly, this chapter demonstrates various forms of knowledge sharing, both within and outside the community, through networks, contacts, intermediary hubs, and professionals to address the complexities and risks involved in cohousing development. This highlights the many aspects of placemaking in cohousing that fall outside the realm of the design profession, requiring different roles and skills of design practitioners. This includes leaving room for residents to make their mark, facilitating the delivery of technical expertise so that residents can make informed decisions, and being an intermediary between the community and professional frameworks or bodies. However, the discrepancies between the additional time and costs required to employ these different roles and what cohousing communities were willing to or can afford to pay remains a challenge. Fourthly, the chapter contributes a more detailed understanding of the internal and external relationships in cohousing and the visible and invisible barriers between cohousing communities, the wider neighbourhood and society. Although cohousing communities attempt to counteract the typical inward-facing layouts of the development, with open gateways, temporary open events and access, challenges remain in making cohousing accessible to a wider range of people. Finally, this research contributes detailed examples of how cohousing communities adapt to uncertainties, including the recent pandemic, organisationally and spatially, demonstrating resilient mechanisms of bottom-up and collective action in a residential landscape context.

As well as contributing to the understanding of residents' involvement in shared outdoor spaces in the context of cohousing, the findings present broader insights relevant to the theory of urban commons. As previously outlined in the literature review, cohousing landscapes can be understood as a type of urban commons and residents' involvement in those spaces, a form of urban commoning. The findings discussed in this chapter highlight the complex and adaptive relationships between the organisational, spatial and social aspects involved in urban commoning in cohousing landscapes. It outlines empirical examples of urban commons that act as and form part of dynamic and complicated urban assemblages. The tensions identified through the grounded theory methodology and outlined in detail in this chapter form a framework for further understanding and developing the theory of urban commons in this context, outlined in the following chapter.

7 ASSEMBLING THE URBAN COMMONS

By framing residents' collective involvement in shared outdoor spaces in cohousing as a type of urban commons, the patterns and tensions identified in this research can be discussed within the context of similar debates in urban commons discourse. In doing so, it outlines how this research can contribute to substantiating urban commons theory (objective 3) and explore the possible relevance of the research findings to other types of community-managed urban resources. Firstly section 7.1 examines how the five tensions identified within cohousing align with the contradictions discussed in urban commons discourse more generally. Secondly, section 7.2 draws upon assemblage theory to reframe the tensions as 'slippages' to explain urban commons' inherently contradictory and dynamic qualities. Finally, section 7.3 outlines five socio-spatial concepts that explain the mechanisms occurring within the slippages that act to balance, combine or otherwise negotiate the two opposing ends of the spectrums. These concepts are formed by linking the patterns that worked to resolve or negotiate the tensions discussed in Chapter 6 with existing urban theory. The five concepts are outlined to articulate the social and spatial interactions that occur as slippages within urban commons, providing a holistic understanding of the phenomena. The significance of these concepts is that they begin to combine commons and urban theory, supported by the empirical evidence within cohousing cases, and outline ideas relevant to facilitating urban commoning in urban design practice. Therefore, the findings described in this chapter are relevant for academics and design practitioners interested in applying urban commons theory.

7.1 Tensions within urban commons

As pointed to in Chapter 2, understanding urban commons is challenging because the concept is pluralistic, meaning it can manifest in different forms with varying characteristics (Hess, 2008). These varying forms and characteristics have led some scholars to highlight urban commons' paradoxical or seemingly conflicting properties. Section 2.2 of the literature review touched upon some of these contradictions in describing how urban commons can be small or large in scale, material or immaterial, publicly or privately shared, and composed of strangers or trusted friends. In this way,

urban commons are not easily categorised as one thing or another. Although this *"seemingly limitless diversity"* (Hess, 2008, p. 3) makes urban commons hard to pin down, their ability to encompass multiple forms and span contradictory ideas is a defining characteristic. Just as urban cohousing communities attempt to negotiate or balance the conflicting tensions described in Chapter 6, the literature highlights similar contradictory qualities that commoning in cities entails. Therefore, the tensions identified within cohousing landscapes are discussed here within the broader context of the urban commons discourse, to provide insight into how urban commons deal with the complexity and contradictories of the city.

Private / communal

Property ownership does not define or determine an urban commons, as they can be either privately, commonly or publicly owned (Gibson-Graham, Cameron and Healy, 2013; Williams, 2018). Instead, urban commons comprise rights granted to communities that afford them control over how a resource is managed but isn't necessarily owned by that community. Colding *et al.* explain *"the right to actively manage land is a key feature of urban green commons whether ownership to green space is in the private, public, the club realm domain, or constituting a hybrid of these"* (2013, p. 8). Although owning a shared resource, as in the case of Cohousing communities, can help to guarantee rights to autonomously govern that resource, those rights can be gained through other means, such as informal agreements, renting or squatting. When considering the urban commons, it is useful to consider the terms' private', 'public' and 'communal' about territory and a sense of belonging rather than legal ownership over a resource. Territory considers a sense of belonging to space experienced by an individual or group through their ability to control how a space is used, managed and occupied. Therefore, commoners are assumed to feel a shared territorial sense of belonging to space through the practice of commoning enacted "*through a sharing principle, which is neither private nor public"* (Susser and Tonnelat, 2013, p. 107). In other words, urban commons, as a shared resource, are not private territories in the sense that they are managed by a single resident or household, and neither are they public in a way that they are open to all. Instead, they are a form of community-led governance, set apart from other shared resources governed by private markets or public states (Bollier & Helfrich, 2012) by a shared yet defined group of commoners.

Although urban commons are generally considered a shared territory, positioned somewhere between private and public, the study of cohousing landscapes reveals a more complex gradation of territory experienced by residents. Much of the literature on urban commons doesn't discuss private territory as a part of common spaces because it focuses largely on reclaiming public resources as community-run public spaces, such as community-managed libraries (e.g. Williams, 2018). However, individual privacy and control of space are intrinsically linked to the idea of home and, therefore, is

an important dimension concerning urban housing commons and other types of commons formed from a conglomeration of private domains (Davy, 2014), such as allotments (e.g. Colding *et al.*, 2013). Within cohousing, in particular, commoning is created through the extension of the private domestic realm of residents into the shared domain (Granberg and Mirjamsdotter, 2016). Therefore, in cohousing, the gradation between the privacy of the home and the wider public neighbourhood is stretched to maximise the opportunity for interaction and commoning within the cohousing community in the resulting shared intermediary space.

Shared territory plays an important role in connecting private and public domains, which is reflected by Davy, who highlights that urban commons *"do not exist in isolation, but are shared land uses embedded in rich connections with enjoining restricted uses"* (2014, p. 482). He highlights the potential for the ambiguous spaces in front of and between buildings to form common spaces that connect private and public realms. This understanding is reflected by Giordano, who describes how the neat categorisation of resources into private, communal or public covers up a more complex continuum of privacy and commonality in urban commons. He explains: *"...strictly private (possession by one) and strictly common (possession by all) resources exist only at the extremes of the continuum. Between these extremes, where the majority of cases are likely to be located, "private" property rights may exist within communal organisational structures"* (2003, p. 367). Aside from these examples, the relationship between private and shared territory is rarely discussed in commons literature, and cohousing can provide useful insight into this area. As described in section 6.1, permeable buffers in cohousing create porosity and flexibility between private and shared spaces. The buffer space itself is territorially ambiguous, combining personal management and shared access, which residents maintain and personalise individually, but use and access in a shared way. Although the territorial relationship described here may be specific to certain types of urban residential commons, it highlights that urban commons consist of and are produced by more complex and overlapping territorial relationships resulting from the tension between private and public.

Agency / organisation

The tension between individual agency and organisational governance is a longstanding discussion in commons literature. The 'free-rider problem', where shared resources become overconsumed or destroyed due to individuals' self-interested actions rather than the common good, was described by Hardin as one of the potential pitfalls of the commons (1968). Ostrom (1990) later demonstrated that the free-rider problem could be overcome through users' shared interest in sustaining a resource and a willingness to work together to devise rules of governance, monitoring and sanctions to protect it. This was reflected in the cohousing cases through the need to establish shared

intentions and manifestos to guide the self-selection of compatible members and associated policies and unwritten rules designed to guide residents' behaviour towards those shared intentions.

Although the shared intentions and policies are designed to select compatible members and orientate the group towards consensus in shared goals, tensions between individuals and the group remained. On the theory of collaboration, Thomson and Perry explain that the dynamism between individual and collaborative identities "*creates an intrinsic tension between self-interest — achieving individual organisational missions and maintaining an identity that is distinct from the collaborative — and a collective interest — achieving collaboration goals and maintaining accountability to collaborative partners and their stakeholders*" (2006, p. 26). Where individuals' goals or interests overlap in tackling problems that can't be easily solved by one person alone, there is greater potential for the voluntary reciprocity and mutual benefit required for collaboration. Conversely, when collaborative goals conflict with those of the individual and little benefit is gained, it is harder for that person to justify their involvement and the more likely they are to withdraw from the collective agreement (Thomson and Perry, 2006). Huron (2015) describes such an instant in Housing Cooperatives in Washington, DC, operating as an urban housing commons. In this case, a booming housing market tempted low-earning members to sell their flats for individual profit, subsequently removing their properties from the cooperative and reducing the number of apartments providing affordable rents to others in the future. In this example, Huron identifies two key challenges to urban commons, the need for a diversity of strangers to work together through their shared interests and then sustaining those collaborative interests over time. This was also observed in the cohousing cases when newly completed housing units were made available to potential unfamiliar prospective members and the conflicts that inevitably arise between residents over time. The cohousing cases revealed ongoing negotiations between individual members preferences and group decision making, and the translation of changing group dynamics into an evolving vision for the site.

DIY / expertise

The DIY-expertise tension identified in cohousing is interpreted more broadly in urban commons as a tension between bottom-up and top-down development. A frequent trigger for urban commons is what Foster and Iaione refer to as 'regulatory slippage' (2016). For example, public bodies lack the will or resources to maintain the necessary maintenance and control over public spaces such as parks. This can trigger collective grassroots interventions, such as guerrilla gardening or 'friends of' groups, to take over their obligations. This is also seen in cohousing, where small groups of people are driven to self-develop alternative housing in response to the perceived inadequacies of housing markets and structures (Huron, 2015). Therefore, urban commons are most often associated with reactive bottom-up actions (e.g. Follmann and Viehoff, 2015; Thompson, 2015) because they are

instigated by the autonomous decision making of small groups of end-users in response to gaps in services provided by top-down organisations or authorities.

Although commoning is described as bottom-up action, such processes do not operate in isolation but within and often require recognition and support from the city's top-down professional, regulatory and institutional frameworks. This is reinforced by Ostrom (1990), who highlights the need for commoning group's autonomy and authority to be recognised by those outside the group. Gaining autonomy can be challenging for urban commoning groups, and a lack of rights, funding, long-term access to land, or other forms of support can limit their success. In the example of urban farms in Chicago, Ela describes how although commoning communities may have some involvement in influencing the cities, *"ultimately the power to make, monitor, and enforce those rules rests with government officials"* (2017, p. 42). This example outlines how the self-organised urban farms studied both benefitted from and were also subordinate to the rules enforced by city officials. Fox-Kämper *et al*. echo this notion in their description of grassroots community gardens as *"depend[ing]—to various degrees, and with regard to national frameworks—on collaborations with, and support from, external organisations and individuals"* (2018, p. 67). Although not all urban commons may benefit from top-down support, Fox-Kämper *et al*. suggest *"motivated, wellconnected and well-managed bottom-up initiatives that are able to secure sufficient public support and funding (plus the right amount of professional informal help) are likely to be successful"* (2018, p. 67). Foster and Iaione (2016) go as far as to say that operating in cooperation with local authorities is a characteristic specific to urban commons, particularly if they have arisen due to regulatory slippage. There are incentives for both commoners and governing bodies to find new ways of addressing governance in this situation. Therefore, a further paradox within urban commons exists between the formation of commoning groups as a way of claiming independent, autonomous rights and the requirement of those groups for overarching authorities to recognise, formalise and support their autonomy (Feinberg, Ghorbani and Herder, 2021).

The cohousing groups studied managed to gain a certain level of control and authority by buying land and funding property development. The challenges of raising the necessary funds, competing with developers for land, tackling the complexity of housing development, and convincing local authorities, planning departments and legal professionals of their approach remains a huge challenge (Chatterton, 2014). Working with intermediary organisations, such as local foundations, is suggested by Ela (2017) to help legitimise and support bottom-up communities and communicate and build trust with governing officials. Partnering with organisations, such as Housing Associations, is one option for giving cohousing groups more legitimacy, although Ruiu warns this could also result in some loss of autonomy and additional complexities for the community (2016a). In the cohousing cases studied, recognition was achieved by lobbying local authorities through local councillors and drawing

upon wider networks to work with housing professionals. Design professionals also acted as an intermediary between cohousing groups and local authorities.

Insider / outsider

The insider-outsider tension identified in cohousing can be seen in urban commons more generally as a tension between exclusion and inclusion. Ostrom highlights the need for reciprocity and trust between commoners—an assurance that 'if I do this, you will too'—something which is more easily established in small and stable groups of people familiar with each other. As such, Ostrom draws upon rural examples to support her theory of commons, where communities tend to be smaller and close-knit and highlights the need to define boundaries, both physically and in terms of group membership, as key to their long-term success (1990). Conversely, urban communities consist of a loosely knit diversity of strangers, and consequently, Huron (2015) highlights that cooperation among strangers is a key characteristic distinguishing urban commons from their rural counterparts. Urban commons are also associated with the city's openness and are often framed as being wholly inclusive and the antithesis of 'enclosure'. Yet, urban commons are not the same as public goods or public spaces, which are theoretically open to all and owned and managed by a government body, rather than collectively managed by an independent community (Huron, 2017).

Further to this, urban resources that are highly subtractable or rivalrous, or in other words, are negatively impacted by high levels of use, require some level of restriction to protect resources from exploitation. As Foster and Iaione explain this contradiction of urban commons: *"paradoxically, it is the openness of many city spaces that can also quickly result in an urbanised version of the tragedy of the commons"* (2016, p. 298). Protecting rivalrous resources from congestion or exhaustion can be achieved by creating 'local autonomy' within a defined governing community that has the right to exclude others from their shared resource (Ostrom, 1990; Harvey, 2012). Controlling access to commons is necessary to avoid the tragic outcomes of overconsumption and exploitation (Foster and Iaione, 2016). As such, urban commons may demonstrate varying scales of openness to provide public value or access, but the extent of that access remains in the control of commoners to ensure benefit to the defined community.

Cohousing landscapes as residential spaces associated with the privacy of the home are inherently more enclosed and defined than other types of commons that may be more orientated towards the wider public. Therefore, cohousing may be considered a limited access urban commons, which have defined physical (e.g. boundary walls) and social (e.g. membership requirements and policies) boundaries. Yet, as discussed in the previous chapter, cohousing landscapes are not fully enclosed, allowing partial or temporary public access through open gateways, designating small areas as public spaces or holding transient public events. This aligns with Graham-Gibson's identifying

features of urban commons (2013), which include shared access negotiated by a defined community and provides a wider benefit to those outside. This is reinforced by Stavrides (2015, p. 11), who describes how *"common space may be shaped through the practices of an emerging and not necessarily homogeneous community that does not simply try to secure its reproduction but also attempts to enrich its exchanges with other communities as well as those between its members."*

Although limiting access to shared resources and assigning those resources to defined communities is sometimes necessary, the discussion of diversity in cohousing membership highlights the potential issue of who those communities are. Foster and Iaione point out that due to the congested and contested nature of cities, *"the urban commons is likely almost always to involve contradictory claims about whose interests are best served by preserving versus commodifying a particular resource"* (2016, p. 310). Several of the cohousing cases studied consisted of members who were previously known to each other as family members or friends, and all required prospective members to become familiar with the group before joining, to build the level of trust and understanding required as described as necessary by Ostrom for commons to succeed (1990). However, as was also explored in section 6.4, the costs of cohousing and homogeneity of residents' views can be restrictive and limit the diversity of people living in cohousing.

Fixed / fluid

Applying the idea of the commons within the urban context has allowed a diversity of things to be reconsidered as shared, community-managed resources. In doing so, "*the concept of the commons is increasingly mobile, expanding beyond its original meaning of a physical resource to find application in sociology and political economy"* (Boydell and Searle, 2014, p. 324). Further to this, the city itself creates a dynamic context in which new urban commons can emerge, adapt or disband. Foster and Iaione (2016) argue that the constant reshaping of cities to meet the demands of rapid urbanisation, changing populations, and technologies is a key dimension of urban commons that needs to be considered in addition to the traditional concerns of congestion and rivalry. In the context of shrinking and declining cities, Foster (2016) and Thompson (2015) give examples where vacant land and structures provide new opportunities for commoning, yet, these transitory spaces are vulnerable to other contested uses, such as being sold to private developers or investors. Therefore, this openness to change brings opportunities for new commons to emerge and equally make commoning communities vulnerable to dispossession and displacement (Foster and Iaione, 2016). As Huron (2015) points out, once urban commons become established, a further challenge of being able to sustain commoning practices in the long term arises.

The constant evolution of cohousing landscapes in response to external drivers and groups dynamics was highlighted and described in section 6.5. The cases outlined the need for an evolving

vision, flexibility in decision-making, and spaces that could afford a range of activities and adaption over time. Concerning Ostrom's research on commons, Montelongo Arana and Wittek describe that "*[t]inkering with rules is necessary to establish the combination of rules best suited to address particular situations, rather than striving for optimal, permanent or unique rules*" (2016, p. 766). This is reinforced by Noterman's findings from research in cohousing cases in the US that "*evolving, localised socio-spatial relations—rather than a rigid or cookie-cutter model"* are required to deal with "*ongoing change and variable challenges"* and as such "*[a]llowing for a certain degree of flexibility is key for the sustainability of the management of the commons over time"* (2016, p. 446). Therefore, as key members of urban commons move on, change their minds or even die, it brings into question who will take on their commoning roles in the future. This requires commoning communities to deal with a constant flow of newcomers joining and older members leaving over time and other forms of adaption and flexibility in response to unpredictable external factors.

Tensions as a characteristic of urban commons

The above subsections highlight how similar tensions to those identified in cohousing are found in the debates and discourse of urban commons more generally. This includes the blurred status between private and public that urban commons occupy and the tensions between 'free-riders' and cooperation recognised in traditional commons theory. Further to this, urban commons have a predominantly grassroots approach that negotiate the professional and institutional frameworks of the city, straddling top-down and bottom-up approaches to city placemaking. The tension between insider and outsider exists in urban commons where the congestion and demand for resources require limiting access while promoting openness and inclusion as a stance against the privatisation and inequalities in cities. Finally, the changeable nature of the city defines urban commons as emergent, adaptable and transient phenomena, combining both fixed and fluid elements. Therefore, although the variability in urban commons makes them hard to pin down, one of their defining features is their ability to constantly balance or otherwise negotiate a shifting middle ground between these tensions. This characteristic is likened to the concept of 'liminality', the threshold in-between spaces, identities, times, or other fixed social or physical states, where a period of ambiguity gives way to new forms of social, spatial or organisational structures (Turner, 1967). This argument is further explored in the following section.

7.2 Slippages in urban commons

The spectrums within urban commons described above are framed firstly in this thesis as 'tensions'. Although this word tends to have connotations around controversies and disputes, it does not necessarily denote that the polar ends of these tensions are incompatible. Several authors in the

discussion around urban commons refer to the seemingly opposing concepts, such as private or public, open or enclosed, as being paradoxical (Thompson, 2015; e.g. Foster and Iaione, 2016; Noterman, 2016). This either/or mindset, the assumption that only one end of the tension may exist at once, is not helpful when applying urban commons thinking. Instead, it is necessary, as Helfrich and Bollier describe, *"to escape the trap of many misleading binaries (individual/collective, public/private, civilised/premodern)"* (2019, p. 7) when thinking about the urban commons, giving the example of *"the duality of 'private' and 'public', which implies a world divided into markets and the state, fails to acknowledge the distinct realities of the commons"* (2019, p. 54). This is also reflected in the meaning of the word tension, which describes the result of applying a force or forces to an object or situation, whereby that thing becomes 'stretched' or expanded, creating room for change or something new. Therefore, it is more helpful to think about the ability to integrate, deal with or otherwise occupy the spaces between the contrasting and conflicting aspects of urban places as a key characteristic of urban commons. This idea is referred to by Noterman as 'differential commoning', describing the capacity for commons to deal with differences and conflicting interests and which *"views unevenness as a problem to be continually grappled with rather than a tendency that can be eliminated"* (2016, p. 445).

To further expand this argument, this section draws upon assemblage theory to reframe the concept of urban commons in a way that reflects this. Section 2.3 of the literature review begins to do this by conceptualising urban commons as assemblages that are part of a complex emergent urban system of many components with interdependent complex causal relations. Further to this, as previously discussed, both the spaces within cities and the city as a whole can be thought of as a commons, with many relational, competing and cooperating processes of commoning occurring within it (Harvey, 2012; Foster and Iaione, 2016; Ramos, 2016). As commons respond and adapt to each other and the complex systems of the city, they fluctuate between fixed and transformative phases, described as a state of 'becoming' (Dovey, 2010). Assemblage theory is a useful way of thinking about urban commons because it helps to rethink the dialectic spectrums that have emerged from this research in cohousing as 'tensions'. Dovey highlights similar tensions within urban assemblages, arranged as binary pairs such as *territorialisation/deterritorialisation, rhizome/tree* or *striated/smooth* (described in section 2.3). However, he does so by moving away from a binary understanding of these concepts, where urban places are only one thing or the other, by recognising that these two opposites are inherently connected and can occur alongside each other. Dovey refers to this phenomenon by the Deleuzian term 'folding', and the tensions themselves as 'twofold concepts', which recognises how contrasting concepts can co-exist, interconnect, overlap, resonate or fluidly morph into one other. Dovey describes, *"this entails the enfolding of different spaces and functions, of public with private space, and of inside with outside…[i]n this sense being emerges from becoming, identities from differences."* (2010, p. 22). Therefore assemblage theory recognises that the opposing tensions discussed within the

concept of urban commons cannot be easily separated and instead focuses attention on the dynamism between them.

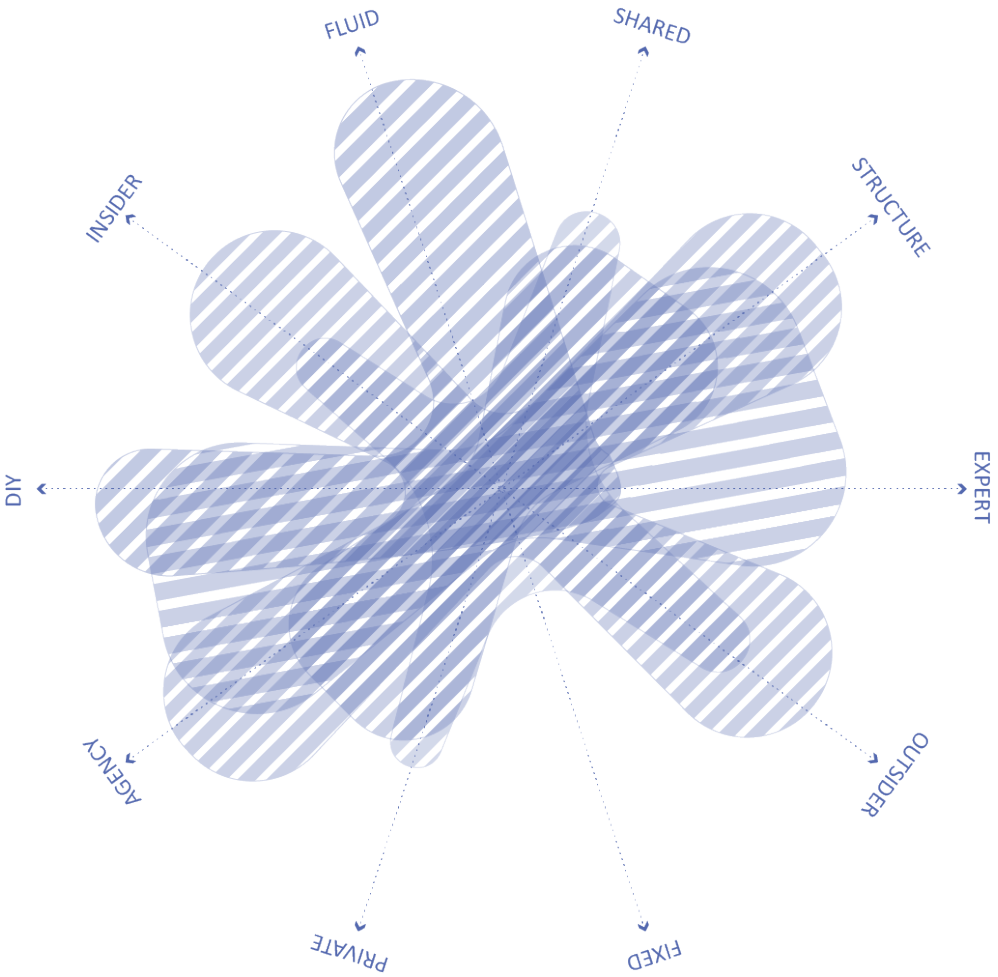


Figure 7.1. *Urban commons are an assemblage of twofold concepts that negotiate multiple slippages in response to complex urban systems.*

The fluid shifting across the spectrums of the tensions reflects a looseness between uses, meaning or categories in urban commons, and this movement can be described as a form of 'slippage'. Urban slippage is a term Dovey uses to describe Bangkok's streetscapes' dynamic and contrasting qualities (2010), and further adopted by Heath *et al.* as 'scalar slippage' to describe the merging of top-down and bottom-up approaches to urban design (Heath, Thwaites and Simpson, 2017). According to Dovey, all urban places have various degrees of 'slippage' but is often more noticeable in informal or unstable contexts, where there is an intense demand for space or negotiable forms of governance. In the discussion of cohousing and the urban commons, multiple types of slippages are described as occurring across the tensions identified. They include territorial slippages, where the boundaries between private and shared, shared and public, are more porous or flexible, or where spaces afford multiple or unfixed uses that can be adapted over time. Further examples include slippages in formality, allowing commoners to renegotiate their shared understanding between each other through

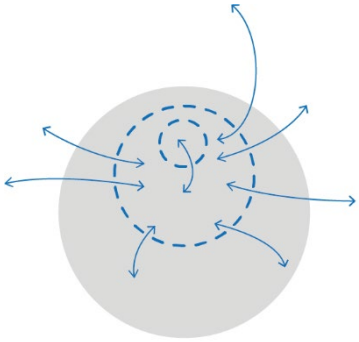
norms or policies; alongside slippages in governance, where there is a shift in decision making between individual members, the group and overarching authorities. Finally, slippages in expertise occur, like the idea of 'scalar slippage', where commoners find ways to bridge bottom-up and top-down strategies to placemaking.

How urban commons adapt and respond to complex systems through these slippages could also help play a role in their long-term success. The capacity for communities and places to handle unpredictable outside forces and adverse conditions within complex systems, continually change and adapt yet remain stable and balanced, is known as resilience (Folke *et al.*, 2010). Several other studies highlighting the potential for urban commons to build resilience (Baibarac and Petrescu, 2017; Mundoli, Manjunatha and Nagendra, 2017; Esopi, 2018; Feinberg, Ghorbani and Herder, 2020), with collective decision-making, cooperative behaviour, collective learning and governance identified as key components for building resilience (Kim and Lim, 2016). In this way, slippages, i.e. the capacity for places to change and shift, may provide an explanatory mechanism for this ability. Therefore, the term slippage is used in this context to highlight specific mechanisms or strategies that are used to afford beneficial movement between or folding of two binary concepts for urban commons. The following discussion expands upon this idea by outlining five socio-spatial mechanisms or strategies that afford slippages to occur across the identified tensions.

7.3 Concepts for urban commons

Slippage is a useful term to describe how urban commons negotiate multiple tensions and suggests ways to harness or understand what enables these slippages to occur. Dovey highlights that slippages may occur in different ways; as 'shifts', where one concept transforms to another; as 'hybrids', where two concepts exist simultaneously; as 'camouflage', where one concept is hidden by the other, or 'serially', where one concept follows the other (Dovey and Polakit, 2010). By drawing on the key patterns within the tensions identified in the cohousing cases, supported by concepts in urban commons literature and urban design theory, this section outlines five urban socio-spatial concepts associated with urban commons that enable these beneficial slippages to occur. These concepts, and their connections to the patterns and literature identified in this research, are summarised below as 'Porous boundaries', 'Layered territories', 'Incomplete forms', 'Midway practitioners', and 'Nested and networked scales'.

Porous boundaries



Defined edges of shared resources for a community of users that are adaptably porous to allow controlled access to a wider population.

Urban commons literature calls for "clearly defined boundaries" to enclose shared resources for a community (Ostrom, 1990) as well as allowing controlled wider access and inclusion (Gibson-Graham, Cameron and Healy, 2013; Esopi, 2018). Several authors refer to the need for *semi-permeable membranes* (Helfrich and Bollier, 2019), *permeable boundaries* (Parker and Schmidt, 2017), *thresholds* (Stavrides, 2015) and *"a willingness to keep boundaries somewhat porous"* (Huron, 2017, p. 4) in urban commons to safeguard resources while still allowing interaction with the wider city.

Key patterns:

- (45) Open days
- (46) Neighbourhood events
- (47) Hosting
- (56) Open gateways
- (57) Public access
- (59) Permeable buffers

Permeable thresholds were observed in cohousing cases in the patterns of open gateways (56), public access (57) and permeable buffers (59). Open or unlocked gates define and temporarily protect the site's boundaries whilst allowing the site to open to visitors or passersby. Permeable buffers between private homes and shared spaces encouraged interaction between residents and increased visual connection while creating a more comfortable distance between territories. One case allowed controlled public access to a small park and to cut through the site, and all cases held open days, neighbourhood events and hosted outside organisations to temporarily open the site to a wider audience.

Slippage across tensions:

Private ←→ shared

Insider ←→ outsider

Boundaries are recognised as important realms of social interaction in urban design theory, and their treatment *determines "the connection of urban space with the surrounding context and its integration within the city..."* (Esopi, 2018, p. 180). As opposed to barriers, thresholds are boundaries that define territories but afford transition between them. Porous boundaries can be considered something between what Sennett describes as *walls*—rigid boundaries lacking any porosity—and *borders*—a place of exchange between different communities (Sendra and Sennett, 2020, pp. 29–31). Porous thresholds afford slippage between private/shared and insider/outsider tensions by allowing controlled permeability between individual, shared and public territories.

Layered territories

Key patterns:

- (7) Policies & agreements
- (17) Pooling resources
- (20) Solo enterprise
- (30) The unwritten rules
- (36) Personalise
- (58) Small private plot
- (59) Permeable buffers
- (62) Pocket retreat

Slippage across tensions:

Private ←→ shared

Agency ←→ organisation

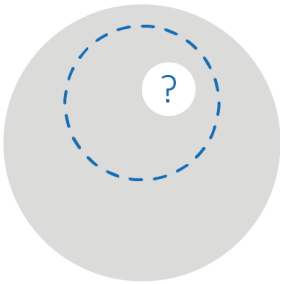
Multiple and overlapping claims to space occur simultaneously or temporally.

Land or property ownership does not necessarily define the key decision-makers or users of urban commons (Foster and Iaione, 2016). Instead, sharing practices allow wider access to, rather than ownership over, space. This allows multiple users to hold various rights over shared space, such as rights of access, use, maintenance, rule definition, and control access to others, which may be exercised simultaneously or at different times of the day. This is described by urban commons authors variously as *polyrational property* (Davy, 2014), *topology of toleration* (Chiodelli and Moroni, 2014), and *access over ownership* (Brinkø, Nielsen and Meel, 2015).

Although the land is collectively owned by the community in cohousing, more complex overlapping claims to space occur in practice. For instance, the permeable buffers (59) in front of residents' homes in the case studies were maintained and personalised individually, despite being collectively owned. These spaces, nevertheless, contributed to the overall shared spaces visually and for occasional access by other residents or children's play. Furthermore, pocket retreats (62) provided small niches that signaled a temporary individual territory within the shared outdoor spaces when occupied. Acts of personalisation and solo enterprise (47) were also tolerated within shared spaces if they were uncontroversial, free, temporary or had a wider benefit to the group. These overlapping individual and shared claims to territory were performed as unwritten rules (30) or backed up by policies and agreements (45).

Assemblage theory recognises territory as temporary and multiplicious (Dovey, 2010). Layered territory is particularly *loose* (Franck and Stevens, 2006) in that it affords multiple, temporal and subjective uses of space. The slippage between the overlapping private, shared and public claims to space are variously tolerated, contested, and then renegotiated through shifts in individual agency and group organisational policies and rules.

Incomplete forms



Accepting that places will never be complete and leaving aspects unfinished invites people to adapt them over time.

The transitory state of cities that allow urban commons to emerge and remake themselves can equally afford instability, contestation, and degradation (Foster and Iaione, 2016). On the one hand, urban commons take advantage of emergent opportunities, such as regulatory slippage, and utilise temporary experimentation, which, if successful, can lead to more permanent commoning practices. On the other hand, if those experiments fail, spaces may revert or be taken over by others. Urban commons, therefore, are continuously changing complex adaptive systems; associated with creativity and experimental renewal, where commoners *"habitually have to make do with what is available and improvise"* (Helfrich and Bollier, 2019, p. 194).

Key patterns:

- (2) An evolving vision
- (21) Self-build in stages
- (22) Quick fixes
- (23) Trial-runs & mock-ups
- (24) Reuse & repurpose
- (25) Rewilding the garden
- (28) Growing produce
- (31) Creative play
- (60) Leftover spaces
- (64) Moveable furniture
- (72) Design for adaption

In the cohousing cases studied, community dynamics and visions evolved (2), and the site gradually shaped through self-building (22), rewilding (25) and growing produce (28) over time. Communities utilised temporary and creative ways of testing ideas and adapting the site through quick fixes (22), trial-runs and mock-ups (23), reusing and repurposing local materials (24 & 29) and creative play (31). Leftover spaces (60) and moveable furniture (64) gave greater spatial potential for the site to adapt. Design practitioners work with cohousing communities also designed in adaption (72) by purposively leaving areas of the site undesigned and producing 'working plans' that communities could change over time.

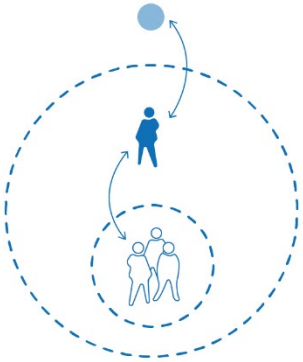
Slippage across tensions:

DIY ←→ expertise

Fixed ←→ uncertain

The concept of *incomplete form* is borrowed from Sendra and Sennett (2020) to describe the need for practitioners to create purposively unfinished spaces. It resonates with similar ideas such as *loose* (Franck and Stevens, 2006) and *smooth* space (Dovey, 2010), which have spatial characteristics that allow new practices to emerge. Incomplete forms help mediate the tensions between fixed/uncertain and DIY/expertise by providing increased opportunity for commoners to responsively adapt spaces.

Midway practitioners



Design practitioners and organisations who collaborate with communities to facilitate their involvement in placemaking.

Many scholars associate commoning as a form of placemaking (Blomley, 2008; Harvey, 2012), where end-users of shared resources shape places through collective action and governance. The literature highlights the need for communities to have the right level of support from and collaboration with professionals and governing bodies (Ela, 2017; Fox-Kämper *et al.*, 2018). The involvement of commoners in the design and implementation of urban places redefines the role of design practitioners within urban commons. It is suggested that design practitioners working with urban commoning communities require longer-term facilitative roles (Parker and Schmidt, 2017) beyond the design of the fabric of the built environment.

Key patterns:

- (8) Picture in many ways
- (67) Get to know the group
- (68) Expanded scope
- (69) Technical advisor
- (70) Group facilitator
- (71) Go between
- (72) Design for adaption

Interviews with design practitioners working with cohousing communities highlighted several facilitative roles. This included getting to know the group before designing (67), an expanded scope for working with communities at an early stage or in the longer term (68), advising, rather than specifying, technical solutions (69), facilitating group involvement in the design process (70), communicating between stakeholders (71), designing the site for later adaption (72) and communicating spatial ideas in multiple ways (8). Others reinforced these patterns (Riseborough, 2013; Devlin, Douglas and Reynolds, 2015; Ruiu, 2016a; Hammond, 2018), who identified design practitioners as potential *middle agents* (Fernandez Arrigoitia and Tummers, 2019).

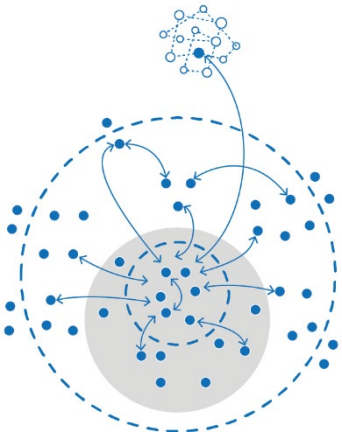
Slippage across tensions:

DIY ←→ expertise

Fixed ←→ uncertain

Many urban theorists call for a collaborative design approach to combine bottom-up and top-down processes of placemaking and underpins the ethos of pattern languages as a tool to enable this to happen (Alexander *et al.*, 1977; Alexander, 1979). Reconceptualising design practitioners as midway professionals focusing on social facilitation skills could help ease the slippage between a DIY ethic and professional expertise, referred to by Heath *et al.* (2017) as *scalar slippage*.

Nested and networked



Key patterns:

- (9) Signposting
- (10) Open channels
- (13) Having a say
- (12) Smaller working groups
- (11) Whole group consensus
- (37) Networks & hubs
- (39) Learning from peers
- (42) Point of contact
- (71) Go-between

Resolved tensions:

Agency ←→ organisation

DIY ←→ expertise

Urban commons operate across nested and networked scales to distribute power and governance across multiple centres.

Scaling up commons to the urban, national and global scales remains a challenge (Thompson, 2015; Feinberg, Ghorbani and Herder, 2021). Several scholars suggest overcoming this using a *polycentric* model, where governance is distributed across multiple stakeholders at different levels, avoiding top-down, centralised regulation (Ostrom, 2012; Foster and Iaione, 2016). This results in a nested governance system—where local small-scale commons integrate within wider governing frameworks—alongside horizontal sharing of knowledge and resources through peer-to-peer networks. Helfrich and Bollier (2019) refer to the combination of hierarchically and horizontally distributed governance as a *heterarchy*. At the urban scale, urban commons are nested within hierarchical spheres of neighbourhood, city, national and global, and horizontally connected to wider networks.

Both nested hierarchical and horizontally networked scales of sharing and governance were observed in cohousing. Decision-making was distributed through signposting (9) and open channels (10) across scales of individual residents (13), smaller working groups (12) and the whole group (11). Cohousing groups negotiated local and national planning frameworks and governing bodies, often through design practitioners acting as a go-between (71). Cohousing communities established connections with local neighbourhood groups and shared knowledge through wider networks and hubs (37) to learn from peers (39), with member often acting as the main point of contact (42).

Nested and networked scales chimes with the need to share knowledge between multiple stakeholders in placemaking (Dempsey, Burton and Smith, 2014), to create slippage between agency/structure and DIY/expertise. It also recognizes that urban commons emerge from and contribute to complex territorial networks of nested private, shared and public spheres within wider urban spatial networks.

7.4 Conclusion

This chapter links the cohousing specific research findings on residents' involvement in shared outdoor spaces with the wider debates of urban commons to further develop and underpin urban commons theory with empirical examples. This chapter meets objective 3 – *to contribute to the theory of urban commons* – and addresses the lack of connection between urban and commons theory in the following ways. Firstly, this chapter demonstrates the links between the tensions experienced in cohousing and the wider debates within urban commons discourse. Secondly, it reframes the apparent paradoxes of urban commons as characteristic and dynamic slippages that occur within a broader urban assemblage. And thirdly, it links together urban design and commons theory to outline five urban commons concepts that afford these slippages.

This discussion outlines a new perspective on how urban commons operate through liminal approaches in a larger dynamic urban assemblage. It highlights urban commoning as a process that utilises middle ground strategies that make the most of cities' in-betweenness, ambiguity, multiplicity, complexity, and potentiality. This research captured five types of slippages involved in urban commons within the specific context of cohousing. In addition, there is evidence of more potential slippages associated with urban commons that aren't covered here, such as the mixing of rural characteristics and practices in an urban context. A further example is highlighted in the ability of urban commons to occupy the in-between spaces of the law as described by Gidwani and Bavisake: *"[t]he commons, historically and etymologically, are that which lie at the frontiers, or within the interstices, of the territorial grid of law…constantly negotiating, rebuffing, and evading the fixity of law.* (2011, p. 42). Therefore, this discussion proposes that the ability of urban commons to encompass or mediate the multiple dualities that exist within cities as one of its defining characteristics is worth further exploration.

Further to this, the five concepts that utilise in-between strategies to negotiate the challenges of commoning within diverse, complex and dynamic urban contexts are presented as potential strategies for application in urban design practice. Firstly, the idea of porous boundaries encourages design practitioners and commoners to include physical and symbolic boundaries that help define and protect shared spaces while allowing for controlled points of wider open access. Secondly, the concept of layered territories challenges design practitioners and commoners to consider the more complex and multiple ways the spaces they design may be used, occupied and managed over time, potentially in contrast to the legal ownership or traditional territorial boundaries. Thirdly, the concept of incomplete spaces further emphasises the likely unfinished nature of the initial design and construction of the outdoor spaces. This encourages design practitioners to focus on providing aspects that require higher levels of technical expertise and skills while leaving other areas unplanned or

undetailed in consultation with and as appropriate to the level of involvement commoners wish to have. Fourthly, the midway practitioner concept brings attention to the need for design practitioners to have additional facilitating roles and skills in urban commons projects that may impact the extent of their involvement and associated costs, time and agreements. Finally, nested and networked scales ask both design practitioners and commoners to consider the connectedness of urban commons, within top-down, bottom-up, across horizontal networks and within the wider neighbourhood or urban context. Therefore, stakeholders should look for ways to develop beneficial contacts, utilise existing information hubs, and integrate with local organisations and spaces. The next and final chapter will further summarise the contributions to knowledge within this thesis, including a discussion of its limitations and the scope for further research.

8 CONCLUSION

8.1 Research overview

This thesis contributes to the understanding of urban commons from the perspective of residential urban design by identifying patterns of resident involvement in cohousing landscapes and developing a tool for sharing this with others. The thesis identifies gaps in the knowledge of urban commons theory and methods for harnessing and sharing this information across residential groups and in collaboration with design practitioners. The literature review in Chapter 2 highlights four main issues. Firstly, an empirical gap in the holistic understanding of how urban commoning is enabled in the context of residential landscapes. Secondly, a practice gap between the contribution of urban commoning to placemaking and the role of design practitioners in their implementation. Thirdly, a methodological gap in developing a pattern language as a practical tool to address these issues. Fourthly, a theoretical gap in understanding urban commons from an integrated socio-spatial urban design perspective.

This thesis interrogates cohousing landscapes as an example of urban commoning in residential landscapes to address these gaps. The research uses an assemblage ontology to holistically approach the research on urban commons and the idea of pattern languages to capture the multifaceted enabling practices and challenges of urban commoning in cohousing landscapes (Chapter 3). Pattern languages provide a practical communicative tool to address the gap between bottom-up and top-down approaches to urban commons. As such, chapters 3 & 4 outline a methodology for developing a pattern language from empirical cohousing cases. This is achieved by combining the key phases of pattern language development from previous studies with a grounded theory approach. The methodology uses qualitative ethnographic methods to capture urban commoning solutions from multiple perspectives and a grounded analytical approach to identify commonly occurring patterns and explore emergent concepts and themes. Chapter 4 reflects on how the methodology was implemented during the research process and its adaption in response to the unforeseen pandemic midway through data collection.

Chapter 5 presents a pattern language of urban commoning in cohousing landscapes as a set of 72 patterns summarised on playing cards; then explores their relationships with each other as a language and gives examples of how the language can be played as a card game by residential communities. This highlights several tensions associated with urban commoning in cohousing landscapes that frame the thick descriptions of the challenges the cohousing communities face and the patterns' role in resolving these tensions in Chapter 6. Together, the tensions and patterns from the cohousing case studies provide a framework to make sense of the conflicting debates within urban commons discourse in Chapter 7 and reframe them as slippages within the urban assemblage. Finally, drawing upon urban design theory outlined in the literature review, Chapter 2 concludes with five socio-spatial ideas for negotiating the slippages in urban commons. This chapter will summarise its main contributions, impact, limitations, and future research directions to conclude the thesis.

8.2 Contributions to knowledge

This thesis makes four key contributions (methodological, empirical, practical and theoretical) to the knowledge of participatory involvement in residential landscapes, cohousing, pattern languages and urban commons.

1 | A grounded pattern methodology

This thesis develops a methodology for creating a pattern language based on a grounded theory approach to qualitative case study analysis. As a widely recognised methodology in the social sciences, a grounded theory approach provides additional rigour in operationalising pattern language methodologies and building theory from patterns grounded in real-world examples. The thesis demonstrates how the grounded pattern methodology can be applied in cohousing landscapes to capture multifaceted and interconnected solutions and problems at the human scale. The methodology, therefore, provides a holistic approach to studying urban commons that recognises the assemblage of social, spatial and organisational relationships. Further to this, the grounded theory approach encourages the exploration of the relationships between patterns to identify emergent categories and themes as components of theory building. This additional stage is seldom applied in pattern language studies, and therefore this demonstrates a novel way of using pattern languages to develop theory and their practical use as a design tool. This methodological contribution answers the research question: '*How can a pattern language methodology be developed to study cohousing landscapes as urban commons?*' as part of research objective 2 *(to develop a pattern language for urban commoning in cohousing landscapes)*. This methodology can be of value to researchers studying placemaking, community participation, or other aspects of urban form at the human scale and those interested in approaches to pattern research more generally.

2 | Case studies of resident involvement in cohousing landscapes

In applying the grounded pattern methodology in cohousing, this thesis documented four detailed cases of urban commoning practices in the UK. First-hand experiences and observations, interviews with residents and practitioners, video diaries and document analysis of residents' involvement in cohousing landscapes are summarised in four detailed case study reports. The case studies provide detailed empirical evidence of cohousing residents' participation in shared outdoor spaces, structured around the prevalent urban commoning solutions identified through this research. This provides an authentic and balanced account of residents' experiences with a specific focus on the outdoor spaces during the post-occupancy phase of UK cohousing, expanding upon the predominant emphasis on advocacy, architecture and design phase in the existing cohousing literature. This highlighted the many aspects of placemaking that fall outside the realm of the design profession, the adaptive mechanisms of cohousing communities and the different roles and skills required of design practitioners. Alongside contributions to cohousing discourse summarised in the concluding section of Chapter 6, the cases form the basis for evidencing the multiple spectrums or tensions that cohousing communities negotiate through their involvement in shared outdoor spaces. In addition to providing the evidence base to help answer the research question: *What patterns of urban commoning can be found within cohousing landscapes?* Within objective 1, the cases offered further empirical examples of the spatial practices, social dynamics, and organisational structures within cohousing communities. Therefore, the empirical findings from these cases will be of interest to researchers and communities working in the field of community-led housing who want to learn from the experiences of existing urban cohousing groups in the UK.

3 | An actionable tool for urban commoning in cohousing landscapes

This research produces a pattern language documenting the commonly used solutions for urban commoning in cohousing landscapes. The patterns are identified through a cross-case analysis of findings and communicate multiple ways of creating the conditions required for getting residents involved in cohousing landscapes. The pattern language is presented as a deck of cards to be used as an actionable tool to help both designers and communities utilise shared residential landscapes as urban commons. Therefore, the patterns are presented in a way that is easy to understand to be used collaboratively to prompt new ways of commoning. The pattern language is intended to communicate and share existing solutions for getting residents involved in shared landscapes that prompt communities to adapt and implement these ideas in their own spaces. The patterns provide an initial vocabulary for urban commoning to help cohousing communities and design practitioners share and communicate ideas. The initial workshops helped confirm the findings of this research and demonstrated that residents and students were able to effectively understand the patterns and that

these prompted new ideas. In addition, the workshops highlighted other potential ways of delivering the card game and the potential for further exploration of the uses and format of the game. Together with the case studies, the pattern language card deck answers the research question: *What patterns of urban commoning can be found within cohousing?* Alongside the grounded pattern methodology, this contribution meets research objective 2 *(to develop a pattern language for urban commoning in cohousing landscapes)*. The pattern language card game is a practical tool designed specifically for emerging and established cohousing communities, alongside design practitioners, organisations or researchers who work with them. Included in the pattern language are six patterns outlining the roles of design practitioners, which act as useful recommendations for designers working with community-led housing groups. Further to this, the card game has the potential to be tested for use in wider residential placemaking contexts. The patterns themselves document key problems and solutions, findings that may be of value to researchers studying placemaking, community participation and other aspects of urban form at the human scale.

4 | Concepts for understanding urban commons as assemblages

An important contribution of this research is linking the tensions and patterns experienced in cohousing with wider debates on the urban commons. By reframing the tensions in cohousing as slippages in an urban commons assemblage, this thesis presents five socio-spatial concepts applicable to urban commons: porous boundaries, layered territories, incomplete forms, midway practitioners, and nested and networked scales. Given the limited spatial understanding of urban commons and the challenges in applying the idea in design practice, these concepts help to reorientate urban commons thinking to be more easily integrated with urban design theory. This theoretical contribution answers the research question: *How can urban design and commons theory be integrated to make urban commons more applicable in urban design?* The theoretical work in this thesis contributes to wider discussions around cities as open systems, resilient urban design, and adaptable spatial forms. These concepts, alongside the reframing of urban commons as assemblages, are of value to academics and researchers working in fields relating to urban studies.

8.3 Impact & Implications

This research aimed to identify what enables residents' involvement in shared residential landscapes through UK cohousing cases. The intention underpinning this aim was to provide a step towards understanding how community-managed residential landscapes can be successfully implemented so that the potential benefits (summarised in Chapter 1 and section 2.1) can be more widely available. In doing so, the research aimed to tackle the gaps between top-down and bottom-up approaches to urban residential placemaking in the UK. This included finding a way to study such

phenomena in complex urban environments, creating a practical research output for the people involved in residential placemaking and reorientating urban commons theory for urban design. The research actions undertaken to address these gaps included developing a methodology for studying the complexities of urban places, creating a pattern language card game for cohousing groups, and outlining concepts for implementing residential urban commons in design practice.

The participatory nature of the research methodology resulted in an impact being made during the research process. This was achieved firstly through my direct involvement in cohousing communities, volunteering on workdays, as a bottom-up approach to research impact. Although these impacts, such as gardening and building tasks, contributing design ideas or suggestions, and sharing relevant resources and contacts, took place at the micro-scale, they nonetheless created an instant and tangible impact welcomed by residents. Making a small but tangible impact helped build trust with research participants and hopefully contributed to breaking the negative cycle of research fatigue and disappointment experienced by residents. Secondly, the impact was created by presenting research findings to participating cohousing communities and other community-led homes groups through online presentations (described in sections 4.3) and workshops (described in section 5.4). This provided a first stage in disseminating the findings directly to a small sample of residential communities, which prompted reflections and discussions on their approach to their involvement in shared residential landscapes. In one case, this led to residents describing their intention to develop their own version of the pattern: a pocket retreat (62). The workshops prompted cohousing residents and design students to use the patterns to consider new ideas for designing, using and managing shared outdoor spaces over time. A further example of how the pattern language card game impacted one cohousing community and their intentions for how they will use the card game in the future is described below:

> *"Your research findings have been so worthwhile for us as a developing cohousing community…the 7[2] cards more or less encapsulate the issues that have been played out within [our cohousing community over] the last [few] years. In my opinion, they go much wider than considerations of the landscape and outside spaces – the scenarios on the cards more or less capture all aspects of trying to develop a community – rather than just attempting to build a comfortable block of flats or a gated community…each of the cards could start a valuable discussion for [our] members – this would help new members understand some of the grappling within the group that has gone before, but also be a way of all of us bonding over what 'we' collectively want for the future."* —Participating resident

The potential impact of the pattern language card game has yet to be fully explored and is itself considered open-ended as the intention is that it continues to evolve, be added to, and adaptively interpreted by communities as necessary through future research and practice. The study has had a further impact through more traditional routes of research dissemination, including the publication

of a paper in the first year of this research, making a first step towards linking urban and commons theory (Felstead, Thwaites and Simpson, 2019), and papers and posters presented at several conferences and symposiums. These outputs have framed the concept of urban commons within landscape architecture and urban design for academics wanting to use the idea in these fields and prompted discussions and feedback from academic peers.

The findings of this research are significant in their contribution to understanding how top-down and bottom-up approaches to placemaking can be combined or negotiated. This is achieved through the pattern language output as a way of overcoming to-down and bottom-up polarity and enable more inclusive and accessible forms of decision making. This has wider implications for cohousing research practice, communities, design practice, and policymakers.

Firstly, future research in community-led housing and participatory design should consider how the methodology can incorporate bottom-up impact through involvement in the placemaking process and disseminating the findings to participants in meaningful ways. In particular, creative methods for engaging a wider range of cohousing residents can help to avoid re-interviewing the 'usual suspects'. This is particularly important in the cohousing context, where research fatigue has become a problem, ensuring residents continue to feel open to meaningful and beneficial research in the future. Cohousing communities should be aware that they can outline their own conditions for participating in research or even reach out to research institutions with their research proposals to maximise the potential benefits of taking part in the research. Secondly, cohousing communities should be aware of the range of skills design practitioners can provide and consider how they can potentially utilise these in the development process and the potential savings and costs involved. This will impact who they decide to work with and the scope and extent to which the design practitioner is engaged in the development. Thirdly, the additional roles and skills highlighted in the research findings have implications for both the education and potential specialisms in design practice. Opportunities for design professionals to build facilitative skills in universities or CPD events are required to develop specialisms in bridging top-down and bottom-up placemaking initiatives. This may require a shift in how design services are procured so that contracts and fees accurately reflect the input needed and clarify everyone involved. Finally, policymakers should consider bringing in longer-term and more stable policies, funding initiatives and support networks for community-led housing. This would reflect the length of time it takes to get cohousing projects off the ground and lessen the additional risks and uncertainties that currently limit the accessibility of cohousing in the early stages.

8.4 Limitations & Future research

The urban commons concepts

The patterns and tensions identified across the four cohousing case studies are linked to the broader idea of urban commons by drawing parallels with similar debates and concepts within urban commons literature. In this way, the cohousing case studies provide specific empirical evidence to support the concept and theory of the urban commons. The concepts proposed in Chapter 7 are specific to examples of urban commons that are spatial or tangible and therefore may have less relevance to intangible forms of commons such as online resources. In addition, there are aspects of the tensions and concepts that may be more related to a residential context, i.e., the tensions between privacy and sharing. However, there is potential for these concepts to be used as a framework to further explore the social-spatial complexities of a wider variety of urban commons and further generalise these beyond the residential context of this research.

The cohousing case studies

This research gained detailed insight into four cohousing cases in the UK. Although the cohousing case studies originally contacted and visited were in different areas across England, the pandemic restrictions reduced the scope of case studies to those where residents had already been interviewed. This resulted in the selection of cohousing cases located primarily in the North of England. The research findings may be limited in their generalisation to the rest of England and the UK due to regional differences in the UK housing market and the devolved nations' planning and policies regarding community-led housing. These limitations were mitigated to an extent by drawing on the wider cohousing literature to highlight parallels and differences between other cohousing studies in the UK and internationally. However, to further understand its relevance and application, there remains scope to test the pattern language in a wider variety of cohousing contexts, across the UK or in more established examples found internationally. This could identify new patterns that weren't observed in the limited cases studied and demonstrate if some are more relevant to specific contexts than others.

Sample of cohousing residents interviewed

The residents interviewed in this research were predominantly older and well-educated, generally reflecting the anecdotal descriptions of cohousing population demographics. However, there is little demographic survey data on cohousing populations in the UK to give an accurate picture of the diversity of residents and to understand how reflective these views are of cohousing populations generally. These results reflect the views of residents' who self-selected to be involved in the research—those who had the time, interest, previous academic experience or who just felt comfortable talking

with me. Interestingly, this captured residents who were both key participating members of landscape or gardening working groups and residents who had a more passive interest in the outdoor spaces. The results also captured the views of both founding and new members of cohousing and those who felt cohousing was a positive experience and those who spoke more critically. Therefore, I remained open-minded during interviews that I was only over getting 'one side of the story' at a time from the perspective of that resident. However, future research should capture demographic survey data on community-led housing populations in the UK to give an accurate picture of the people.

Despite the considerable restrictions, the pandemic also created an emergent opportunity to diversify the range of ages of participants in the research, including a young family who was looking for ways to occupy their time while home-schooling their children with the more creative video diary method. This unexpectedly captured some rich data on how children interacted with the shared outdoor spaces and other residents in cohousing. Although the research didn't set out to capture children's perspectives in cohousing, it revealed that they are important but currently overlooked demographic in cohousing. At the same time, children potentially have a lot to gain from the increased interaction with other resident children and adults and access to often larger and varied landscapes within cohousing. I have yet to come across any research focusing on children's experiences in cohousing landscapes, and therefore, this deserves further attention in future research. Employing fun methods can help engage children and further understand the potential benefits and drawbacks of playing in the shared outdoor spaces of cohousing.

External perspectives on cohousing

This research captured residents' involvement in shared cohousing landscapes from the perspective of residents who lived within the cohousing development, design practitioners who collaborated with residents in the design and delivery of outdoor spaces, and from the researcher's own experience of being involved in workdays and events. Although I originally intended to interview neighbours and neighbouring organisations surrounding the cohousing cases, this was not possible due to limitations in accessing the field and scaling back of the research imposed by the pandemic. Although residents appeared to speak candidly about their sometimes-strained relationships with neighbours, it wasn't possible to hear this side of the story from their neighbours' perspective. For example, it would have been interesting to hear from the neighbours surrounding Timber Lane cohousing, whose residents had gone further than other cases to make the site accessible to the wider neighbourhood.

In addition to neighbours, the views of prospective residents who dropped out of the process or those who would otherwise not choose to live in cohousing were not captured. It became evident that the cohousing model wasn't appropriate for all residents, with at least one resident permanently

moving out during the research. There were also anecdotes of previous members leaving or being "weeded out" during the arduous setting up a new cohousing scheme. This research highlights the potential and significant barriers to prospective members moving into cohousing. Therefore, future cohousing research should try to gain a wider external perspective on cohousing through the experiences of surrounding neighbours, residents who have chosen to move out of cohousing, and prospective members who are struggling to gain access to or subsequently changed their minds about moving into cohousing.

Internal confirmation of patterns and tensions

This research achieves a higher level of internal validity by interviewing multiple residents within each case study and presenting the patterns to the cohousing groups involved in presentations and workshops to gain feedback. However, due to the pandemic and limits in revisiting some of the case studies, it was impossible to get direct feedback on the pattern languages from all the cohousing cases involved. In retrospect, an alternative to interviewing residents separately would have been to hold workshops or focus groups earlier to discuss the challenges and solutions for getting residents involved in the shared outdoor spaces as a group. This would have allowed for the opportunity to observe the social dynamics of the group first-hand, gain multiple perspectives in a shorter amount of time, and enable residents to think through problems as a group and present new ideas. This could have allowed for more action research, where residents were prompted to recognise and propose new solutions during the focus groups. However, focus groups may also have prevented some residents from talking about the more controversial aspects and disagreements with other residents that emerged from the individual interviews. Therefore, future research utilising pattern language methodologies could explore the benefits and drawbacks of using individual interviews over workshops and focus groups.

The application of the pattern language card game in cohousing and beyond

This research has initially tested the pattern language card game through on-site and online workshops and presentations with cohousing residents and students. This confirmed some of the patterns identified in the research and illustrated the potential impact and application of the card game in practice. However, the pattern language card game has yet to be tested as part of the participatory design process between cohousing communities and design practitioners. Further testing is required to understand how useful the card game is as a communication tool between cohousing communities and design practitioners, with follow-ups to see if any ideas from the workshop have been implemented in practice. Further, it would be interesting to see how applicable or adaptable the pattern language card game is in other housing models and residential landscape settings. Although the pattern language card game was more successful in person as a physical game

and did not translate as well online, it would be useful to explore other formats and ways of making the pattern language card game more accessible and allowing users to make suggestions and adaptions to the patterns as needed. The scope for building on the findings of this research is extensive. This thesis has contributed to the growing body of empirical evidence into cohousing as an important residential landscape in the UK and beyond; it is hoped to be a catalyst for future research.

REFERENCE LIST

Adams, D., Hardman, M. and Larkham, P. (2015) 'Exploring guerrilla gardening: gauging public views on the grassroots activity', *Local Environment*, 20(10), pp. 1231–1246. doi: 10.1080/13549839.2014.980227.

Addley, E. (2020) 'Making up with the Joneses: how Covid-19 has brought neighbours closer', *The Guardian*. Available at: https://www.theguardian.com/world/2020/jun/05/neighbourliness-to-the-fore-its-been-the-highlight-of-our-lockdown.

Aernouts, N. and Ryckewaert, M. (2018) 'Beyond housing: on the role of commoning in the establishment of a Community Land Trust project', *International Journal of Housing Policy*, 18(4), pp. 503–521. doi: 10.1080/19491247.2017.1331592.

Ahn, J., Tusinski, O. and Treger, C. (2018) *Living closer*. Studio Weave in collaboration with the RIBA. Available at: https://drive.google.com/file/d/1zT3YjL9HUloB66S20hjGIfOCt9RdD-TB/view.

Alexander, C. *et al.* (1977) *A Pattern Language*. 38th edn. New York, USA: Oxford University Press.

Alexander, C. (1979) *The Timeless Way of Building*. New York, USA: Oxford University Press.

Antona, L. (2019) 'Making hidden spaces visible: Using drawing as a method to illuminate new geographies', *Area*, 51(4), pp. 697–705. doi: 10.1111/area.12526.

Arefi, M. and Kickert, C. (eds) (2019) *The Palgrave Handbook of Bottom-Up Urbanism. Collaborative Design as Politics by Other Means*. Springer International Publishing AG.

Armstrong, D. (2000) 'A survey of community gardens in upstate New York: Implications for health promotion and community development', *Health and Place*, 6(4), pp. 319–327. doi: 10.1016/S1353-8292(00)00013-7.

Arnstein, S. R. (1969) 'A Ladder Of Citizen Participation', *Journal of the American Institute of Planners*, 35(4), pp. 216–224. doi: 10.1080/01944366908977225.

Arnstein, S. R. (2019) 'A Ladder of Citizen Participation', *Journal of the American Planning Association*, 85(1), pp. 24–34. doi: 10.1080/01944363.2018.1559388.

Augé, M. (2008) *Non-places: introduction to an anthropology of supermodernity*. London, UK: Verso.

Axelsson, J. (2014) *Together on our own: the meaning and position of the residential community*. Master's Thesis. Chalmers University of Technology. Available at: https://publications.lib.chalmers.se/records/fulltext/203610/203610.pdf.

Baibarac, C. and Petrescu, D. (2017) 'Open-source Resilience: A Connected Commons-based Proposition for Urban Transformation', in *Urban Transitions Conference, Shanghai, September 2016*. Procedia Engineering, pp. 227–239. doi: 10.1016/j.proeng.2017.07.157.

Baker, T. and McGuirk, P. (2017) 'Assemblage thinking as methodology: commitments and practices for critical policy research', *Territory, Politics, Governance*, 5(4), pp. 425–442. doi: 10.1080/21622671.2016.1231631.

Banham, R. (1961) *Park Hill housing, Sheffield*, *Architectural Review*. Available at: https://www.architectural-review.com/archive/reyner-banham-on-park-hill-sheffield-uk.

Beck, A. F. (2020) 'What Is Co-Housing? Developing a Conceptual Framework from the Studies of Danish Intergenerational Co-Housing', *Housing, Theory and Society*, 37(1), pp. 40–64. doi: 10.1080/14036096.2019.1633398.

Berggren, H. M. (2020) 'Is cohousing good for democracy? Comparing political participation among residents of cohousing communities and traditional condominium developments', *Housing and Society*, 47(3), pp. 189–214. doi: 10.1080/08882746.2020.1778991.

Berleant, A. (1997) *Living in the Landscape: Toward an Aesthetics of Environment*. Kansas, USA: University Press of Kansas.

Block, E. S. and Erskine, L. (2012) 'Interviewing by telephone: Specific considerations, opportunities, and challenges', *International Journal of Qualitative Methods*, 11(4), pp. 428–445. doi: 10.1177/160940691201100409.

Blomley, N. (2008) 'Enclosure, common right and the property of the poor', *Social and Legal Studies*, 17(3), pp. 311–331. doi: 10.1177/0964663908093966.

Bloor, M. and Wood, F. (2006) *Keywords in Qualitative Methods: A Vocabulary of Research Concepts*. London, Uk: SAGE Publications Ltd.

Bollier, D. (2007) 'The growth of the commons paradigm', in Hess, C. and Ostrom, E. (eds) *Understanding knowledge as a commons: From Theory to Practice*. Cambridge, MA, USA: The MIT Press, pp. 27–40. doi: 10.1002/asi.

Boonstra, B. (2016) 'Mapping trajectories of becoming: Four forms of behaviour in co-housing initiatives', *Town Planning Review*, 87(3), pp. 275–296. doi: 10.3828/tpr.2016.20.

Bouma, J. and Voorbij, L. (2009) 'Factors in social interaction in cohousing communities', in Durmisevic, E. (ed.) *Conference Proceedings of CIB W115 Construction Material Stewardship, Lifecycle Design of Buildings, Systems and Materials*. Enschede, The Netherlands, 12-15 June, pp. 100–104.

Boydell, S. and Searle, G. (2014) 'Understanding property rights in the contemporary urban commons', *Urban Policy and Research*, 32(3), pp. 323–340. doi: 10.1080/08111146.2014.901909.

Bradley, Q. (2008) 'Capturing the castle: Tenant governance in social housing companies', *Housing Studies*, 23(6), pp. 879–897. doi: 10.1080/02673030802425610.

Bradley, Q. and Sparling, W. (2017) 'The Impact of Neighbourhood Planning and Localism on House-building in England', *Housing, Theory and Society*, 34(1), pp. 106–118. doi: 10.1080/14036096.2016.1197852.

Brannick, T. and Coghlan, D. (2007) 'In defense of being "native": The case for insider academic research', *Organizational Research Methods*, 10(1), pp. 59–74. doi: 10.1177/1094428106289253.

Brenton, M. (1998) *We're in Charge: Cohousing Communities of Older People in the Netherlands—Lessons for Britain?* Bristol, UK: Policy Press.

Brenton, M. and Argent, H. (2020) 'Growing older and remaining empowered: the cohousing model', *Nursing and Residential Care*, 22(4), pp. 1–3. doi: 10.12968/nrec.2020.22.4.10.

Bresnihan, P. and Byrne, M. (2015) 'Escape into the city: Everyday practices of commoning and the production of urban space in Dublin', *Antipode*, 47(1), pp. 36–54. doi: 10.1111/anti.12105.

Brinkø, R., Nielsen, S. B. and Meel, J. Van (2015) 'Access over ownership – a typology of shared space', *Facilities*, 33(11–12), pp. 736–751. doi: 10.1108/F-11-2014-0094.

Brownhill, S. and Bradley, Q. (eds) (2017) *Localism and Neighbourhood Planning*, *Localism and Neighbourhood Planning: Power to the People?* Bristol, UK: Policy Press. doi: 10.4324/9781351203319-9.

Building Better Building Beautiful Commission (BBBC) (2020) *Living with beauty: Promoting health, well-being and sustainable growth*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/861832/Living_with_beauty_BBBBC_report.pdf.

Burton, M., Dempsey, N. and Mathers, A. (2014) 'Connecting making and keeping: design and management in place-keeping', in Dempsey, N., Smith, H., and Burton, M. (eds) *Place-keeping: Open Space Management in Practice*. Oxon: Routledge.

Campbell, L. and Wiesen, A. (eds) (2012) *Restorative Commons: Creating Health and Well-being through Urban Landscape. General Technical Report NRS-P-39, U.S. Department of Agriculture*. Newtown Square, PA, USA: USDA Forest Service. doi: 10.3368/er.30.3.244.

Carpiano, R. M. (2009) 'Come take a walk with me: The "Go-Along" interview as a novel method for studying the implications of place for health and well-being', *Health and Place*, 15(1), pp. 263–272. doi: 10.1016/j.healthplace.2008.05.003.

Castell, P. (2006) 'Space for community - The study of resident involvement in neighbourhood space management', *WIT Transactions on Ecology and the Environment*, 93, pp. 703–712. doi: 10.2495/SC060671.

Castell, P. (2010) 'Involving Tenants in Open Space Management: Experiences from Swedish Rental Housing Areas', *Urban Geography*, 31(2), pp. 236–258. doi: 10.2747/0272-3638.31.2.236.

Cavalcanti, A. R. C. (2017) 'A Pattern Language of Self Construction: pedagogic tool to understand the spaces and social practices of Brazilian Favelas.', *Archdaily*, pp. 1–19. Available at: https://www.archdaily.com.br/br/880403/uma-linguagem-padrao-da-autoconstrucao-ferramenta-para-compreender-os-espacos-e-as-praticas-sociais-das-favelas-brasileiras.

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. doi: 10.1111/1468-2427.12009.

Chatterton, P. (2014) *Low Impact Living: A Field Guide to Ecological, Affordable Community Building*. London, Uk: Routledge.

Cheshire, P., Hilber, C. and Schoni, O. (2021) *The pandemic and the housing market: a British story*. Available at: https://cep.lse.ac.uk/pubs/download/cepcovid-19-020.pdf.

Chiodelli, F. (2015) 'What is really different between cohousing and gated communities?', *European Planning Studies*, 23(12), pp. 2566–2581. doi: 10.1080/09654313.2015.1096915.

Chiodelli, F. and Baglione, V. (2014) 'Living together privately: for a cautious reading of cohousing', *Urban Research and Practice*, 7(1), pp. 20–34. doi: 10.1080/17535069.2013.827905.

Chiodelli, F. and Moroni, S. (2014) 'Typology of spaces and topology of toleration: City, pluralism, ownership', *Journal of Urban Affairs*, 36(2), pp. 167–181. doi: 10.1111/juaf.12028.

Chun Tie, Y., Birks, M. and Francis, K. (2019) 'Grounded theory research: A design framework for novice researchers', *SAGE Open Medicine*, 7, pp. 1–8. doi: 10.1177/2050312118822927.

Colding, J. *et al.* (2013) 'Urban green commons: Insights on urban common property systems', *Global Environmental Change*, 23(5), pp. 1039–1051. doi: 10.1016/j.gloenvcha.2013.05.006.

Colquhuon, I. (2008) *RIBA book of British housing: 1900 to the present day*. 2nd edn. London, UK: Architectural Press.

Community Led Homes (2018a) *About us*. Available at: https://www.communityledhomes.org.uk/about-us (Accessed: 5 January 2022).

Community Led Homes (2018b) *Community Led Housing Data, communityledhomes.org.uk*. Available at: https://www.communityledhomes.org.uk/community-led-housing-data (Accessed: 4 January 2022).

Community Led Homes (2018c) *Types of community-led housing*. Available at: https://www.communityledhomes.org.uk/types-of-community-led-housing (Accessed: 10 July 2019).

Coolen, H. and Meesters, J. (2012) 'Private and public green spaces: Meaningful but different settings', *Journal of Housing and the Built Environment*, 27(1), pp. 49–67. doi: 10.1007/s10901-011-9246-5.

Cooper Marcus, C. (2003) 'Shared Outdoor Space and Commnity Life', *Places*, 15(2), pp. 32–41.

Cooper Marcus, C. and Sarkissian, W. (1988) *Housing As If People Mattered: Site Design Guidelines for the Planning of Medium-Density Family Housing (california Series In Urban Development)*. 1st edn. Berkeley, USA: University of California Press.

Corrigan, M. P. (2011) 'Growing what you eat: Developing community gardens in Baltimore, Maryland', *Applied Geography*, 31(4), pp. 1232–1241. doi: 10.1016/j.apgeog.2011.01.017.

Crawford, G. *et al.* (2018) 'A Pattern Language for Designing Regenerative Refugee Camps', in Sickinger, R., Baumgartner, P., and Gruber-Mucke, T. (eds) *Pursuit of Pattern Languages for Societal Change 2017: A comprehensive perspective of current pattern research and practice*. Krems, pp. 82–99.

Crossan, J. *et al.* (2016) 'Contesting Neoliberal Urbanism in Glasgow's Community Gardens: The Practice of DIY Citizenship', *Antipode*, 48(4), pp. 937–955. doi: 10.1111/anti.12220.

Czischke, D. (2018) 'Collaborative housing and housing providers: towards an analytical framework of multi-stakeholder collaboration in housing co-production', *International Journal of Housing Policy*, 18(1), pp. 55–81. doi: 10.1080/19491247.2017.1331593.

Davy, B. (2014) 'Polyrational property: Rules for the many uses of land', *International Journal of the Commons*, 8(2), pp. 472–492. doi: 10.18352/ijc.455.

Dawes, M. J. and Ostwald, M. J. (2017) 'Christopher Alexander's A Pattern Language: analysing, mapping and classifying the critical response', *City, Territory and Architecture*, 4(1), pp. 1–14. doi: 10.1186/s40410-017-0073-1.

Deming, M. E. and Swaffield, S. R. (2011) *Landscape Architectural Research: Inquiry, Strategy, Design*. Hoboken, NJ, USA: Wiley.

Dempsey, N. and Burton, M. (2012) 'Defining place-keeping: The long-term management of public spaces', *Urban Forestry and Urban Greening*, 11(1), pp. 11–20. doi: 10.1016/j.ufug.2011.09.005.

Dempsey, N., Burton, M. and Smith (2014) *Place-Keeping: Open Space Management in Practice*. Edited by N. Dempsey, H. Smith, and M. Burton. Oxon, UK: Routledge.

Denef, S., Oppermann, R. and Keyson, D. V. (2011) 'Designing for social configurations: Pattern languages to inform the design of ubiquitous computing', *International Journal of Design*, 5(3), pp. 49–65.

Department for Communities and Local Government (DCLG) (2017) *Fixing our broken housing market (Cm 9352)*. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/590463/Fixing_our_broken_housing_market_-_accessible_version.pdf.

Department for Levelling Up Housing & Communities (DLUHC) (2021) *English Housing Survey. Headline Report 2020-21*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1039214/2020-21_EHS_Headline_Report.pdf.

Devlin, P., Douglas, R. and Reynolds, T. (2015) 'Collaborative design of older women's co-housing', *Working with Older People*, 19(4), pp. 188–194. doi: 10.1108/WWOP-08-2015-0018.

Dobson, J. (2017) 'From "me towns" to "we towns": activist citizenship in UK town centres', *Citizenship Studies*, 21(8), pp. 1015–1033. doi: 10.1080/13621025.2017.1380605.

Douglas, G. C. C. (2014) 'Do-It-Yourself Urban Design: The Social Practice of Informal "Improvement" Through Unauthorized Alteration', *City & Community*, 13(1), pp. 5–25. doi: 10.1111/cico.12029.

Dovey, K. (2010) 'Chapter 2: Place as Assemblage', *Becoming Places*, (1987), pp. 13–30.

Dovey, K. (2012) 'Informal urbanism and complex adaptive assemblage', *International Development Planning Review*, 34(4), pp. 349–368. doi: 10.3828/idpr.2012.23.

Dovey, K. and Polakit, K. (2010) 'Urban slippage: Smooth and striated streetscaped in Bangkok', in *Becoming places: Urbanism / Architecture / Identity / Power*, pp. 167–184.

Dovey, K. and Wood, S. (2015) 'Public/private urban interfaces: type, adaptation, assemblage', *Journal of Urbanism*, 8(1), pp. 1–16. doi: 10.1080/17549175.2014.891151.

Durrett, C. (2009) *The Senior Cohousing Handbook: A Community Approach to Independent Living*. 2nd edn. Gabriola Island, Canada: New Society Publishers.

Durrett, C. and McCamant, K. (2011) *Creating Cohousing: Building Sustainable Communities*. Gabriola Island, Canada: New Society Publishers.

Ela, N. (2017) 'Urban Commons as Property Experiment: Mapping Chicago's Farms and Gardens', *SSRN*,

pp. 1–48. doi: 10.2139/ssrn.2744294.

Epting, S. (2018) 'Cohousing, environmental justice, and urban sustainability', *Environmental Ethics*, 40(2), pp. 135–151. doi: 10.5840/enviroethics201840214.

Esopi, G. (2018) 'Urban commons: social resilience experiences to increase the quality of urban system', *TeMA. Journal of Land use, Mobility and Environment*, 2(11), pp. 173–194. doi: http://dx.doi.org/10.6092/1970-9870/5532.

Fehling, C. *et al.* (2014) 'A process for pattern identification, authoring, and application', in *European Conference on Pattern Languages of Programs '14*. Irsee, Germany, 9-13 July: ACM. doi: 10.1145/2721956.2721976.

Feinberg, A., Ghorbani, A. and Herder, P. (2021) 'Diversity and challenges of the urban commons: A comprehensive review', *International Journal of the Commons*, 15(1), pp. 1–20. doi: 10.5334/ijc.1033.

Feinberg, A., Ghorbani, A. and Herder, P. M. (2020) 'Commoning toward urban resilience: The role of trust, social cohesion, and involvement in a simulated urban commons setting', *Journal of Urban Affairs*, pp. 1–26. doi: 10.1080/07352166.2020.1851139.

Felbinger, D. and Jonuschat, H. (2006) 'Promoting neighbourly interactions by the common use of green spaces', in *ENHR conference 'Housing in an expanding Europe: theory, policy, participation and implementation', Ljubljana, Slovenia, 2-5 July 2006*, pp. 1–16.

Felstead, A., Thwaites, K. and Simpson, J. (2019) 'A conceptual framework for urban commoning in shared residential landscapes in the UK', *Sustainability (Switzerland)*, 11(21). doi: 10.3390/su11216119.

Fernandez Arrigoitia, M. and Tummers, L. (2019) 'Cohousing Professionals as "Middle-Agents": Perspectives from the UK, USA and the Netherlands', *Built Environment*, 45(3), pp. 346–363. doi: 10.2148/benv.45.3.346.

Fernández Arrigoitia, M. and West, K. (2020) 'Interdependence, commitment, learning and love. The case of the United Kingdom's first older women's co-housing community', *Ageing and Society*, pp. 1–24. doi: 10.1017/S0144686X19001673.

Flyvbjerg, B. (2006) 'Five misunderstandings about case-study research', *Qualitative Inquiry*, 12(2), pp. 219–245. doi: 10.1177/1077800405284363.

Fogele, B. (2016) *Socio-technical transitions: a case study of co-housing in London, University of London*. King's College London, University of London. Available at: http://www.academia.edu/download/54299829/Baiba_Fogele_cohousing.pdf.

Folke, C. *et al.* (2010) 'Resilience thinking: Integrating resilience, adaptability and transformability', *Ecology and Society*, 15(4). doi: 10.5751/ES-03610-150420.

Follmann, A. and Viehoff, V. (2015) 'A green garden on red clay: creating a new urban common as a form of political gardening in Cologne, Germany', *Local Environment*, 20(10). doi: 10.1080/13549839.2014.894966.

Fors, H. *et al.* (2018) 'From borders to ecotones – Private-public co-management of urban woodland edges bordering private housing', *Urban Forestry and Urban Greening*, 30, pp. 46–55. doi: 10.1016/j.ufug.2017.12.018.

Forsyth, A. (2019) 'The British new towns: Lessons for the world from the new-town experiment', *Town Planning Review*, 90(3), pp. 239–246. doi: 10.3828/tpr.2019.17.

Foster, S. and Iaione, C. (2016) 'The City as a Commons', *Yale law & policy review*, 34(2), pp. 281–349.

Fox-Kämper, R. *et al.* (2018) 'Urban community gardens: An evaluation of governance approaches and related enablers and barriers at different development stages', *Landscape and Urban Planning*, 170, pp. 59–68. doi: 10.1016/j.landurbplan.2017.06.023.

Franck, K. A. and Stevens, Q. (2006) *Loose space: Possibility and diversity in urban life*. London, UK: Routledge Taylor & Francis Group.

Fromm, D. (2012) 'Seeding Community: Collaborative Housing as a Strategy for Social and Neighbourhood Repair', *Built Environment*, 38(3), pp. 364–394. doi: 10.2148/benv.38.3.364.

Gaber, J. (2019) 'Building "A Ladder of Citizen Participation": Sherry Arnstein, Citizen Participation, and

Model Cities', *Journal of the American Planning Association*, 85(3), pp. 188–201. doi: 10.1080/01944363.2019.1612267.

Gehl, J. (2006) *Life Between Buildings: Using Public Space*. Translated by J. Koch. Copenhagen, Denmark: The Danish Architectural Press.

Gibson-Graham, J. K., Cameron, J. and Healy, S. (2013) *Take Back the Economy: An Ethical Guide for Transforming Our Communities*. Minneapolis, USA: University of Minnesota Press. doi: 10.1080/2325548X.2014.894422.

Gidwanii, V. and Baviskar, A. (2011) 'Urban Commons', *Economic and Politcal Weekly*, 46(50), pp. 42–43. Available at: http://www.jstor.org/stable/41319482.

Giordano, M. (2003) 'The Geography ofthe Commons: The Role of Scale and Space', *Annals of the Association of American Geographers*, 93(2), pp. 365–375. doi: 10.1111/1467-8306.9302007.

Giraud, D. D. (1990) 'Shared backyard gardening', in Francis, M. and Hester, R. T. (eds) *The Meaning of Gardens: Idea, Place, and Action*. Cambridge, MA: MIT Press, pp. 166–171.

Glaser, B. G. and Strauss, A. L. (1999) *Discovery of Grounded Theory: Strategies for Qualitative Research*. Somerset, UK: Taylor & Francis Group.

Glaser, M. A., Denhardt, K. G. and Grubbs, J. W. (1997) 'Local Government-Sponsered Community Development: Exploring Relationships between Perceptions of Empowerment and Community Impact', *The American Review of Public Administration*, 27(1), pp. 76–94. doi: 10.1177/027507409702700106.

Glass, A. P. (2020) 'Sense of community, loneliness, and satisfaction in five elder cohousing neighborhoods', *Journal of Women and Aging*, 32(1), pp. 3–27. doi: 10.1080/08952841.2019.1681888.

Glover, T. D. (2003) 'The story of the Queen Anne Memorial Garden: Resisting a dominant cultural narrative', *Journal of Leisure Research*, 35(2), pp. 190–212. doi: 10.1080/00222216.2003.11949990.

Glover, T. D., Shinew, K. J. and Parry, D. C. (2005) 'Association, sociability, and civic culture: The democratic effect of community gardening', *Leisure Sciences*, 27(1), pp. 75–92. doi: 10.1080/01490400590886060.

Granberg, J. and Mirjamsdotter, H. (2016) *Searching for Living Space: Socio-spatial explorations for sustainability through collaborative residing*. Master's Thesis. Chalmers University of Thechnology.

Greenhalgh, J. (2016) 'Consuming communities: The neighbourhood unit and the role of retail spaces on British housing estates, 1944-1958', *Urban History*, 43(1), pp. 158–174. doi: 10.1017/S0963926815000449.

Grissell, L. and Kerley, P. (2021) 'In need of modernisation? The UK's housing crisis close up', *BBC news*, 1 October. Available at: https://www.bbc.co.uk/news/uk-58747051.

Grundschober, I. *et al.* (2018) 'A Pattern Language Remix for ATS2020', in Sickinger, R., Baumgartner, P., and Gruber-mücke, T. (eds) *Pursuit of Pattern Languages for Societal Change 2017: A comprehensive perspective of current pattern research and practice*. Krems, pp. 288–317.

Habraken, N. J. (1998) *The Structure of the Ordinary: Form and Control in the Built Environment*. London, England: MIT Press.

Habraken, N. J. (2008) 'Design for flexibility', *Building Research & Information*, 36(3), pp. 290–296. doi: 10.1080/09613210801995882.

Hacke, U., Müller, K. and Dütschke, E. (2018) 'Cohousing-social impacts and major implementation challenges', *Gaia*, 28, pp. 233–239. doi: 10.14512/gaia.28.S1.10.

Hahner, L. A. and Varda, S. J. (2014) 'Yarn bombing and the aesthetics of exceptionalism', *Communication and CriticalCultural Studies*, 11(4), pp. 301–321. doi: 10.1080/14791420.2014.959453.

Hall, E. T. (1969) *The Hidden Dimension*. USA: Anchor Books.

Hammond, M. (2018) 'Spatial Agency: Creating New Opportunities for Sharing and Collaboration in Older People's Cohousing', *Urban Science*, 2(3), p. 64. doi: 10.3390/urbansci2030064.

Hansen, A. V. and Langergaard, L. L. (2017) 'Democracy and non-profit housing. The tensions of residents' involvement in the Danish non-profit sector', *Housing Studies*, 32(8), pp. 1085–1104. doi:

10.1080/02673037.2017.1301398.

Hardin, G. (1968) 'The tragedy of the commons', *Science*, 162, pp. 1243–1248. doi: 10.1080/19390450903037302.

Harvey, D. (2008) 'The Right to the City', *New Left Review*, 53, pp. 23–40.

Harvey, D. (2012) *Rebel cities: from the right to the city to the right to the urban revolution*. London, UK: Verso. doi: 10.4067/S0250-71612014000100013.

Heath, P. J., Thwaites, K. and Simpson, J. (2017) *Scalar Slippage within the Urban Assemblage: from scheme delivery to place delivery in socio-spatial urban design*. Sheffield, University of Sheffield. Unpublished.

Helfrich, S. (2015) 'Patterns of Commoning: How We Can Bring About a Language of Commoning', in Bollier, D. and Helfrich, S. (eds) *Patterns of Commoning*. Amherst, United States: The Commons Strategies Group [in cooperation with] Levellers Press.

Helfrich, S. and Bollier, D. (2019) *Free, Fair and Alive: The Insurgent Power of the Commons*. Gabriola Island, Canada: New Society Publishers.

Hentrich, C. *et al.* (2015) 'An Approach for Supporting Pattern Mining and Validation through Grounded Theory and its Applications to Process- Driven SOA Patterns', in *EuroPLoP '13, Irsee, Germany, 10-14 July*. ACM, p. 16. doi: 10.1145/2739011/2739020.

Heritage Lottery Fund (2016) *State of UK Public Parks*. Available at: https://www.heritagefund.org.uk/about/insight/research/state-uk-public-parks-2016.

Hess, C. (2008) 'Mapping the New Commons', in *The Twelfth Biennial Conference of the International Association for the Study of the Commons, Cheltenham, UK, 14-18 July*. doi: 10.2139/ssrn.1356835.

Hess, C. and Ostrom, E. (2011) 'Introduction: An Overview of the Knowledge Commons', in Hess, C. and Ostrom, E. (eds) *Understanding knowledge as a commons: From Theory To Practice.* Cambridge, USA: MIT Press, pp. 3–26.

Hickman, P. G. (2006) 'Approaches to tenant participation in the English local authority sector', *Housing Studies*, 21(2), pp. 209–225. doi: 10.1080/02673030500484802.

Hillier, B. and Hanson, J. (1984) *The Social Logic of Space*. Cambridge, UK: Cambridge University Press.

Homes England (2019) *Community Housing Fund*. Available at: https://www.gov.uk/government/collections/community-housing-fund (Accessed: 9 July 2019).

Howard, E. (2007) *Garden cities of to-morrow*. Edited by F. J. Osborn. London, UK: Taylor & Francis Group. Available at: ProQuest Ebook Central.

Huber, A. (2017) 'Theorising the dynamics of collaborative consumption practices: A comparison of peer-to-peer accommodation and cohousing', *Environmental Innovation and Societal Transitions*, 23, pp. 53–69. doi: 10.1016/j.eist.2016.12.001.

Huron, A. (2015) 'Working with Strangers in Saturated Space: Reclaiming and Maintaining the Urban Commons', *Antipode*, 47(4), pp. 963–979. doi: 10.1111/anti.12141.

Huron, A. (2017) 'Theorising the urban commons: New thoughts, tensions and paths forward', *Urban Studies*, 54(4), pp. 1062–1069. doi: 10.1177/0042098016685528.

Iba, T. and Isaku, T. (2016) 'A Pattern Language for Creating Pattern Languages: 364 Patterns for Pattern Mining, Writing, and Symbolizing', in *23rd Conference on Pattern Language Programs PLoP'16, Monticello, Illinois, USA, 24-26 October*. ACM, pp. 1–63.

Iba, T., Sakamoto, M. and Miyake, T. (2011) 'How to Write Tacit Knowledge as a Pattern Language: Media Design for Spontaneous and Collaborative Communities', *Procedia - Social and Behavioral Sciences*, 26, pp. 46–54. doi: 10.1016/j.sbspro.2011.10.561.

Iba, T. and Utsunomiya, Y. (2018) 'Active Learning Patterns for Teachers', in Sickinger, R., Baumgartner, P., and Gruber-mücke, T. (eds) *Pursuit of Patter Languages for Societal Change 2017: A comprehensive perspective of current pattern research and practice*. Krems, pp. 216–241.

Jabareen, Y. (2014) '"Do it yourself" as an informal mode of space production: conceptualizing informality', *Journal of Urbanism*, 7(4), pp. 414–428. doi: 10.1080/17549175.2014.884975.

Jacobs, J. (1961) *The Death and Life of Great American Cities*. New York, USA: Random House.

Jakobsen, P. and Larsen, H. G. (2019) 'An alternative for whom? The evolution and socio-economy of Danish cohousing', *Urban Research and Practice*, 12(4), pp. 414–430. doi: 10.1080/17535069.2018.1465582.

Jarvis, H. (2011) 'Saving space, sharing time: Integrated infrastructures of daily life in cohousing', *Environment and Planning A*, 43(3), pp. 560–577. doi: 10.1068/a43296.

Jarvis, H. (2015) 'Towards a deeper understanding of the social architecture of co-housing: Evidence from the UK, USA and Australia', *Urban Research and Practice*, 8(1), pp. 93–105. doi: 10.1080/17535069.2015.1011429.

Jarvis, H. *et al.* (2016) *Cohousing : Shared Futures*. Available at: http://eprints.lancs.ac.uk/80214/1/Cohousing_shared_futures_FINAL_web.pdf.

Jenkins, P., Milner, J. and Sharpe, T. (2009) 'A brief historical review of community technical aid and community architecture', *Architecture, Participation and Society*, pp. 23–38. doi: 10.4324/9780203869499.

Johnson, S. and Loxley, C. (2001) 'Installing Alley-Gates : Practical Lessons From Burglary Prevention Projects. Briefing Note 2/01.' London, UK: Policing and Reucing Crime Unit, Home Office. Available at: https://popcenter.asu.edu/sites/default/files/tools/implementing_responses/PDFs/Johnson.pdf.

Jones, R. (2002) 'Enticement: The role of community involvement in the management of urban parks', *Managing Leisure*, 7(1), pp. 18–32. doi: 10.1080/13606710110117041.

Jordao, E. M. (2016) *The Role Of The Landscape In The Socialization Of Cohousing Communities: A Study In Western Massachusetts*. Masters Thesis. University of Massachusetts Amherst. doi: 10.7275/8433283.

Jorgensen, A. (2004) *Living in the urban wild woods: a case study of the ecological woodland approach to landscape planning and design at Birchwood, Warrington New Town*. PhD Thesis. University of Sheffield. Available at: https://etheses.whiterose.ac.uk/3553/.

Kamalipour, H. and Peimani, N. (2015) 'Assemblage Thinking and the City: Implications for Urban Studies', *Current Urban Studies*, 3, pp. 402–408. doi: 10.4236/cus.2015.34031.

Kaneko, T. and Iba, T. (2018) 'Patterns for Utilizing Patterns Towards Dementia-Friendly Communities', in Sickinger, R., Baumgartner, P., and Gruber-mücke, T. (eds) *Pursuit of Patter Languages for Societal Change 2017: A comprehensive perspective of current pattern research and practice*. Krems, pp. 318–333.

Katrini, E. (2018) 'Sharing Culture: On definitions, values, and emergence', *The Sociological Review*, 66(2), pp. 425–446. doi: 10.1177/0038026118758550.

Katrini, E. (2019) *Creating the Everyday Commons: Spatial patterns of sharing culture*. PhD Thesis. Carnegie Mellon University. Available at: https://kilthub.cmu.edu/articles/thesis/Creating_the_Everyday_Commons_Spatial_Patterns_of_Sharing_Culture/9897821.

Kim, D. and Lim, U. (2016) 'Urban resilience in climate change adaptation: A conceptual framework', *Sustainability (Switzerland)*, 8(4), pp. 1–17. doi: 10.3390/su8040405.

Kintrea, K. (1996) 'Whose partnership? Community interests in the regeneration of a Scottish housing scheme', *Housing Studies*, 11(2), pp. 287–306. doi: 10.1080/02673039608720857.

Kirby, A. (2003) 'Redefining social and environmental relations at the ecovillage at Ithaca: A case study', *Journal of Environmental Psychology*, 23(3), pp. 323–332. doi: 10.1016/S0272-4944(03)00025-2.

Kohls, C. (2013) *The Theories of Design Patterns and their Practical Implications exemplified for E-Learning Patterns*. PhD Thesis. Catholic University of Eichstätt-Ingolstadt. Available at: https://opus4.kobv.de/opus4-ku-eichstaett/frontdoor/index/index/docId/158.

Kohls, C., Koppe, C. and Norgard, R. T. (2018) 'Patterns for Hybrid Pedagogy', in Sickinger, R., Baumgartner, P., and Gruber-mücke, T. (eds) *Pursuit of Patter Languages for Societal Change 2017: A comprehensive perspective of current pattern research and practice*. Krems, pp. 266–287.

Kohls, C. and Munster, G. (2018) 'Designing Hybrid Spaces for Creative Work', in Sickinger, R.,

Baumgartner, P., and Editors, T. G. (eds) *Pursuit of Patter Languages for Societal Change 2017: A comprehensive perspective of current pattern research and practice*. Krems, pp. 242–265.

Kvale, S. (1996) *InterViews: An introduction to qualitative research interviewing*. Thousand Oaks, CA, USA: SAGE Publications. doi: 10.1016/S0149-7189(97)89858-8.

Laine, M. *et al.* (2020) 'Bricolage in Collaborative Housing in Finland: Combining Resources for Alternative Housing Solutions', *Housing, Theory and Society*, 37(1), pp. 101–117. doi: 10.1080/14036096.2018.1492438.

Landenberger, L. and Gütschow, M. (2019) 'Project management for building groups: Lessons from Baugemeinschaft practice', *Built Environment*, 45(3), pp. 296–307. doi: 10.2148/benv.45.3.296.

Landman, K. (2003) 'Alley-gating and neighbourhood gating: are they two sides of the same face', in *Conference of Gated Communities: Building Social Division or Safer Communities?* Glasgow, September 18-19, pp. 1–18. Available at: http://www.csir.co.za/Built_environment/Planning_support_systems/gatedcomsa/docs/Glasgow_paper_v5.pdf.

Lang, R., Carriou, C. and Czischke, D. (2020) 'Collaborative Housing Research (1990–2017): A Systematic Review and Thematic Analysis of the Field', *Housing, Theory and Society*, 37(1), pp. 10–39. doi: 10.1080/14036096.2018.1536077.

Lang, R., Chatterton, P. and Mullins, D. (2020) 'Grassroots innovations in community-led housing in England: the role and evolution of intermediaries', *International Journal of Urban Sustainable Development*, 12(1), pp. 52–72. doi: 10.1080/19463138.2019.1663525.

Larsen, H. G. (2019) 'Three phases of Danish cohousing: tenure and the development of an alternative housing form', *Housing Studies*, 34(8), pp. 1349–1371. doi: 10.1080/02673037.2019.1569599.

Lawrence, A. and Ambrose-Oji, B. (2015) 'Beauty, friends, power, money: Navigating the impacts of community woodlands', *Geographical Journal*, 181(3), pp. 268–279. doi: 10.1111/geoj.12094.

Lefebvre, H. (1996) *Writing on cities*. Edited and translated by E. Kofman and E. Lebas. Cambridge, USA: Blackwell Publishers.

Leishman, C. *et al.* (2004) *Preferences, quality and choice in new-build housing, Joseph Rowntree Foundation*. Available at: https://www.jrf.org.uk/report/why-do-people-buy-new-build-housing.

Leitner, H. (2015) 'Working with Patterns : An Introduction', in Bollier, D. and Helfrich, S. (eds) *Patterns of Commoning*. Amherst, USA: Levellers Press, pp. 15–25.

Lies, M. M., Kang, M. and Sample, R. K. (2017) 'Place attachment and design features in a rural senior cohousing community', *Housing and Society*, 44(1–2), pp. 41–63. doi: 10.1080/08882746.2017.1394130.

Lietaert, M. (2010) 'Cohousing's relevance to degrowth theories', *Journal of Cleaner Production*, 18(6), pp. 576–580. doi: 10.1016/j.jclepro.2009.11.016.

Lindgren, T. and Castell, P. (2008) 'Open Space Management in Residential Areas - How It Is Organised and Why', *International Journal of Strategic Property Management*, 12(3), pp. 141–160. doi: 10.3846/1648-715x.2008.12.141-160.

Lofland, J. and Lofland, L. H. (1995) *Analyzing social settings: a guide to qualitative observation and analysis*. Belmont, California, USA: Wadsworth Publishing Company.

Lofland, L. H. (1973) *A World Of Strangers: order and action in urban public space*. New York, USA: Basic Books, Inc.

MacQueen, K. M. *et al.* (2001) 'What is Community? An Evidence-Based Definition for Participatory Public Health', *American Journal Public Health*, 91(12), pp. 1929–1938. doi: 10.2105/ajph.91.12.1929.

Madanipour, A., Miciukiewicz, K. and Vigar, G. (2018) 'Master plans and urban change: the case of Sheffield city centre', *Journal of Urban Design*, 23(4), pp. 465–481. doi: 10.1080/13574809.2018.1435996.

Martin, M. (1996) 'Back-alley as Community Landscape', *Landscape Journal*, 15(2), pp. 138–153. doi: 10.3368/lj.15.2.138.

Matteson, K. C. and Langellotto, G. A. (2010) 'Determinates of inner city butterfly and bee species

richness', *Urban Ecosystems*, 13(3), pp. 333–347. doi: 10.1007/s11252-010-0122-y.

Mayan, M. J. and Daum, C. H. (2016) 'Worth the Risk? Muddled Relationships in Community-Based Participatory Research', *Qualitative Health Research*, 26(1), pp. 69–76. doi: 10.1177/1049732315618660.

McCamant, K., Durett, C. and Hertzman, E. (1994) *Cohousing: A contemporary approach to housing ourselves*. 2nd edn. Berkeley, USA: Habitat Press/Ten Speed Press.

McFarlane, C. (2011) 'Assemblage and critical urbanism', *City*, 15(2), pp. 204–224. doi: 10.1080/13604813.2011.568715.

McKee, K. (2011) 'Sceptical, disorderly and paradoxical subjects: Problematizing the "will to empower" in social housing governance', *Housing, Theory and Society*, 28(1), pp. 1–18. doi: 10.1080/14036091003788120.

Meltzer, G. (2005) *Sustainable Community: Learning from the cohousing model.* 3rd edn. Crewe, UK: Trafford Publishing Ltd.

Meltzer, G (2001) 'Co-housing bringing communalism to the world?', in Forster, P. and Meltzer, Graham (eds) *Proceedings of the 7th International Communal Studies Conference*. Belzig, Germany, 25-27 June: International Communal Studies Association. Available at: http://www.communa.org.il/icsa/documents/proceedings2001.pdf.

Ministry of Housing Communities & Local Government (MHCLG) (2019) *National Design Guide*. London, UK. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/962113/National_design_guide.pdf.

Ministry of Housing Communities & Local Government (MHCLG) (2020) *Planning for the future*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/907647/MHCLG-Planning-Consultation.pdf.

Montelongo Arana, M. and Wittek, R. P. M. (2016) 'Community resilience: sustained cooperation and space usage in collective housing', *Building Research and Information*, 44(7), pp. 764–774. doi: 10.1080/09613218.2016.1212514.

Moss, T. (2014) 'Spatiality of the commons', *International Journal of the Commons*, 8(2), pp. 457–471. doi: 10.18352/ijc.556.

Mouland, J. and Grenier, M. (2015) *Changing places : how can we make resident involvement relevant ?* London, UK: Family Mosaic. Available at: http://www.familymosaic.co.uk/userfiles/Documents/Research_Reports/ResidentInvolvement_web.pdf.

Mundoli, S., Manjunatha, B. and Nagendra, H. (2017) 'Commons that provide: the importance of Bengaluru's wooded groves for urban resilience', *International Journal of Urban Sustainable Development*, 9(2), pp. 184–206. doi: 10.1080/19463138.2016.1264404.

Myers, M. S. (1998) 'Empowerment and community building through a gardening project', *Psychiatric Rehabilitation Journal*, 22(2), pp. 181–183. doi: 10.1037/h0095249.

Nannini, D. K., Sommer, R. and Meyers, L. S. (1998) 'Resident involvement in inspecting trees for Dutch elm disease', *Journal of Arboriculture*, 24(1), pp. 42–46. doi: 10.48044/jauf.1998.006.

Newman, O. (1973) 'Defensible Space: Crime Prevention Through Urban Design', *American Political Science Review*, 36(216), pp. 325–332. doi: 10.2307/1957945.

Newman, O. (1976) *Design Guidelines For Creating Defensible Space*. US National Institute of Law Enforcement and Criminal Justice. Available at: https://www.ojp.gov/pdffiles1/Digitization/148313NCJRS.pdf.

Noterman, E. (2016) 'Beyond Tragedy: Differential Commoning in a Manufactured Housing Cooperative', *Antipode*, 48(2), pp. 433–452. doi: 10.1111/anti.12182.

Office for National Statistics (2021) *UK House Price Index: October 2021*. Available at: https://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/housepriceindex/october2021.

Ogo, I. *et al.* (2018) 'Ways of Everyday World-Making: Living well with Working and Parenting', in

Sickinger, R., Baumgartner, P., and Gruber-mücke, T. (eds) *Pursuit of Pattern Languages for Societal Change 2017: A comprehensive perspective of current pattern research and practice*. Krems, pp. 480–509.

Olson, D. (2008) *Teaching Patterns: A pattern language for improving the quality of instruction in higher education settings.* PhD Thesis. Utah State University. doi: 10.26076/60a2-c7a4.

Ostrom, E. (1990) *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge, UK: Cambridge University Press. doi: 10.1017/CBO9781316423936.

Ostrom, E. (2012) 'Nested externalities and polycentric institutions: must we wait for global solutions to climate change before taking actions at other scales?', *Economic Theory*, 49(2), pp. 353–369. doi: 10.1007/s00199-010-0558-6.

Parker, P. and Schmidt, S. (2017) 'Enabling urban commons', *CoDesign*, 13(3), pp. 202–213. doi: 10.1080/15710882.2017.1355000.

Pelger, D. *et al.* (2017) *Spatial Commons: Urban Open Spaces as a Resource*. Edited by D. Pelger, A. Kaspar, and J. Stollmann. Berlin, Germany: Technical University of Berlin. doi: 10.14279/depositonce-5968.

Petrescu, D., Petcou, C. and Baibarac, C. (2016) 'Co-producing commons-based resilience: lessons from R-Urban', *Building Research & Information*, 44(7), pp. 717–736. doi: 10.1080/09613218.2016.1214891.

Piddington, J. *et al.* (2020) *The Housing Stock of The United Kingdom*. Watford, UK: BRE Trust. Available at: https://files.bregroup.com/bretrust/The-Housing-Stock-of-the-United-Kingdom_Report_BRE-Trust.pdf.

Pink, S. (2000) *Doing Visual Ethnography*. London, Uk: SAGE Publications Ltd.

Porqueddu, E. (2018) 'Toward the open city: design and research for emergent urban systems', *Urban Design International*, 23(3), pp. 236–248. doi: 10.1057/s41289-018-0065-0.

Porta, S. and Romice, O. (2010) *Plot-based Urbanism: towards time-consciousness in place-making*. Working Papers of the Urban Design Studies Unit at University of Strathclyde, Glasgow, UK. Available at: http://www.udsu-strath.com/3-research/working-papers-2011-plot-based-urbanism/.

Preece, J. (2019) *Understanding approaches to tenant participation in social housing: an evidence review*. UK Collaborative Centre for Housing Evidence. Available at: https://housingevidence.ac.uk/wp-content/uploads/2019/07/190725-understanding-approaches-to-tenant-participation-in-SH.pdf.

Ramos, J. M. (ed.) (2016) *The City as Commons: A Policy Reader*, *The City as Commons: A Policy Reader*. Victoria, Australia: Commons Transition Coalition. Available at: https://cdn5-blog.p2pfoundation.net/wp-content/uploads/city-as-commons.pdf.

Renz, M. A. (2006) 'Paving consensus: Enacting, challenging, and revising the consensus process in a cohousing community', *Journal of Applied Communication Research*, 34(2), pp. 163–190. doi: 10.1080/00909880600574088.

Riley, M. and Holton, M. (2016) 'Place-Based Interviewing: Creating and Conducting Walking Interviews'. London SAGE Publications Ltd. doi: 10.4135/9781446273050155953 86.

Riseborough, M. (2013) *Work on the wild side: For developers & architects. Cohousing Briefing Paper 1*. London, UK: Housing Learning & Improvement Network.

Rising, L. (2007) 'Understanding the Power of Abstraction in Patterns', *IEEE Software*, 24(4), pp. 46–51. doi: 10.1109/MS.2007.123.

Robson, C. and McCartan, K. (2016) *Real World Research*. Hoboken, NJ, USA: Wiley.

Robson, J. P., Sinclair, A. J. and Diduck, A. P. (2015) 'A study of institutional origins and change in a Canadian urban commons', *International Journal of the Commons*, 9(2), pp. 698–719. doi: 10.18352/ijc.548.

Rogge, N. and Theesfeld, I. (2018) 'Categorizing urban commons: Community gardens in the Rhine-Ruhr agglomeration, Germany', *International Journal of the Commons*, 12(2), pp. 251–274. doi: 10.18352/ijc.854.

Romice, O. *et al.* (2016) 'Urban Design and Quality of Life', in *Handbook of Environmental Psychology*. New York, USA: Springer.

Romice, O., Porta, S. and Feliciotti, A. (2020) *Masterplanning for Change: Designing the Resilient City*.

London, UK: RIBA Publishing.

Rose, G. (2007) *Visual Methodologies: An Introduction to the Interpretation of Visual Materials*. London, Uk: SAGE Publications Ltd.

Ruiu, M. L. (2014) 'Differences between Cohousing and Gated Communities. A Literature Review', *Sociological Inquiry*, 84(2), pp. 316–335. doi: 10.1111/soin.12031.

Ruiu, M. L. (2015) 'The effects of cohousing on the social housing system: the case of the Threshold Centre', *Journal of Housing and the Built Environment*, 30(4), pp. 631–644. doi: 10.1007/s10901-015-9436-7.

Ruiu, M. L. (2016a) 'Participatory processes in designing cohousing communities: the case of the community project', *Housing and Society*, 43(3), pp. 168–181. doi: 10.1080/08882746.2017.1363934.

Ruiu, M. L. (2016b) 'The Social Capital of Cohousing Communities', *Sociology*, 50(2), pp. 400–415. doi: 10.1177/0038038515573473.

Sandstedt, E. and Westin, S. (2015) 'Beyond gemeinschaft and gesellschaft. Cohousing life in contemporary Sweden', *Housing, Theory and Society*, 32(2), pp. 131–150. doi: 10.1080/14036096.2015.1011687.

Sanguinetti, A. (2014) 'Transformational practices in cohousing: Enhancing residents' connection to community and nature', *Journal of Environmental Psychology*, 40, pp. 86–96. doi: 10.1016/j.jenvp.2014.05.003.

Sanguinetti, A. and Hibbert, K. (2018) 'More room for cohousing in the United States: Understanding diffusion potential by exploring who knows about, who likes, and who would consider living in cohousing', *Housing and Society*, 45(3), pp. 139–156. doi: 10.1080/08882746.2018.1529507.

Sara, R., Jones, M. and Rice, L. (2021) 'Austerity urbanism: connecting strategies and tactics for participatory placemaking', *CoDesign*, 17(4), pp. 493–509. doi: 10.1080/15710882.2020.1761985.

Sargisson, L. (2010) 'Friends have all things in common: Utopian property relations', *British Journal of Politics and International Relations*, 12(1), pp. 22–36. doi: 10.1111/j.1467-856X.2009.00391.x.

Sargisson, L. (2012) 'Second-Wave Cohousing: A Modern Utopia?', *Utopian Studies*, 23(1), pp. 28–56.

Sbaraini, A. *et al.* (2011) 'How to do a grounded theory study: A worked example of a study of dental practices', *BMC Medical Research Methodology*, 11(128), pp. 1–10. doi: 10.1186/1471-2288-11-128.

Scanlon, K. and Fernández Arrigoitia, M. (2015) 'Development of new cohousing: Lessons from a London scheme for the over-50s', *Urban Research and Practice*, 8(1), pp. 106–121. doi: 10.1080/17535069.2015.1011430.

Schmelzkopf, K. (1995) 'Society Urban Community Gardens as Contested Space', *American Geographical Society*, 85(3), pp. 364–381. doi: 10.2307/215279.

Schuler, D. (2002) 'A Pattern Language for Living Communication: A Global Participatory Project', in Binder, T., Gregory, J., and Wagner, I. (eds) *PDC 02 Participatory Design Conference, Malmö, Sweden, 23-25 June*. Malmo, Sweden, pp. 52–61. Available at: https://ojs.ruc.dk/index.php/pdc/article/view/240.

Self-build and Custom Housebuilding Act 2015, c.17 (no date). London: The Stationery Office. Available at: https://www.legislation.gov.uk/ukpga/2015/17/contents/enacted.

Sendra, P. and Sennett, R. (2020) *Designing Disorder: Experiments and Disruptions in the City*. London, Uk: Verso Books.

Shared Assets (2016) *Transforming derelict or underused land through community-led models: A guide inspired by the experience of Our Place projects*. Available at: https://mycommunity.org.uk/wp-content/uploads/2016/09/10-Reclaiming-land-v-4-FINAL-1.pdf.

Sheffield City Council (2021) *Neighbourhood planning*. Available at: https://www.sheffield.gov.uk/home/planning-development/neighbourhood-planning (Accessed: 22 January 2022).

Shinew, K. J., Glover, T. D. and Parry, D. C. (2004) 'Leisure spaces as potential sites for interracial interaction: Community gardens in urban areas', *Journal of Leisure Research*, 36(3), pp. 336–355. doi: 10.1080/00222216.2004.11950027.

Silverman, R. M. (2005) 'Caught in the Middle: Community Development Corporations (CDCs) and the

Conflict between Grassroots and Instrumental Forms of Citizen Participation', *Community Development*, 36(2), pp. 35–51. doi: 10.1080/15575330509490174.

Smith, C., Clayden, A. and Dunnett, N. (2007) *Residential Landscape Sustainability: A Checklist Tool*. Chichester, UK: Blackwell Publishing Ltd.

Smith, C., Clayden, A. and Dunnett, N. (2009) 'An exploration of the effect of housing unit density on aspects of residential landscape sustainability in England', *Journal of Urban Design*, 14(2), pp. 163–187. doi: 10.1080/13574800802670978.

Stahlschmidt, P. *et al.* (2017) 'Framing analysis', in *Landscape Analysis: Investingating the Potentials of Space and Place*. Taylor & Francis Group. doi: 10.4324/9781315682792.

Stavrides, S. (2015) 'Common space as threshold space: urban commoning in struggles to re-appropriate public space', *Footprint*, (16), pp. 9–20. doi: 10.7480/footprint.9.1.896.

Stillitoe, D. (2014) 'The utopian estate that's been left to die', *The Guardian*, 5 March. Available at: https://www.theguardian.com/artanddesign/the-camera-eye/2014/mar/05/park-hill-sheffield-utopian-estate-left-to-die.

Stride Treglown (2018) *Martin Horne: self-finish living*. Available at: https://stridetreglown.com/inhabitant/martin-horne-self-finish-living/ (Accessed: 23 September 2019).

Sullivan, E. (2016) 'Individualizing Utopia: Individualist Pursuits in a Collective Cohousing Community', *Journal of Contemporary Ethnography*, 45(5), pp. 602–627. doi: 10.1177/0891241615587527.

Susser, I. and Tonnelat, S. (2013) 'Transformative cities: The three urban commons', *Focaal*, 2013(66), pp. 105–122. doi: 10.3167/fcl.2013.660110.

Thompson, M. (2015) 'Between Boundaries: From Commoning and Guerrilla Gardening to Community Land Trust Development in Liverpool', *Antipode*, 47(4), pp. 1021–1042. doi: 10.1111/anti.12154.

Thomson, A. M. and Perry, J. L. (2006) 'Collaboration Processes: Inside the Black Box', *Public Administration Review*, pp. 20–32. Available at: https://www.jstor.org/stable/4096567.

Thwaites, K., Mathers, A. and Simkins, I. (2013) *Socially restorative urbanism: The theory, process and practice of experiemics*. Taylor & Francis.

Tinkler, P. (2013) *Using Photographics in Social and Historical Research*. Manchester, UK: SAGE Publications Ltd.

Tonkiss, F. (2013) 'Austerity urbanism and the makeshift city', *City*, 17(3), pp. 312–324. doi: 10.1080/13604813.2013.795332.

Tummers, L. (2015) 'Understanding co-housing from a planning perspective: Why and how?', *Urban Research and Practice*, 8(1), pp. 64–78. doi: 10.1080/17535069.2015.1011427.

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. doi: 10.1177/0042098015586696.

Turner, B. (2011) 'Embodied connections: Sustainability, food systems and community gardens', *Local Environment*, 16(6), pp. 509–522. doi: 10.1080/13549839.2011.569537.

Turner, V. (1967) 'The forest of symbols: aspects of Ndembu ritual', in. Ithaca, New York, NY.: Cornell University Press.

Twiss, J. *et al.* (2003) 'Community Gardens: Lessons Learned from California Healthy Cities and Communities', *American Journal of Public Health*, 93(9), pp. 1435–1438. doi: 10.2105/AJPH.93.9.1435.

UK Cohousing Network (2019) *UK Cohousing Directory*. Available at: https://cohousing.org.uk/information/uk-cohousing-directory/ (Accessed: 1 May 2019).

Wang, J., Pan, Y. and Hadjri, K. (2020) 'Social sustainability and supportive living: exploring motivations of British cohousing groups', *Housing and Society*, pp. 1–27. doi: 10.1080/08882746.2020.1788344.

Wargent, M. and Parker, G. (2018) 'Re-imagining neighbourhood governance : the future of neighbourhood planning in England.', *Town Planning Review*, 89(4), pp. 379–402. doi: 10.3828/tpr.2018.23.

Whiting, R. *et al.* (2018) 'Participant-led video diaries', in Bryman, A. and Buchanan, D. A. (eds) *Unconventional Methodology in Organization and Management Research*. Oxford, UK: Oxford University Press, pp. 1–296. doi: 10.1093/oso/9780198796978.001.0001.

Williams, J. (2005) 'Designing neighbourhoods for social interaction: The case of cohousing', *Journal of Urban Design*, 10(2), pp. 195–227. doi: 10.1080/13574800500086998.

Williams, J. (2008) 'Predicting an American future for cohousing', *Futures*, 40(3), pp. 268–286. doi: 10.1016/j.futures.2007.08.022.

Williams, M. J. (2018) 'Urban commons are more-than-property', *Geographical Research*, 56(1), pp. 16–25. doi: 10.1111/1745-5871.12262.

Wilson, W. (2017) *The housing crisis*, *House of Commons Library*. Available at: https://commonslibrary.parliament.uk/the-housing-crisis/.

Wilson, W. and Barton, C. (2021) *Tackling the under-supply of housing in England*. (Briefing Paper 07671). London, UK: House of Commons Library. Available at: https://commonslibrary.parliament.uk/research-briefings/cbp-7671/.

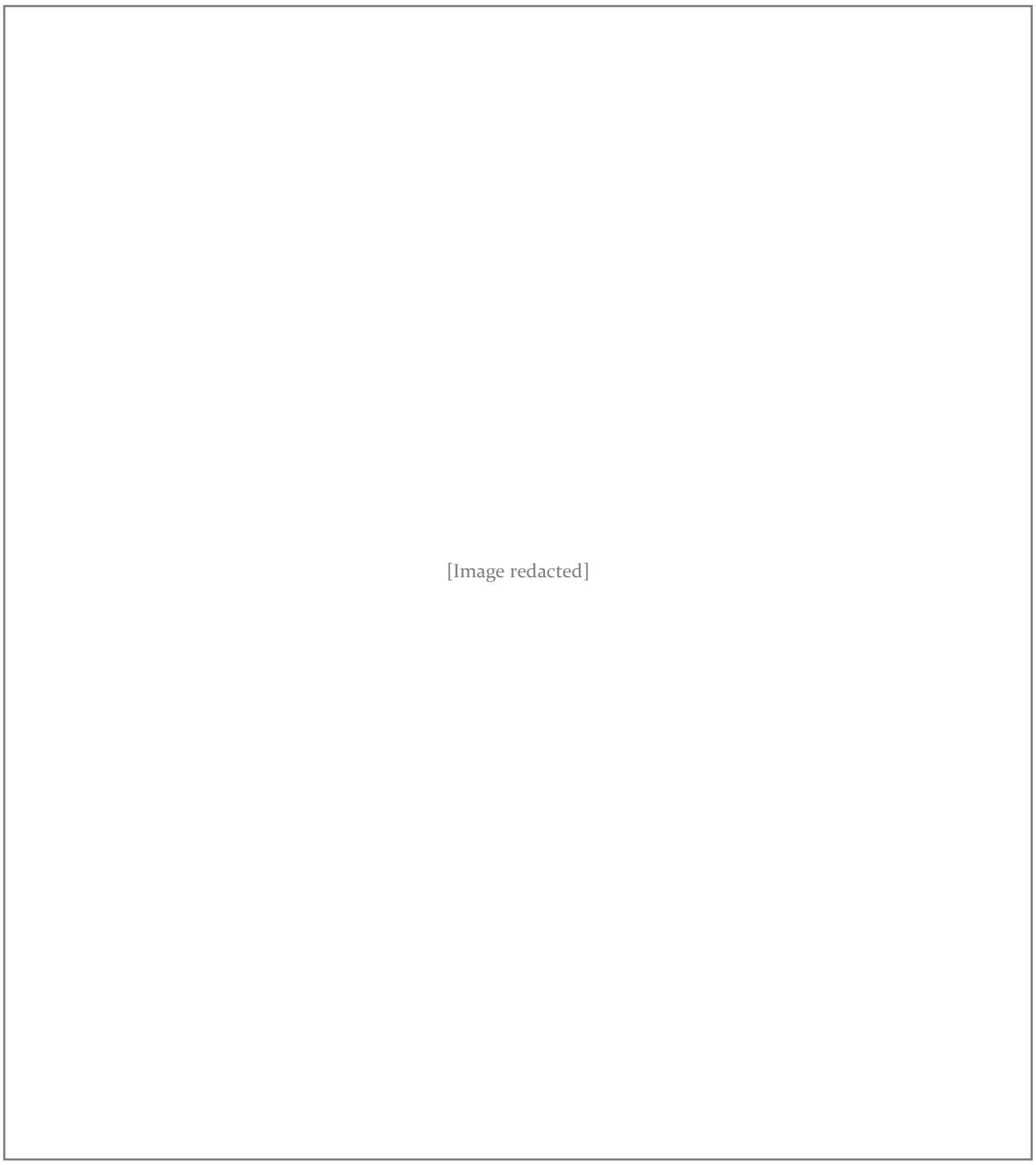
Wirth, L. (1938) 'Urbanism as a Way of Life', *American Journal of Sociology*, 44(1), pp. 1–24. Available at: http://www.jstor.org/stable/2768119.

Yin, R. K. (2018) *Case Study Research Design and Methods*. 6th edn. Thousand Oaks, CA, USA: Sage Publishing.

Yonesu, M. and Kato, I. (2018) 'A Pattern Language Shaping a Desirable Environment for the Elderly', in Sickinger, R., Baumgartner, B., and Editors, T. G. (eds) *Pursuit of Pattern Languages for Societal Change 2017: A comprehensive perspective of current pattern research and practice*. Krems, pp. 366–379.

APPENDICES

Appendix A: Case Study Evaluation Table



Appendix B: Information Sheets & Consent Forms

Places in common

Developing a resource for resident involvement in shared residential landscapes

You are invited to take part in research about resident involvement in shared outdoor spaces

What is 'Places in Common'?

'Places in Common' is a PhD research project aiming to find and share ideas for residents to get involved in the shared outdoor spaces near where they live. The study is looking at cohousing projects as an example of how residents can jointly take part in making outdoor places, work with outside professionals and interact with the wider neighbourhood.

What is the purpose of the study?

This study will look at cohousing projects and speak to the residents, collaborators and neighbours to see how residents get involved in the design, maintenance, and management of shared outdoor spaces. The purpose of this study is to share ideas for how residents can take part in shared outdoor spaces with other cohousing and resident groups wanting to do similar things. It will help new cohousing and resident groups put into practice the ideas that work within current cohousing communities. The aim of the study is to make a visual tool to help resident groups work with professionals, organisations and their neighbours to put these ideas into practice.

Why am I being asked to take part?

Your cohousing community has agreed to take part in this research project. As a resident, it's up to you to decide whether or not to take part. If you decide to take part you are still free to change your mind at any time and without giving a reason and or any negative affect. If you decide you no longer want to take part in the study, any information you have already given will be removed from the research, unless it has been anonymised, combined with other information, published or archived, as it is no longer possible to do so.

What will the researcher do?

I will arrange to visit your cohousing site several times over the next two-three years to volunteer during community workdays and join in meetings, events and activities if invited. During these visits, I will:

- observe workdays, meetings, events and activities
- ask you to take part in an interview and give a tour of shared outdoor spaces
- take photos of shared outdoor areas

You will be informed when the researcher is attending your cohousing site to observe workdays, meetings, events and activities. You will be given a consent sheet to sign before taking part in an interview or workshop.

What will happen if I take part?

I will join you as a volunteer to see how you and the rest of the community get involved with the shared outdoor spaces on your site. I will make notes on what I experience, the activities you take part in and the things you talk about with me. Whilst I am visiting, I may ask if you would like to take me on a tour of the cohousing site and take part in an interview. If you decide to take part in the interview, you will be asked questions about the shared outdoor spaces in your cohousing site, how you take part in these spaces, and how you work or interact with outside professionals and neighbours.

Will I be audio recorded, and how will the recording be used?

If you give an interview and guided tour, you will be asked if the interview can be audio recorded. The recording will only be used by to help me remember and accurately analyse what you said. Only people within the research team (including my supervisors, a transcriber and myself) will hear the recording.

What are the possible disadvantages and risks of taking part?

Taking part could make you reflect on and change your view point in ways you hadn't expected. The

close relationships within cohousing communities make it likely that other residents will be aware of your involvement in the research project and may be able to recognise your contributions. It is not anticipated that taking part in this research will bring you any other disadvantages and risks.

What are the possible benefits of taking part?

It is hoped the information from this study will help other cohousing and residents groups in the future. There is no direct benefit from taking part in the research; however, I hope you find my time volunteering with you and your involvement in the research a positive and thought-provoking experience.

Will my taking part in this study be kept confidential?

All the information collected about you during the study will be kept strictly confidential. Only the research team (e.g. supervisors, transcribers and academic mentors) and I will be able to look at the information you give. When the results of the study are reported, your name or any other personal details will not appear in any outputs including reports, publications, presentations or data archives. Photos in research outputs will not contain faces unless you confirm in writing that you wish to appear in published photos. In all research, there is a legal obligation to notify other professionals to keep you safe if you say or do something that suggests there is a serious risk to you or the safety of others.

What is the legal basis for processing personal data?

The legal basis being applied in order to process your personal data is that 'processing is necessary for the performance of a task carried out in the public interest' (Article 6(1)(e)). Further information can be found in the University's Privacy Notice website https://www.sheffield.ac.uk/govern/data-protection/privacy/general.

What will happen to the information collected and how will it be kept secure?

All the data collected will be secured in a locked cabinet or on the controlled access University of Sheffield networked filestores, the researcher's own encrypted and password-protected computer and an encrypted and password-protected external hard drive. The University of Sheffield is the Data Controller. After the end of the research project (expected 2022), all personal information will be destroyed. An anonymised version of the data will be given to the UK Data Service within three months of the end of the research project where it can be used by other researchers in answering future research questions. If you wish to complain about how your personal data has been handled, information about how can be found in the University's Privacy Notice https://www.sheffield.ac.uk/govern/data-protection/privacy/general. The findings of the research may be published in academic papers, reports, websites, conferences, presentations, teaching materials and book chapters. The findings of the research will also be used in workshops, online resources, newsletters and published materials for other cohousing and resident groups.

Who is organising the research?

The Economic and Social Research Council is funding this PhD research through the White Rose Doctoral Training Partnership at the Department of Landscape Architecture, University of Sheffield. This project has been ethically approved via the University of Sheffield's Ethics Review Procedure, as administered by the Department of Landscape Architecture.

Who do I contact for further information or if something goes wrong?

If you have any questions or are not happy with anything about the research, please contact my supervisor or myself with the details at the bottom of this sheet.

Thank you for your time

Aimee Felstead, PhD researcher: alfelstead2@sheffield.ac.uk
Kevin Thwaites, Supervisor: k.thwaites@sheffield.ac.uk

The University Of Sheffield.

The University Of Sheffield.

Places in Common: Participant Consent Form (Interviews)

Please tick the appropriate boxes	Yes	No
Taking Part in the Project		
I have read and understood the participant information sheet dated 11/11/2019. (If you will answer No to this question please do not proceed with this consent form until you are fully aware of what your participation in the project will mean.)	☐	☐
I have been given the opportunity to ask questions about the project.	☐	☐
I agree to take part in the interview. I understand that taking part in the project will include an audio-recorded interview on the topic of resident involvement in the design, maintenance and management of shared residential landscapes.	☐	☐
I understand that my taking part is voluntary and that I can withdraw from the study; I do not have to give any reasons for why I no longer want to take part and there will be no adverse consequences if I choose to withdraw. Any information I have provided will be withdrawn from the study, unless it is already anonymised, published or archived, when it is no longer possible to do so.	☐	☐
How my information will be used during and after the project		
I understand my personal details such as name, phone number, and email address etc. will not be revealed to people outside the project.	☐	☐
I understand and agree that my words may be quoted and photos I take may be included in publications, reports, web pages, conferences, presentations, teaching and other research outputs. I understand that I will not be named in these outputs unless I specifically request this.	☐	☐
I understand and agree that other authorised researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.	☐	☐
I understand and agree that other authorised researchers may use my data in publications, reports, web pages, conferences, presentations, teaching and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.	☐	☐
I give permission for the anonymised transcript of the interview that I provide to be deposited with the UK Data Service in the ReShare depository or UK Data Archive so it can be used for future research and learning.	☐	☐
So that the information you provide can be used legally by the researchers		
I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield.	☐	☐

Name of participant [printed] Signature Date

Name of Researcher [printed] Signature Date

Project contact details for further information:

PhD Researcher: Aimee Felstead alfelstead2@sheffield.ac.uk
Supervisor: Kevin Thwaites k.thwaites@sheffield.ac.uk
Head of Department: Anna Jorgensen a.jorgensen@sheffield.ac.uk
The University of Sheffield, Department of Landscape, Floor 13, The Arts Tower, Western Bank, Sheffield, S10 2TN

The template of this consent form has been approved by the University of Sheffield Research Ethics Committee and is available to view here: https://www.sheffield.ac.uk/rs/ethicsandintegrity/ethicspolicy/further-guidance/homepage

Places in Common: Video Walking Tour
Children & Parents' Information Pack & Consent Form

"Hello, my name is Aimee! I am a student at the University of Sheffield."

"I am studying **shared gardens in cohousing**. I want to know how **you** use the garden where you live."

"Would you like to help **make a video tour** around your garden and tell me how you use it?"

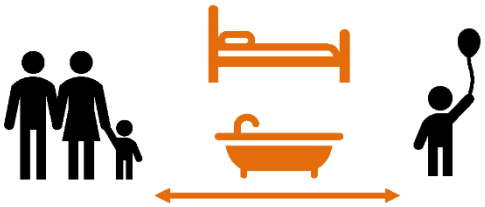
"I will watch your video and tell other people the things I learn, so they can **design and make** their own shared gardens"

In your video you can tell me about…

- ✓ Thing you like to do in the shared garden
- ✓ What you like & don't like about the shared garden
- ✓ How you share the garden with other people
- ✓ The 'rules' for using the garden
- ✓ What you would like to change about the shared garden

When filming outside…

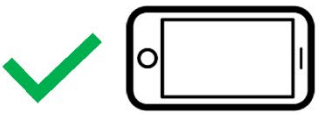
Keep **at least 2m apart** from people who aren't in your family. That is about the length of a bed or a bath.



Places in Common: Video Walking Tour
Children & Parents' Information Pack & Consent Form

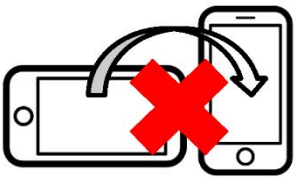
The University Of Sheffield.

Do…



Do hold the phone **sideways**

Don't…



Try not to move the phone **around**

Do film **yourself** or **your parent**

Don't film **other people**

Do film **shared gardens** & **your own garden**

Don't film inside **other people's houses** or gardens

Do film your **drawings, plans** & **notes** of the garden

Don't film **other people's information** unless you ask them first

Places in Common: Video Walking Tour
Children & Parents' Information Pack & Consent Form

Read the sentences and ✓ tick the boxes you agree with.

☐ I have read the information pack and asked my parent(s) any questions I have.

☐ I want to take part in making a 'video tour' of the shared garden where I live.

☐ I know that I can stop or take a break at any time.

☐ I am happy to be filmed and for other people to watch the video for this study.

My name is _____

I am _____ years old

Places in Common: Video Walking Tour
Children & Parents' Information Pack & Consent Form

Please tick the appropriate boxes	**Yes**	**No**
Taking Part in the Project		
I have read and understood the 'A. Participant Information sheet' dated 11/11/2019 and 'B. Video Tour Information & Guide' dated 5/05/2020. (If you will answer No to this question please do not proceed with this consent form until you are fully aware of what your participation in the project will mean.)	☐	☐
I have been given the opportunity to ask questions about the project.	☐	☐
I have read through the 'C2. Children & Parents' Consent Pack' with my child(ren).	☐	☐
I agree to my and my child(ren)'s taking part in the project. I understand that taking part in the project will include you making a video recorded tour on the topic of resident involvement in shared landscapes.	☐	☐
I understand that my and my child(ren)'s taking part is voluntary and that I and/or my child(ren) can withdraw from the study at any time; I do not have to give any reasons to withdraw. Any information I have provided will be withdrawn from the study, unless it is already anonymised, published or archived, when it is no longer possible to do so.	☐	☐
How my information will be used during and after the project		
I understand my and my child(ren)'s personal details such as name, phone number, and email address etc. will not be revealed to people outside the project.	☐	☐
I understand and agree that my and my child(ren)'s words may be quoted, and video stills may be included in publications, reports, web pages, conferences, presentations, teaching and other research outputs. I understand that I will not be named in these outputs unless I specifically request this.	☐	☐
I agree that clips from my video data can be used in the research outputs mentioned above. These clips will not include you or your child(ren)'s names, voices or faces, but could include recognisable landmarks or buildings that identify your place of residence.	☐	☐
I understand and agree that other authorised researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.	☐	☐
I understand and agree that other authorised researchers may use my data in publications, reports, web pages, conferences, presentations, teaching and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.	☐	☐
I give permission for the anonymised transcript from the video that I provide to be deposited in the UK Data Service data archive so it can be used for future research and learning.	☐	☐
So that the information you provide can be used legally by the researchers		
I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield.	☐	☐

Name of parent [printed] Signature Date

On behalf of my child(ren):

Name of researcher [printed] Signature Date
AIMEE FELSTEAD

PhD Researcher: Aimee Felstead alfelstead2@sheffield.ac.uk
Supervisor: Kevin Thwaites k.thwaites@sheffield.ac.uk
Head of Department: Anna Jorgensen a.jorgensen@sheffield.ac.uk
The University of Sheffield, Department of Landscape, Floor 13, The Arts Tower, Western Bank, Sheffield, S10 2TN

Appendix C: Interview Guide

(A) WALKING INTERVIEW: INTRODUCTION

[Introduction to purpose and walking interview method]

- Thank you…
- The aim: to understand how you participate in shared outdoor spaces with other residents

    1. Background questions.
    2. Walk around cohousing site: how you are involved in the shared outdoors spaces
    3. We can go wherever you want, I will ask questions
    4. I have brought a camera…
    5. After, follow up with a few questions

- Time: one hour

[Consent and confidentiality]

- Did you get a chance to read the participant information sheet?
- Questions?
    - The interview will be audio-recorded
    - Withdrawing consent
    - De-identifying the transcript
    - Your words will be quoted in research outputs
    - Anonymised data submitted to a data archive
- Here is the consent form, take your time to read it and ask me any questions.

[Demographic form]

- Collect some information about you: background for the research.
- [Fill in form]
- Any answers will be put into broader categories so you can't be identified
- If you prefer not to answer any of these questions that is fine too.

[Audio recording] I have brought along an audio recorder. Do you mind if this activity is being recorded?

[Questions?] Do you want to ask me any questions before we get started?

(B) OPENING QUESTIONS

- ☐ Tell me a bit about yourself and What made your first consider living in cohousing? *(motivations)*
- ☐ Tell me about your involvement in … cohousing: when did you first get involved? *(history)*
- ☐ What is your role/ how are you involved in the shared outdoor spaces? *(involvement)*

(C) WALKING TOUR

[Participant led exercise] Start with the spaces closest to your house/flat or the space you feel you have most connection to. Topics/prompts (emerging from early pilot interviews):

- Layout of the site and design of space
- Individual spaces
- Personal motivations/interests
- Conflict resolution
- Uses of spaces/activities
- Maintenance
- Rules and organisation
- Decision Making
- Relationship with neighbours
- Public events or access
- Working with professionals
- Networks

(D) FINAL QUESTIONS

Finally, I just have a few final questions

☐ What has been most successful in enabling residents to participate in the shared outdoor spaces? *(solutions)*

☐ What has been most challenging in enabling residents to participate in shared outdoor spaces? *(problems)*

☐ What advice would you give to other resident groups about shared outdoor spaces? *(solutions)*

(E) DEBREIFING

[gaining feedback / consent / issues of confidentiality]

- How was that for you? Is there anything you didn't get a chance to talk about/places we couldn't go?
- Is there anything you would rather not be included in the recording?
- Do you have any feedback on how the interview was conducted?

[highlight interesting points]

- That is the end of the interview.
- Thank you: lots to think about.
    - 1. Listen back to the recording, write up a transcript
    - 2. Remove any identifying information
    - 3. Copy of that transcript?
    - 4. Further visits
    - 5. Sharing research findings / workshops
- Questions?

Appendix D: Multimodal Transcript Extract

[Image redacted]

Appendix E: Coding Matrix Extract

Category	New no.	*Old No.*	Name	No. of cases	Case Study Evidence			
			*no. of cases		[redacted]			
ESTABLISHING A VISION	**1**	*1*	1. Shared intentions	4	*C01: Professional interest C01's parents: Enjoyed previous shared housing experience*	R42: Change in lifestyle, isolation in older age R39: Previous experience, collaboration R41: Previous	Based around four stated [redacted] motives. R26: Permaculture R44: Through friends	[redacted]are driven to share resources and live together by shared aims including 1) mutual support gained by living
ESTABLISHING A VISION	**2**	*2*	2. An evolving vision	4	*The build is evolving over time so new families are gradually joining over*	Involving propsective residents in decision-making and email lists.	Policies are reviewed reguarly. R38: Children contribute	R01: Child unexpectedly moved in, and then another family with
ESTABLISHING A VISION	**3**	*5*	3. Value in diversity	4	*More houses than original group means more people beyond the initial group will need to*	R39: Preferred to have joined a more established group. R46: Joined cohousing to lived	R26: Variety in preference made choosing allotment plots easy, because everyone	Joined later by younger couples and family with children. R01: Child unexpected joined due
ESTABLISHING A VISION	**4**	*3*	4. Self-selecting group	4	*RC01: A family and friends extended living project. Started with a*	R39: Speaking of previous experience in cohousing, there was a	Members left through the process. R44: Interested in cohousing	R01: Original group of friends and acquaintenances in
ESTABLISHING A VISION	**5**	*4*	5. A steady core	4	*RC01: Core group of 3-4 households who'd known each other only recently*	R39: Speaking of previous experience in cohousing, there was a	A group of existing friends.	3-4 original members, mostly 50+ retired. R01: Original group of
ESTABLISHING A VISION	**6**	*6*	6. A manifesto	3	*Four guiding principles on their website guide the more detailed aims of the project*	R39: Very few agreed guidelines, need some.	*Check [redacted]website for vision statements?	R01: Explored what members values and desires around shared living were before joining
ESTABLISHING A VISION	**7**	*32*	7. Policies & agreements	3	*None known at the moment - ver small*	Few guidelines currently in place. Gardening	Allotment policy, front garden policy, pet policy,	They goup have a vegetarian kitchen and
MAKING DECISIONS	**8**	*14*	8. Picture in many ways	3	*The resident-practitioner used a range of models and drawings to talk*	case studies, website links, pinterest board (internally). Technical		Skecthes, models, 1-to-1 massing, prcedent images, sketchup models
MAKING DECISIONS	**9**	*7*	9. Signposting	3	*Not formally implemented yet, very small group.*	A flowchart as a tool to evaluate which decisions should be consulted with	R26: Hierarchy of decisions. A community agreement outlines	Recently restructured the smaller working groups and outline a
MAKING DECISIONS	**10**	*11*	10. Open channels	3		Weelkly Zoom meeting. Ways of submitting	Email list.	WhatsApp is more instant, but not everyone
MAKING DECISIONS	**11**	*8*	11. Whole group concensus	4	*Use concensus decision making, goes to majority*	Whole group meetings.	Overall site plan with annotations. Major and	Need an overall site plan for tree planting. Regular
MAKING DECISIONS	**12**	*9*	12. Smaller working groups	4	*No formal groups. Individuals and small*	List of jobs, flexible so people can choose what	Residents self-select which working group	Smaller group working on construction of shed
MAKING DECISIONS	**13**	*10*	13. Having a say	3	*Can be dificult for one person to speak up if*	Residents make proposal based on their own	Membership responsibility to input on	Daughter made proposals for wildlife
MAKING DECISIONS	**14**	*13*	14. Communication training	2		R46: Need to be proactive. Undertook a series of workshops to	Some members undertook training in becoming facilitators to	Considerate of others views. Let go of sole control, willing to share.
MAKING DECISIONS	**15**	*12*	15. Decision logging	2	*RC01: Plans useful as a record of everyone agreeing through formal*		Decisions get logged, so there is a clear decision-making porcess, so they	P: Small issues keep popping up again even after agreeing. R04:
CREATING RESOURCES	**16**	*24*	16. A learning project	4	*Residents learning skills through the design process which are*	Firsthand knowledge exchange during workdays on an informal	See themselves as a learning project. Skill share days between	Knowledge exhcanged during workdays. Learning to construct the
CREATING RESOURCES	**17**	*26*	17. Pooling resources	3		Look after chickens - the chicken group. Food growing group. Bring a	Pool together allotment plots, shared allotment plots, the chicken group	Pooling together money contributions to shared meals and for buying
CREATING RESOURCES	**18**	*15*	18. Communal workdays	4	*One-off weekends or workdays several times a year to tackle large jobs*	Recently started having regular monthly workdays. Previously it	Monthly workdays, conicide with open days. Lead coorindator, list of	Getting people together is a challenge. Adhoc maintenance. Twice
CREATING RESOURCES	**19**	*25*	19. Individual knowhow	3	*Ethos statement values each residents contributions no matter*	Some residents passionate abut growing vegetables, gardening or	Residents aware of own abilitys and self-select for working groups, roles	Professional background, familiar with meetings, minute take, agendas.
CREATING RESOURCES	**20**	*16*	20. Individual enterprise	4	*More informal decision making in a smaller group. One resident does*	Often maintained on an adhoc basis. Two keen gardeners with two	Small private back garden, balcony and allotment. Front garden	Lots of examples of individual enterprise. Temporary and
CREATING RESOURCES	**21**	*20*	21. Self-build in stages	4	*Renovation happening across four stages. The landscape will be last.*	Building happening over two stages to help with costs. Limited budget for	Buildings and hard landscape complete, but soft landscaping	Self-build shed, raised beds and planting. Decided to do the
CREATING RESOURCES	**22**	*17*	22. Quick fixes	4	*Temporary fake grass as play area. Temporary patio space.*	Bin and bike store in a tempoary container. Temporary ramp up o	Chickens trialled on temporary basis. Junk pkay. Boundary log wall.	quick fix. Temporary raised beds from reused materials. Patching
CREATING RESOURCES	**23**	*18*	23. Trial runs & mock-ups	3	*The temporary patio outsie the commonhouse.*	Desire lines - contraversial idea.	Junk or DIY play to create temporary and moveable play equiptment. Trialled	The architect used balloons to mass out the buildings on site 1-to-1.

Appendix F: Workshop Materials

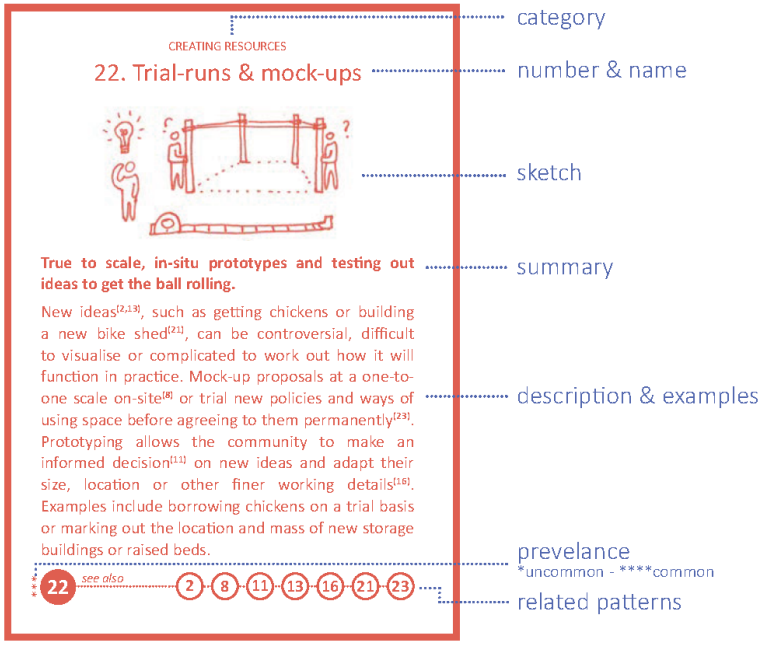
[Image redacted]

What is a Pattern Language for Cohousing Landscapes?

The 'Pattern Language for Cohousing Landscapes' is a deck of **72 cards with solutions to common problems for getting residents involved in shared outdoor spaces** played as a game by cohousing communities, design practitioners and other partnering organisations.

How do I read a pattern card?

Each solution is presented on a playing card as a pattern. A pattern describes the essence of a solution commonly used by other cohousing communities. You can apply the pattern in whatever way most suites your group, space and situation. Patterns are connected to each other, so you can combine them together to find the best solution.



How do I find the 'right' pattern?

You can find the 'right' patterns by playing the group card games described on the next page. The patterns are numbered, colour coded and organised into categories in the game pack (Sheet A) to make it easier to find the pattern most suited to your problem. You can also use the maps in the game pack which organise the patterns by where they are found on a typical cohousing site (Sheet B), how they can be used to connect and collaborate with other people (Sheet C), and how they can help balance different tensions and conflicts (Sheet D).

[Image redacted]

How was the pattern language made?

A Pattern Language for Cohousing Landscapes was produced as part of PhD research into how cohousing residents get involved in shared residential landscapes. The patterns for cohousing landscapes are based on the problems and solutions experienced during workdays, interviews with residents and design practitioners, and in photos and documents from four cohousing communities across the UK. Each cohousing site was at a different stage of development, size, and layout, but all were located in towns or cities and were actively involved in the design and maintainance of shared outdoor spaces. The research couldn't have taken place without the openness and generosity of the participating residents' time and input, particulary during the pandemic, when residents continued to remotely contribute to the research in varied and creative ways, including making video diaries.

What next?

This first draft version of the pattern language has been produced for the cohousing groups who took part in the research, as a way to share some of the research findings and hopefully as a useful tool for the group. It is hoped that the pattern language will be further tested and developed as a tool for other cohousing groups and potentially other types of shared residential landscape and community projects. If you would like to feedback on your experience of using the pattern language for cohousing landscapes to help improve it, I would be grateful for you to fill in the feedback survey (sheet F) within this pack.

In addition to the pattern language, I plan to write a thesis, conference presentations and papers that explore the theory of urban commons, method for developing the pattern language and the challenges, tensions and solutions experienced by cohousing groups in more detail. If you are interested to read more about this, please contact me below.

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[redacted]

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Pattern Game Feedback Suvey

The University Of Sheffield.

Before you fill in the survey, please take a moment to read this information and fill this consent form.

The Pattern Language for Cohousing Landscapes is part of the "Places in Commons" PhD research project aiming to find and share ideas for residents to get involved in the shared outdoor spaces.

What do I need to do? You are being asked to voluntarily fill in a survey about your experience of taking part in a group card game activity, introduced in the accompanying lecture.

Is this anonymous? The survey does not ask for any personal information. If you choose to include any personal information in the survey, it will be kept confidential and removed from any research outputs. The information you give may be quoted in research outputs, including teaching, publications and presentations. Later, the anonymous data will be made available to other researchers via the UK Data Archive repository.

Contacts: If you have any questions, concerns or complaints about this study you can contact Aimee Felstead (alfelstead2@sheffield.ac.uk) or my supervisor, Kevin Thwaites (k.thwaites@sheffield.ac.uk). If the complaint relates to how your personal data has been handled, you can find information about how to raise a complaint in the University's Privacy Notice: https://www.sheffield.ac.uk/govern/data-protection/privacy/general

The legal basis being applied in order to process your personal data is that 'processing is necessary for the performance of a task carried out in the public interest' (Article 6(1)(e)). Further information can be found in the University's Privacy Notice website https://www.sheffield.ac.uk/govern/data-protection/privacy/general.

I have read and understood the project information above. ☐ **Yes**

I have been given a contact where I have the opportunity to ask questions about the project. ☐ **Yes**

I understand that my taking part is voluntary and that I can withdraw from the study any time before I submit the survey. I do not have to give any reasons for why I no longer want to take part and there will be no adverse consequences if I choose to withdraw. ☐ **Yes**

I understand that the survey will not ask for my personal details, and any personal information I include will not be shared outside the research project. ☐ **Yes**

I understand and agree that the survey data can be used in reports, research papers, and other research outputs and that the data will be made available on the UK Data Archive. ☐ **Yes**

I agree to take part in the project. I understand that taking part in the project will include filling in a survey after taking part in a group card game activity. ☐ **I agree**

I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield. ☐ **I agree**

Date game was played: .....

Which pattern cards did you select to play / put down during the activity?

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.....

Did these cards help you develop a scenario for how residents might get involved in your housing design?

yes / no *(If yes please describe the scenario below)*

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.....

.....

Did playing the card game prompt any new design ideas? *(If yes please describe below)* yes / no

.....

.....

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What else did you get out of playing the card game? .....

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What didn't work? What could be improved? .....

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