Established and emerging group build *(Baugruppen)* development processes

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Abstract

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Regulatory reforms aimed at increasing the housing supply also create new opportunities for households to jointly develop housing for their own use. To achieve goals in sustainable urban development, planners may leverage natural household incentives to prioritize building lifecycle cost and social value over short-term profit. New business opportunities emerge for architects and developers as generators of, and consultants on, group build projects.

With an eye toward implementing an established German group building model in an American context, I outline the typical steps in the development process and frequent barriers that Baugruppen (building groups) face. I summarize qualitative data from interviews and virtual information sessions across three case cities—Berlin and Hamburg in Germany, and Melbourne, Australia—to show how governmental and professional stakeholders create replicable processes of group build project delivery. In a set of key takeaways, I assemble expert

opinions about the state of the group build sector, which has seen continual innovation and recent professionalization. Policy recommendations include proactive strategies for managing public and underutilized land, integrating group build into small business support infrastructure, and introducing fixed social and environmental criteria for project-based subsidies. I conclude with the view that group build—while still a niche model of housing delivery—can make valuable contributions to sustainable development at the workforce housing level, with further potential as an affordable housing solution through government intervention.

Acknowledgements

I'd first like to acknowledge Robert Mugerauer (1945-2022), a true source of wisdom and inspiration. As my initial committee chair, Dr. Bob played a significant role in the production of this document. Our meetings over the course of this academic year—to which Dr. Bob brought his trademark mix of levity and interrogation—were invaluable in shaping this research. His mentorship to all of his students continued right up to his last days, and he will be deeply missed.

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1.0 Introduction

> In much of the U.S., experimentation and innovation are in short supply today. Bitterly fought battles between the defenders of single-family homes and those who want most of us to live in ever-shrinking apartments off long, multistory corridors make people believe in a zero-sum game for finite resources. What's missing is a new creative spark that can elevate the discussion to a level where everybody can see themselves winning.
>
> Walter Jaegerhaus, architect and author (2021)

Amid a 37 percent decline from 2019 to 2021 in the number of existing homes for sale (JCHS 2021), it is not only American innovation that is in short supply. As the U.S. continues to weather the effects of the global Covid-19 pandemic, many of its households have rediscovered the importance of a home well-suited to their desires and needs. But under conditions of historically low housing supply—due primarily to underproduction by the building industry since the mid-2000s (JCHS 2021)—households find fewer such options when searching for a home in certain areas. Soaring prices may limit the space, the amenities or the neighborhoods available to them on their budget. Individuals may elect to spend a greater share of their budget on housing to ensure their needs are met, thereby restricting their ability to accrue savings or allocate income towards other household expenditures. This issue is increasingly seen as one affecting not only low-income households but also those near the median level, especially young families and first-time homebuyers (Forrest and Hirayama 2018; Haffner and Hulse 2021).

American planners and policymakers are responding with reforms to address the supply gap, from the federal level (White House 2022) on down to state and local governments. Reductions in single-family-zoned areas, paired with the promotion of "missing middle" housing typologies, stand to open up much greater swaths of our cities to those seeking affordable, suitable homes (Parolek 2020). Streamlining entitlement permitting processes seek to reduce regulatory hurdles that stifle new construction and allow smaller-scale builders to participate without accruing excessive predevelopment costs (Colton and Ahluwalia 2019; Herriges 2021). After legalizing development of accessory dwelling units, planners in Portland, Oregon and Washington, DC found significant interest among homeowners to act as self-developers in their own backyards. They recognized the need to provide further mediation between citizen-groups, and further education about financing options and code compliance (Lo et al. 2020).

These reforms represent crucial steps toward addressing entrenched conditions of underproduction and crowding out of small-scale builders. In conducting this study I'm driven by what could come next; by

what further developments these reforms could leverage. Housing lasts for a long time, and U.S. local authorities have to grapple with a range of issues beyond the numerical addition to the stock. In the twenty-first century, post-financial crisis, post-pandemic U.S., there is a need for housing that is

- adaptable for residents' future needs
- supportive of cross-generational and non-nuclear family structures
- integrating shared amenities that encourage social interaction and economy
- constructed and operated in an environmentally-efficient manner.

As Wetzstein (2017; 2021) has argued, the scale of what is rapidly becoming a global urban housing affordability crisis, and the shared challenges that nations face in navigating climate change, post-financial crisis austerity measures, and rising inequality, means that planners and researchers now need to look across borders to identify—and reproduce, or adapt—truly progressive housing outcomes. It's not simply a matter of importing a successful housing policy or two. It will take a coordinated effort that draws on expertise from planners, politicians, architects, and developers, whether for-profit or non-profit. And it will require commitment from citizens motivated by the lack of suitable housing options in areas they wish to live in.

We have seen the coordinated efforts of these stakeholders consistently produce innovative, forward-thinking housing projects under the German development model known as Baugruppen, or "building groups". These are groups of households who form a legal entity together and jointly finance the design and construction of their own dwellings. A Baugruppe (singular), then, refers to the group organized under this legal and financial framework. It would represent the client, or ownership entity, of a real estate project developed under this model of group building. The group commissions an architect and often provides significant input about the type of building(s) and dwelling units they would like to inhabit. The group may also receive support from local government through land allocation, links to financial lending outlets, and development consultation (Ache and Fedrowitz 2012; Scheller and Thörn 2018; Szemző et al. 2019). This report examines the stakeholders, subsidies and policies that comprise these support networks.

The buildings themselves can take on a range of types and forms. Most typically, Baugruppen self-develop multifamily buildings that are organized under ownership or cooperative tenure and sited in urban areas (Krämer and Kuhn 2009; Urban 2018). The buildings may be new construction or adaptive reuse of existing structures. Building cooperatives and condominiums provide the closest parallels in form, with the key difference being that Baugruppe projects are self-developed by the owner-occupiers. Cohousing is not quite synonymous, either: while the two may feature the same forms of tenure, cohousing may be developed by a third party, and it tends to incorporate shared spaces, meals, or chores as defining features (Ring and London 2017). These are optional for Baugruppen. A building group may *choose* to create cohousing if it wants to, but it may just as well decide to build a condominium together.

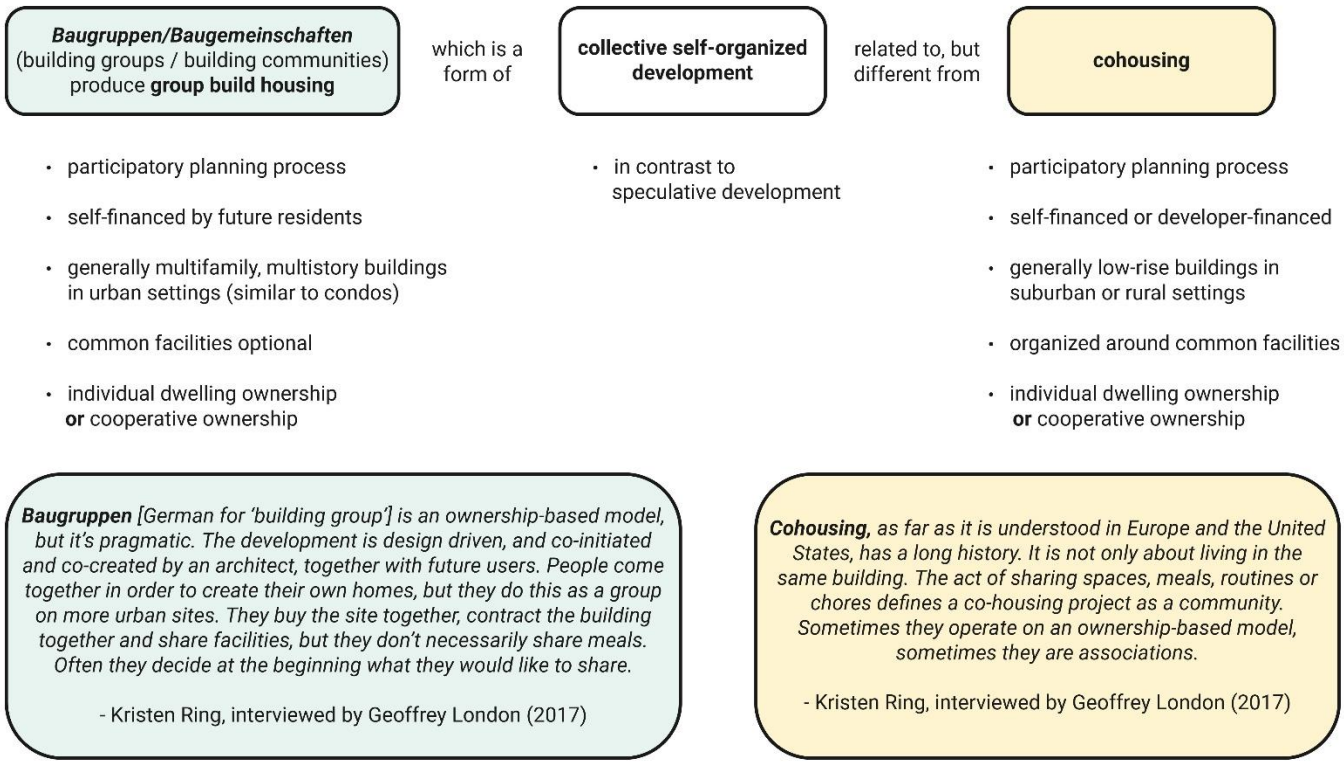


Figure 1. Comparison of Baugruppen and cohousing.
Diagram by author, with written descriptions from Ring and London (2017).

1.1 Research objectives

This study aims to portray the unique and contemporary processes of citizen-led self-development under the Baugruppen model. In doing so, it uncovers the major barriers that building groups face as they form, plan, construct and eventually occupy their residences. By investigating Baugruppen development in three cities—Berlin and Hamburg in Germany, where the process has become professionalized, well-supported, and generally *established,* and Melbourne, Australia, where it is *emerging*—the study assesses how policies and stakeholder relations have formed in each sector to overcome the development barriers. It classifies these variations as certain structures of Baugruppen provision. These case cities are relatively large in population and in stature; as such, they are not spared from the wave of worldwide real estate speculation, and they all exhibit significant housing market pressure. Citizens and certain local authorities have as a result come to embrace the largely positive properties of this bottom-up housing strategy, despite its status as a niche or alternative endeavor relative to speculative, developer-driven housing production (Benson and Hamiduddin 2017).

The development process requires a significant amount of residents' time, their labor in both blue- and white-collar trades, and their financial capital. The most distinctive feature of the Baugruppen process is the lack of a for-profit developer, and the ability to effectively carry out the entire process without expending too much time, labor or capital is a significant determinant of whether a building group succeeds. If it does, it delivers a multifamily building *at cost*, rather than at market rate. This has been shown to save participants up to 25 percent on their home price, given that a developer profit margin and marketing costs are not in play (Kopec, Doudova, and Dusek 2015). An exploration of how municipalities, Baugruppe households and other professional intermediaries combine to fill the developer's role is crucial to understanding how this housing model has become established in the German cities and how it's emerging in Melbourne.

Based on these objectives, the research questions underlying this report are:

1. **What key barriers in the development process must Baugruppen overcome?**

2. **How do governmental, professional and resident stakeholders interact in the case cities to overcome these barriers?**

3. **What replicable processes of Baugruppe project delivery do these stakeholder assemblies create?**

1.2 Structure of this study

This study is distinct from much of the existing research in that it will focus less on the social, environmental and economic *outcomes* of group building projects, which are by virtue of the practice quite varied and tailored to the objectives of each building group. Section 2, after detailing the conceptual framework of the *structures of housing provision,* provides a scan of these outcomes, including some common sustainable design concepts that building groups have organized around and realized. Section 3 describes the qualitative research methods used. Interviews conducted and information sessions attended are coded and listed in the Appendix.

The analysis in section 4 addresses the research objectives and questions above, walking the reader through the Baugruppen development process, the case studies of Berlin, Hamburg and Melbourne, and the stakeholder assemblies in each. An executive summary at the beginning of each case study characterizes the state of Baugruppen development in the city and lists specific takeaways for U.S. planners and policymakers. Summary statements of each city's Baugruppen sector are as follows:

- In the heated property market of **Berlin,** architects assume a preeminent role in generating Baugruppe projects. They leverage robust online networking infrastructure to oversee building group formation. Projects typically feature high levels of social and environmental sustainability.

- A high level of stakeholder coordination, combined with dedicated governmental support to building groups, allows **Hamburg** to leverage Baugruppen to meet objectives in affordable, sustainable urban development.
- Two initiatives, led by private sector professionals, adapt the Baugruppen model to create low- to medium-density urban infill in **Melbourne.** Projects are ownership-based with high design quality, and have attracted significant demand.

Section 5 discusses overall takeaways that represent points of consensus among interviewees across the case cities. The findings include:

- rising development costs leading to professionalization within each sector
- the importance of a core group of motivated households working in alignment
- the role of building groups as innovators in sustainable urban development
- financing as the most significant barrier, especially upfront equity requirements
- strong potential in the U.S. for new business opportunities in architecture, development consulting and social impact investment

The takeaways provide initial direction for professionals seeking to implement group build projects and local authorities seeking to support them. Several areas for further academic study follow. Section 6 concludes the study with some concrete next steps for American professionals of the built environment to take.

1.3 Examples of projects delivered under the Baugruppen model

Figure 2 (left). The Leuchtturm cooperative (at right); which inspired a similar cross-generational, energy-efficient cooperative (at left).
Figure 3 (right). Interior of a flat in Leuchtturm.
Both designs and photos by Winterer-Mohr Architektinnen GmbH.
Project details from Christopherson and Zeeb (2015)

"Leuchtturm" (Lighthouse) (2009: Berlin)

- Resident-initiated project
- Cooperative tenure with 'solidarity' financing (lower-income members pay lower rents, hold fewer shares)
- Land sold to nonprofit to ensure long-term affordability; co-op owns building and leases land
- Cross-generational membership; barrier-free design
- Passivhaus construction.

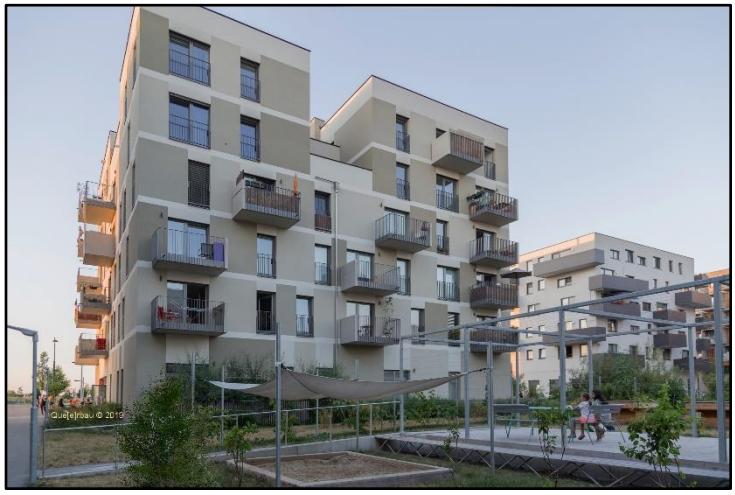
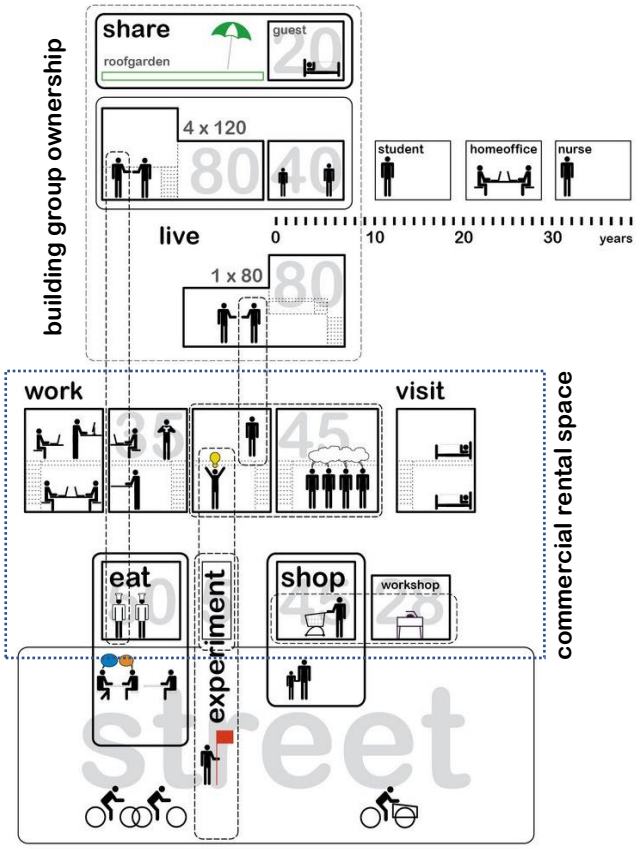


Figure 4 (left). Street view of Que[e]rbau Seestadt and common facilities. Photo: Tuula Palaste.
Figure 5 (right). Ground-floor atrium operated by residents, which acts as a neighborhood hub for meetings, events and tolerant encounters.
Photo: Club Que[e]rbau.
Project details from LaFond and Tsvetkova (2017)

Que[e]rbau Seestadt (2017: Vienna)

- Nonprofit-initiated project
- Participatory design for queer inclusivity and non-nuclear family structures
- 30% of flats subsidized by city / 5% reserved for refugees
- Coworking, yoga, seminar, teahouse and sauna rooms



Oderbergerstraße 56 "Mischen Possible" (2010: Berlin)

- Architect-initiated project (BARarchiketen)
- Mix of rental and owner-occupied flats
- Commercial space jointly owned w/ architects
- Total project cost: ca. $234/sf (sweat equity used)

Figure 6 (top). Street view of Oderbergerstraße 56. Photo: Jan Bitter.
Figure 7 (bottom). Owner-occupied flat interior. Photo: Jan Bitter.
Figure 8 (right). Building use mix. Diagram: BARarchitekten.

Alte Schule Restoration (2014: Niederfinow)

- Resident-initiated project
- Owner-occupier tenure
- Rural setting adjacent to biosphere reserve
- Communal kitchen, garden and guest suites
- Studio space / painting school operated by residents

Figure 9. The restored elementary school. Source: CoHousing Berlin.

2.0 Literature review

After looking at the context of group building—in which the question of what exactly is to be gained by enabling citizen-developers is addressed—this review presents some of the recent discourse on the role Baugruppen can play within demand-side and supply-side housing policy. Then it summarizes some of the well-documented benefits in social and environmental sustainability that Baugruppe projects consistently show. It concludes with a look into how local authorities can best target their support toward building groups, for neither the prospect of sustainable living nor a supportive policy environment alone can facilitate the conditions for Baugruppen to establish as an alternative to market-rate housing. Simply put, the delivery of a multifamily building remains a time-consuming and expensive process; and there is a reason why most Western markets today are dominated by speculative development firms. Yet despite this high threshold for the citizen-developer (Parvin et al. 2011), bottom-up interest in collective self-organized development continues to increase, along with top-down strategies to support it (Tummers 2016).

2.1 Context of group build housing

The following section clarifies a guiding principle of this study: the socioeconomic and sociopolitical relationships between the wide range of agents that coalesce to develop housing under the *structures of housing provision.* It will then illustrate how these relations are tuned in certain ways where Baugruppen are established, yet can represent barriers to implementation if tuned differently. Next is a review of the documented benefits to sustainability, which indicates the incentive for government agencies to reassess their available means of housing provision. The review concludes with an assessment of existing government intervention in Baugruppen development to see what's working and what to be wary of.

2.1.1 The structures of housing provision

While government exhibits perhaps the greatest effect on what gets built where—or doesn't—the development of a building is nevertheless a product of many interrelated negotiations between interested parties. Michael Ball (1986) argues that the fields of planning and urban studies neglect the social potential of housing provision, treating the built environment as only the physical framework around which the important social processes of our city take place. Part of it is because buildings last for a long time, and are for most of their lives seen as finished products that we drive by or walk into. But there is an important and underappreciated set of stakeholder interactions during property development that should not be reduced, as is often done in planning, to the parties of producer and consumer, and to the classifications of land and building uses (Ball 1986). Palmer (2019) brings this argument into the contemporary, commenting that urban plans for densification tend to "black-box" multifamily housing by considering only inputs of policy and outputs of production, or dwelling units. This is because the provision of multifamily housing has gotten sufficiently complex that it has been somewhat ceded by

planning to the development industry, and, by extension, the free market. While controls exist in the form of zoning regulations, building codes and design review, there isn't a planning mechanism to reconcile the admittedly valid short-term perspective of the developer, building to sell housing product, with the longer-term values in lifecycle management and community cohesion that planners and the households in question may share.

Group building provides a good chance for planners to rethink this. Building groups often feature participants who can leverage their own labor, both blue- and white-collar (Duncan and Rowe 1993), meaning more of the social interactions necessary in development—the design, the accounting, the raising of equity, the project management, the construction—are integrated within a group familiar with one another and invested emotionally and financially in the outcome. In other words, development becomes less transactional and more social, as it is quite literally an exercise in cooperation between future neighbors. This even extends outside the building itself, as Seemann, Jahed, and Lindenmeier (2019) show that building groups go on to exhibit neighborliness and willpower for broader community improvement.

Ball's concept of the *structures of housing provision* (SHP) provides a theoretical framework for comparative housing research across nations (Martens and Harloe 1990; Ball and Harloe 1992) that is of particular relevance to group building. An SHP framework satisfies the research objective of classifying Baugruppen stakeholder assemblies in each case city. As Martens and Harloe (1990) argue, it's not enough to simply describe the distinct housing policies that nations adopt and determine whether to apply them in a different context. Policies are only part of the SHP equation. Just as important is the set of stakeholders who interact with one another in a given housing sector: the government, the private landowners, the construction industry, the developers and financiers, and the residents. Their interactions during the processes of housing *production, exchange and consumption* (the three together; housing *provision)* need to be discussed along with the relevant policies in a nation's housing sector.

The social relations between stakeholders are important to address, as developing real estate jointly with future neighbors is a social event in and of itself. But stakeholders' economic incentives are key, too, and they run the risk of being left out of a strict policy analysis. Take for instance the placement of financial risk during development of a multifamily housing project. Under a speculative structure of provision, the status quo is for the developer to retain much of that risk, as well as the decision-making capacity with respect to dwelling size, design and sustainability ambitions. But the short-term relationship that the developer has with the building—especially under build-to-sell models—means that these lasting and vitally important decisions in new construction remain on the speculative side of provision, catering most frequently to what the market supports at the current time, and typically designed for an unknown, nominally-average consumer of market-rate housing (Parvin et al. 2011; Brown et al. 2013).

This carries significance especially for urban planning initiatives that seek land-use intensification. The argument here builds on one made by Palmer (2018) that, as cities pursue higher residential density, the existing structure of speculative provision will leave a limited diversity of housing product that won't satisfy the broad-ranging needs of its residents. This can be true for single-family areas upzoned to include "missing middle" typologies, where significant economic constraints limit the ability of small-scale developers to innovate. It can also be true in inner urban markets, where property development is increasingly dictated by corporate investments (Sassen 2016). Both zones stand to see changes in tenure towards more rental offerings, which further restrict the ability for residents to self-define their communities (Forrest and Hirayama 2015). Although Baugruppen—nearly always multifamily projects, frequently with ownership tenure—are unlikely to unseat the dominant structure of speculative provision, their ability to meet planning and resident objectives that the current paradigm may ignore makes them worthy of local authorities' consideration as a strong alternative.

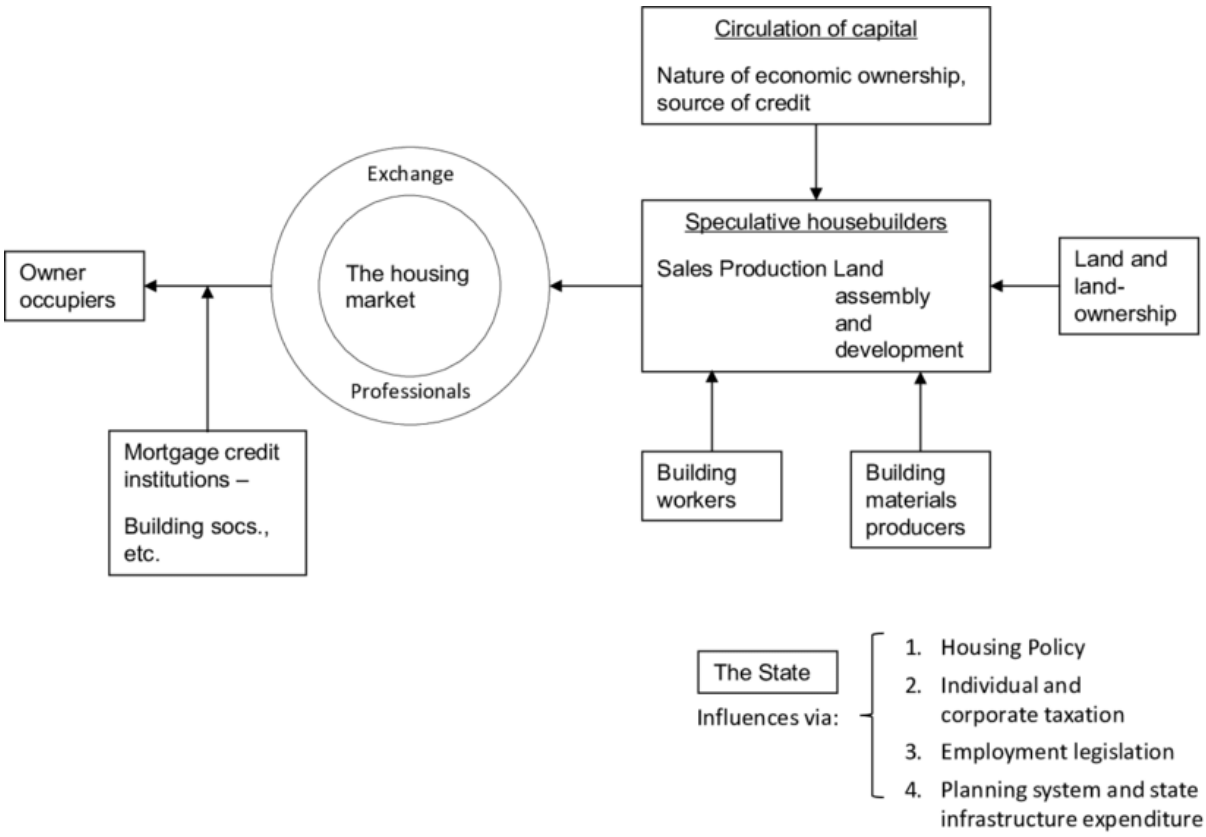


Figure 10. The structure of owner-occupied housing provision in Britain.
Original diagram by Ball (1983); reproduced digitally by Song (2020).

2.1.2 The marriage of government and speculative development

Of the many agents that comprise a structure of housing provision, the government is an especially important one that affects all others. By enabling capital interests to remain dominant in building provision, whether through bailouts of speculative real estate finance firms, or through the leveraging of private capital in recent Western European social housing provision, governments have historically acted in support of profit-driven development. Yet they have also placed checks on it when necessary (Ball 1986). It could be said that most governmental demand-side housing policy today does a little bit of both: through mechanisms like mandatory affordable housing targets or density bonuses for sustainability or affordability, governments are conditioning the provision of multifamily housing on meeting comprehensive planning objectives. These policies, again, do less to address *who* is building the housing and to whom they are accountable. Housing *provision* remains a black box; all that's visible is the policy inputs and the production outputs, measured in terms of affordable or sustainable dwelling units built.

This review is not attempting to decry land-use intensification and demand-side interventions as urban policies. It seeks instead to point out, as Sharam and Bryant (2017) have, that the existing structure of *multifamily* housing provision is a largely speculative enterprise, and it lacks a public policy mechanism to advantage the owner-occupiers of dwellings over those who seek investment returns from them.

This is a relevant concern in light of the discourse on supply-side reforms to address housing shortages. Wendy Steele (2012) and Janelle Orsi (2019) have dissected this discourse in their advocacy for a supplemental movement focused on "slow" housing. Their argument is that the current hallmarks of supply-side reform emphasize speeding up the development process—since time is money—by removing regulatory barriers and streamlining planning reviews. Whether these are valid measures for jurisdictions to undertake is less relevant for Steele and Orsi than *what* and *whom* these reforms stand to serve. Since we've established the trend toward subjugation of social, place-based aims in favor of economic asset-value, shouldn't we expect even more of the same if supply-side barriers are reduced? Those seeking to develop property still need enough accumulated capital to absorb the many soft costs in preliminary architectural design, engineering consulting and entitlement permitting. For developers navigating rising land costs, a limited set of project typologies are going to pencil out even under a looser regulatory environment (Herriges 2021; see figure 11). A scathing review of recent multifamily development in the UK calls the multifamily housing product "…a form of deprivation: unhealthy, socially isolating, inflexible, energy-hungry buildings, and the second smallest dwellings in the whole of Europe." (Parvin et al. 2011, 15). The mentions of size and isolation refer to the prevalence of one- and two-bedroom flats in UK central city markets and the resulting shortage of units for larger households. In these markets local governments have turned to large, efficient "volume-build" development firms to address housing supply shortages. Small-scale developers have mostly been crowded out.

Steele (2012) and Orsi (2019) argue that municipalities should leverage development-streamlining policy to bring more actors into development; primarily, those focused on delivering projects in accordance with actual resident desires and those who support architectural design that respects regional vernacular. This is in line with discourse around the New Localism movement and its call to revise certain aspects of

community participation in planning. Jarvis (2015, 205) asks planners to consider the questions "...who gets to build what, where and how, and why people feel motivated to co-create alternative housing solutions," because such considerations "...reflect the extent to which development is meaningfully citizen-led—whether citizens shape the neighbourhood and homes according to their own needs or whether one community steers the development according to the anticipated needs of another."

The implication is that planning to increase multifamily housing supply under status quo public participation models means that 1) developers will propose a limited set of design options to the community review board, 2) the community will *consult* the developer by selecting their preferred option rather than *participate* in generating actual alternative outcomes to the base scheme, and 3) future residents, and even future generations, will remain on the outside of the participatory process. This highlights a fundamental issue that New Localism seeks to address through support of community-led alternatives such as group build: that "...relationships between housing, place and community development are viewed in piecemeal fashion; worse still, when 'solutions' are applied to one piece of the puzzle (building more houses to address affordability), they can disrupt other key relationships." (Jarvis 2015, 210).

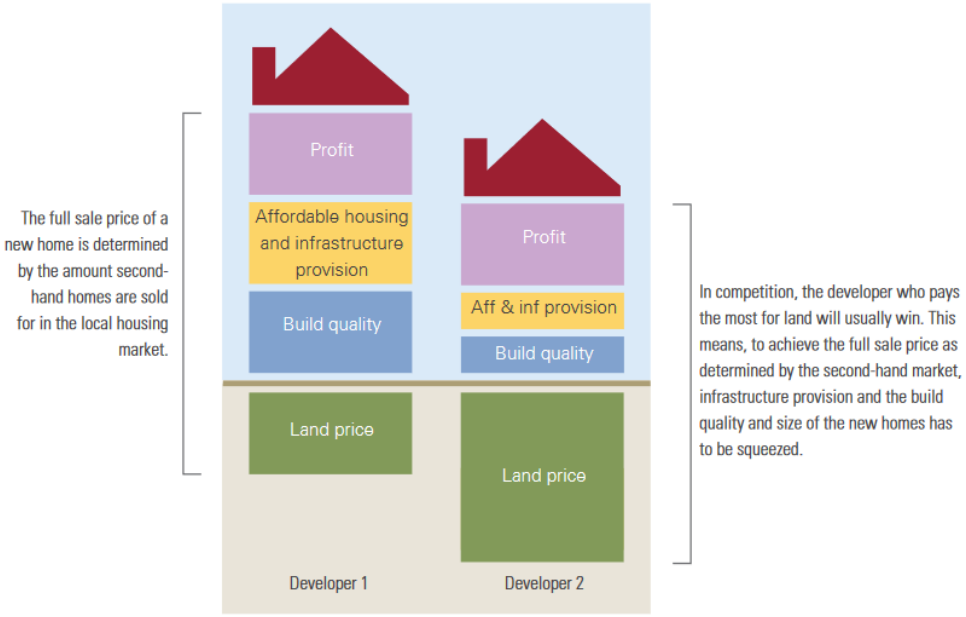


Figure 11. For the speculative developer, changes in land price squeeze build quality and affordable housing/infrastructure provision, while profit remains constant. Diagram: Jefferys et. al (2015, 34).

Despite these concerns regarding citizen participation under demand- and supply-side frameworks, the broader policy objectives to increase affordability and sustainability are positive planning moves, to be sure. This study is not arguing for collective self-organized development to act as a replacement for speculative development in any sense. Rather it is attempting to point out that community needs and

desires are going unmet under a speculative structure of provision, and there is room for planners to more effectively center these localized resident desires. By working to open the black-boxed development process so that residents' values may be integrated from the jump, planners can pursue important programs of sustainable, affordable densification while still countering the reduction in resident agency that occurs under speculative multifamily provision. The motivations for undertaking group build show that many residents *do* want to incorporate sustainability or other alternative arrangements into their lifestyle, but they don't necessarily want to be forced out to rural or suburban cohousing arrangements, or to commission a customized single-family residence (Palmer 2019). Without going so far as to say the multifamily development market is broken (Sharam and Bryant 2017), it could benefit nonetheless from increased "thickness", with more suppliers in the game who have local ties. Yet a few structural obstacles stand in the way, and local authorities are implicated in helping to overcome them.

2.1.3 Structural obstacles to implementation

Though limited due to the study timeframe, the existing research shows that obstacles to Baugruppen implementation generally come from the lack of a clear support structure—often, but not always, a government-created one. But since the perceived sustainability benefits of Baugruppen are many, it's important to find out why the model hasn't yet gained wider acceptance. Governments have in the past sought to transfer cooperative housing policy from places with thriving sectors, but again, policy alone is not enough when economic and political contexts differ. Clapham and Kintrea (1987) assessed the effectiveness of the UK Housing Act of 1961, which implemented cooperative housing policy modeled on those of Norway and Sweden. The legislation was considered a failure: despite a £28 million investment in pilot projects, only 40,000 units were built over 25 years, and 70% of those later switched tenure to market-rate ownership. They argue the failure stemmed from a lack of *cooperative infrastructure:* financing streams, subsidies, and networks to promote and link participants, in which Scandinavia had invested alongside. The message is that importing policy alone will not successfully incubate a new housing model. Rather, housing self-provision must be considered as a holistic system of stakeholders and infrastructure. Case studies in section 4 of this report show the breadth of such a cooperative infrastructure, which has been key to increasing uptake of the Baugruppen model.

There are also personal attributes of income, free time and household composition that become indicators of who can undertake group building (Duncan and Rowe 1993). One series of structured interviews with Baugruppen participants found high personal expenditures of time and money in both negotiation and construction (Seemann, Jahed, and Lindenmeier 2019). Potential participants are well aware of the commitment required. This can lead to the practice of self-selection and even de-selection of members, fostering a "niche group" of resident-builders with middle-class status and similar educational backgrounds (Hamiduddin and Gallent 2016). Younger, two-income couples (Figueira and Trevisan 2019), possibly leveraging family money, and older residents looking to downsize or upgrade from their existing home (DM-M-01) are two common cohorts that often end up together within a Baugruppe project. Yet in each of the case cities, targeted support for residents outside of this niche group is working to expand Baugruppen accessibility.

Longstanding demand from German citizens for governmental assistance with their group build projects helped to build the cooperative infrastructure detailed in section 4 (AfB-H-01). I argue that, in an American municipal context, building a comparable support network that makes group building an affordable, accessible housing option is a long-term project worth beginning today. But the *justification* for creating this infrastructure stems not only from citizen demand but from the fact that Baugruppen consistently deliver projects on the cutting edge of sustainable design practice. From a municipal perspective, this aligns with sustainable urban development goals that planners are currently embracing (Scheller and Thörn 2018). This makes it worthwhile to support innovative projects even if the model is primarily a niche middle-class endeavor. Then, in the interim, planners can lay the groundwork for improving accessibility to lower-income households by taking precedent from the mature German Baugruppen sectors and the upstart one in Melbourne.

2.2 Sustainable social and environmental benefits

The key to understanding the sustainable benefits of group build lies at the beginning of the whole development process, where building groups are formed. Since the rise of Baugruppen in early 2000s Germany, the economic allure of eschewing professional development costs has not been the primary motivation for engaging in group build. Instead the shared goal among participants of co-habitation with like-minded individuals formed the basis of most early efforts (Urban 2018). Building groups, with the knowledge that their membership will be comprised of future neighbors, tend to materialize around common interests and values in urban living. Often one future inhabitant—or, frequently in Berlin, an architect—takes initiative to form the group and recruit friends or acquaintances (Urban 2018). This was most common among early 2000s Baugruppen. More contemporary groups, whether or not they begin in this way, now market the central concept of their project to the broader community to either form a group or increase the density of their existing group. Most often this is through online social networks, but word-of-mouth, community meetings (Eliason 2014b) and newspaper advertisements (Urban 2018) are used.

The central concepts around which Baugruppen organize are generally responses to the lack of diverse housing choices in urban markets. They fall under the broad categories of affordability, diversity, architectural quality and sustainability (Ring 2019). Some projects are narrowed further to emphasize certain environmental values, such as car-free or low-energy living (Eliason 2014b), or specific types of social arrangements (see figure 13). The following sections detail these central concepts and emphasize how well they align with planning policy's stated goals for sustainable urban development.

2.2.1 Social

A diverse range of households have formed intentional communities through group building. Projects have accommodated the needs of non-nuclear and intergenerational family structures (Colletti 2019), young families who would have left for the suburbs (Ruby and Janson 2014), those combating isolation and loneliness (Roberts 2018), LGBT households (Queerbau 2021), and women-only building groups (Colletti 2019). The latter two groups especially benefit from the safe spaces created by intentional communities that are free from harassment or discrimination. A Hamburg local official stressed this point in describing his city's continued advocacy for building groups (AfB-H-01).

Underlying the social benefits exhibited by Baugruppen is a strong ethic of active citizenship, which manifests as group members become involved in participatory decision-making processes within their project (Viskovic Rojs et al. 2020). The case study of Spreefeld illustrates active citizenship well. Colletti's (2019) lecture at Northeastern University traces the development of this well-known Berlin Baugruppe that was a response to municipally-sanctioned privatization of the Spree riverfront. A squatter's community of tents, formed in protest on a prominent site along the Spree, eventually collaborated with the City of Berlin to fundraise for self-development of the site, which they secured at market price. This cooperation produced a 65-unit project with communal and commercial spaces, affordable rental dwellings for low-income participants, and *Passivhaus* construction that significantly reduces ongoing housing costs. The riverfront remains open to the public.

Figure 12. Elevation of Spreefeld, Berlin, from river. Drawing by fatkoehl architekten.

The focus of initiatives like Spreefeld on claiming city space for existing residents with a stake in the area, rather than the hypothetical residents to be attracted by speculative development, illustrates the political position of the Baugruppen movement. It's a response not only to the commodification of housing within capitalist markets, but also to a technocratic, professionalized planning environment that defaulted to privatization of a valuable public asset (Urban 2018). Yet ambitions for collective self-organized (CSO) development are often not as grand as in Spreefeld. Many participants are simply responding to the lack of available housing options for their specific situation. Like other forms of CSO development, Baugruppen provide a means for citizens to shape the social context in which they operate. Social objectives are often adjacent to those of municipal urban policy: care for aging and youth populations, maintenance of local identity under globalization, and participatory urban development (Tummers 2015), to name a few. Seeing these go unrealized in their housing markets leads citizens toward this alternative model of provision.

Central to the social dimension of group build is the idea of reciprocity between participants, because reciprocity begins at the early stages of development and carries through to maintenance of the end product (Hamiduddin and Gallent 2016). Participants, united initially by a common purpose, then rely on one another in pooling their resources and knowledge towards that purpose. After completion of the building, the ties often strengthen: participants frequently cite the robust support structure within their Baugruppe built around reciprocities such as childcare, food shopping and on-site food production, and

the simple availability of neighbors in times of illness or physical need (Seemann, Jahed, and Lindenmeier 2019). Social cohesion materializes around this alliance with, and reliance on, one another. It is the leveraging of individual human capital to create a shared social capital (Hamiduddin and Gallent 2016).

Baugruppen provide an additional chance to form social cohesion because of their nature as communitarian projects. During the development process, not only do the eventual owner-occupiers build closer ties, but they will also form working relationships with the many agents involved in housing provision—the architects and planners, the financial and legal stakeholders, the tradespeople, and more. Perhaps most importantly, they will establish relationships early with their broader community. Baugruppen participants are more likely to engage in other forms of participatory planning after the building is complete, primarily through neighborhood development organizations and working groups. This works both ways: citizens become more influential placemakers in their communities, and municipalities strengthen their planning processes by receiving more public engagement and decision-making (Brown et al. 2013).

Allocating to neighborhood residents the authority of placemaking is something planners often seek to do. But as argued earlier, there is only so much placemaking that can be done under the current structure of speculative housing provision. The following argument from Parvin et al. (2011) illustrates how this structure relies wholly on housing as a product to facilitate community ties and fails to leverage housing as a placemaking process.

> One of the key structural weaknesses of the speculative housing delivery model is that because end-users have no role in the production process, it isolates them as individuals. Your neighbour is simply whoever you end up buying the house next-door to. Policymakers and architects have therefore been on a steep uphill struggle trying to support any community cohesion at all. They have tried to do so largely on the supposition that somehow the design of three-dimensional objects in a certain way can engender positive community interaction. To some extent it can, but speculative housebuilders are naturally cautious about taking unconventional design decisions that may help do this (such as creating no-car zones between front doors). Not knowing their buyer, they tend towards a lowest-common-denominator sales offer: high-security; high-privacy; clearly delineated ownership; minimum-effort access. Self-provided housing (particularly group self-provided housing or co-housing) forms relationships through the actual process of making a place, rather than expecting the product alone to engender community relationships in spite of the isolating procurement process. This also means that design questions can be negotiated, and users can co-design the kind of neighbourhood they want to live in.
>
> (Parvin et al. 2011: 33-34)

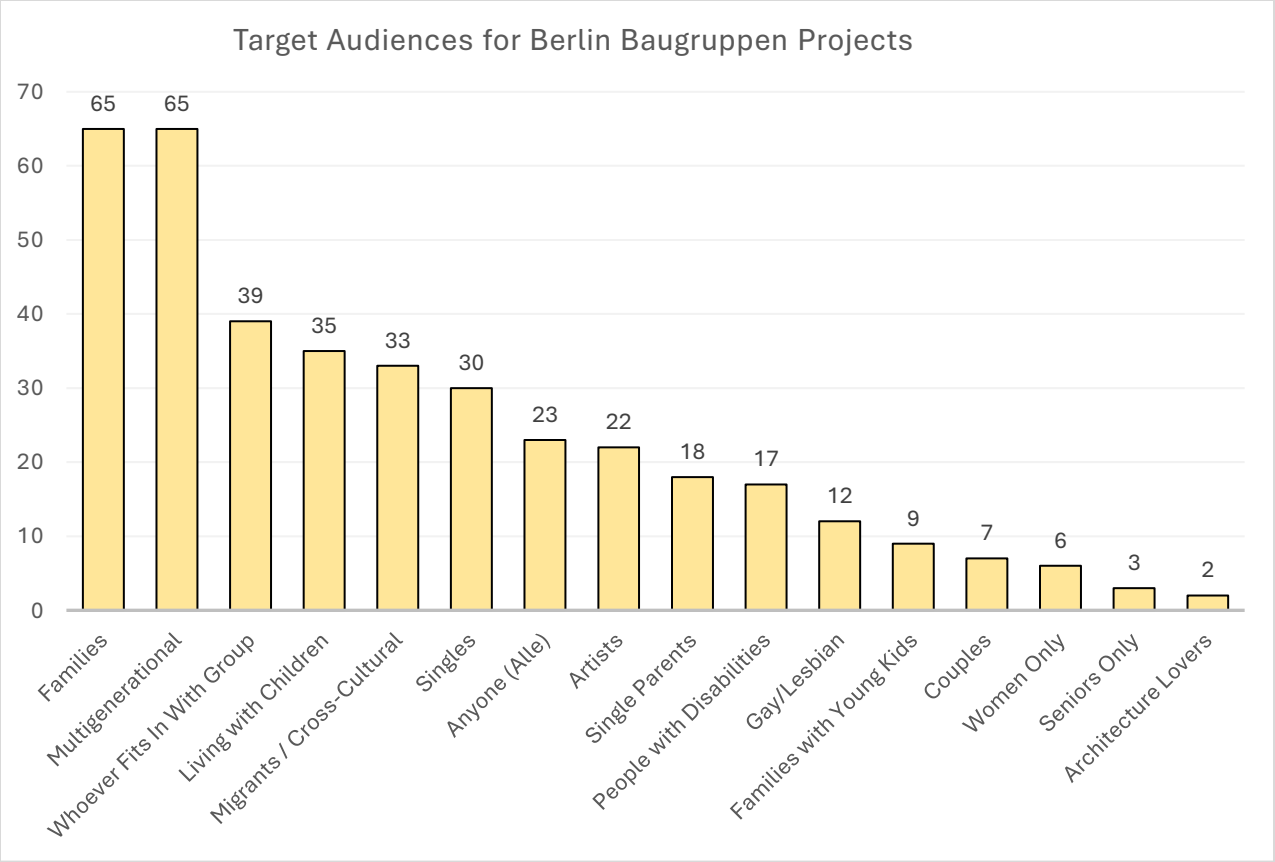


Figure 13. Self-reported target audiences for recently listed or completed Berlin Baugruppen projects. Chart by author; data from CoHousing Berlin.

2.2.2 Environmental

As the genesis for Baugruppe projects is quite often a shared vision of urban living that is currently unavailable for participants, it is perhaps no surprise that many building groups have incorporated environmentally-conscious design choices into their projects. The incentive for doing so extends beyond ideology, however, and gets right to a key strength of the Baugruppen model: the involvement of future owner-occupiers from the beginning. This adds another dimension to sustainability. Not only can environmentally-conscious households create conditions for sustainable lifestyles and behavioral choices through design, but they may also invest more directly in improved building performance as a sustainability measure. There are natural incentives to decrease the lifecycle cost of building operations when development arises from the perspective of those responsible for operational costs. A recent survey of 84 residents across 16 collaborative housing projects found a tendency for residents to value the long-term savings generated by energy-efficient building design. Residents preferred to compromise elsewhere, in areas such as the overall square footage and finish level of their private dwellings (Brysch and Czischke 2021). This section reviews sustainable outcomes that Baugruppen have produced, considering decisions made both in individual building performance and in environmentally-conscious lifestyle.

2.2.3 Building performance

Recent Baugruppen projects have shown a tendency to use innovative construction methods and choose low-energy design options. While comprehensive data on the proportion of high-performance or innovative Baugruppen designs relative to all new construction do not exist, one can get a snapshot of current trends by exploring databases of recently completed and proposed projects. On the CoHousing Berlin database (cohousing-berlin.de/en) developed by id22: Institute for Creative Sustainability and Winfried Härtel Projektentwicklung, projects can be sorted by Organizing Principles, which represent building groups' primary design objectives; as well as Special Design Features, which project initiators desire to include.

This current snapshot shows a pronounced emphasis on building performance as a driver of Baugruppen projects. Of the 291 listed projects (236 within Berlin city-state limits, and an additional 55 in the state of Brandenburg), an ecological emphasis was the second-most frequent Organizing Principle for Baugruppen with 89 results. This ranked just behind cost-effective construction as the most common organizing principle. Additionally, 118 projects listed energy conservation as a desired Special Design Feature for their building, which was over twice the frequency of the next-most listed feature, handicapped-accessible design.

An overall scan of the Organizing Principles shows that environmental considerations are slightly outpacing socially-focused objectives such as mutual care and cooperative living arrangements (which are common for cohousing but remain optional features in Baugruppen). The Special Design Features, by contrast, are overwhelmingly oriented towards sustainable building practices. Even soil health, a rarely discussed measure of sustainability that prioritizes adaptive reuse to limit new impervious cover, ranked as a common feature. When looking at the environmental bent of current Berlin group builds, what should be stressed is the higher relative importance of lifecycle cost to the building group *and* the group's ability to center that importance by being involved from the beginning in participatory design (Eliason 2014a). Green, urban living as an inherent principle of Baugruppen projects hearkens back to the model's countercultural roots: many of the early participants, who cooperatively purchased and retrofitted Berlin's late 19th-century tenements, were of a radical leftist persuasion with an environmentalist agenda and a rejection of the suburban lifestyle. Their projects were visible and popular among Berliners, and their values became relatively well-integrated into the mainstream once the German Green Party gained a governing role in coalition with the Social Democrats from 1998-2005 (Urban 2018). Then-chancellor Gerhard Schröder—as well as his successor Angela Merkel of the Christian Democrats—provided significant subsidies for green building technologies.

Figure 14. Self-reported organizing principles for recently listed or completed Berlin Baugruppen projects. Chart by author; data from CoHousing Berlin.

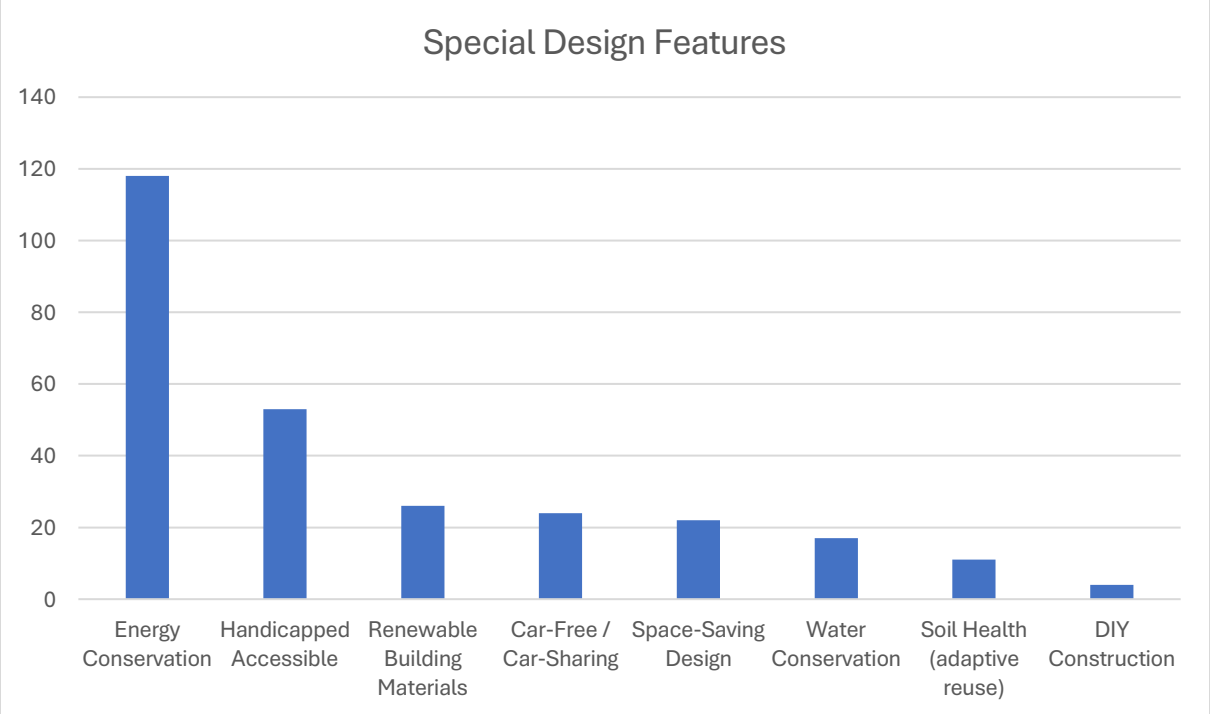


Figure 15. Self-reported design features for recently listed or completed Berlin Baugruppen projects. Chart by author; data from CoHousing Berlin.

2.2.4 Construction methods

As consensus between future inhabitants governs design decisions for most Baugruppe projects—often more so than the risk calculations or prior practices that speculative developers may account for—there is the opportunity to incorporate an ecological mindset into the project's construction phase. By no means is construction innovation the exclusive domain of Baugruppen, yet at the same time it's hard to ignore the path that some more recent projects are taking. Established Baugruppe architecture firms have been crucial in pushing innovation in materiality and in construction methods, which can result in lower construction costs and energy bills for the group. Roedig.Schöp Architekten's *3xGrün Baugruppe* in Berlin's Pankow district (figure 16), built for a stunningly low $175/sf, incorporates cross-laminated timber construction and prefabricated wall assemblies (Eliason 2014a).

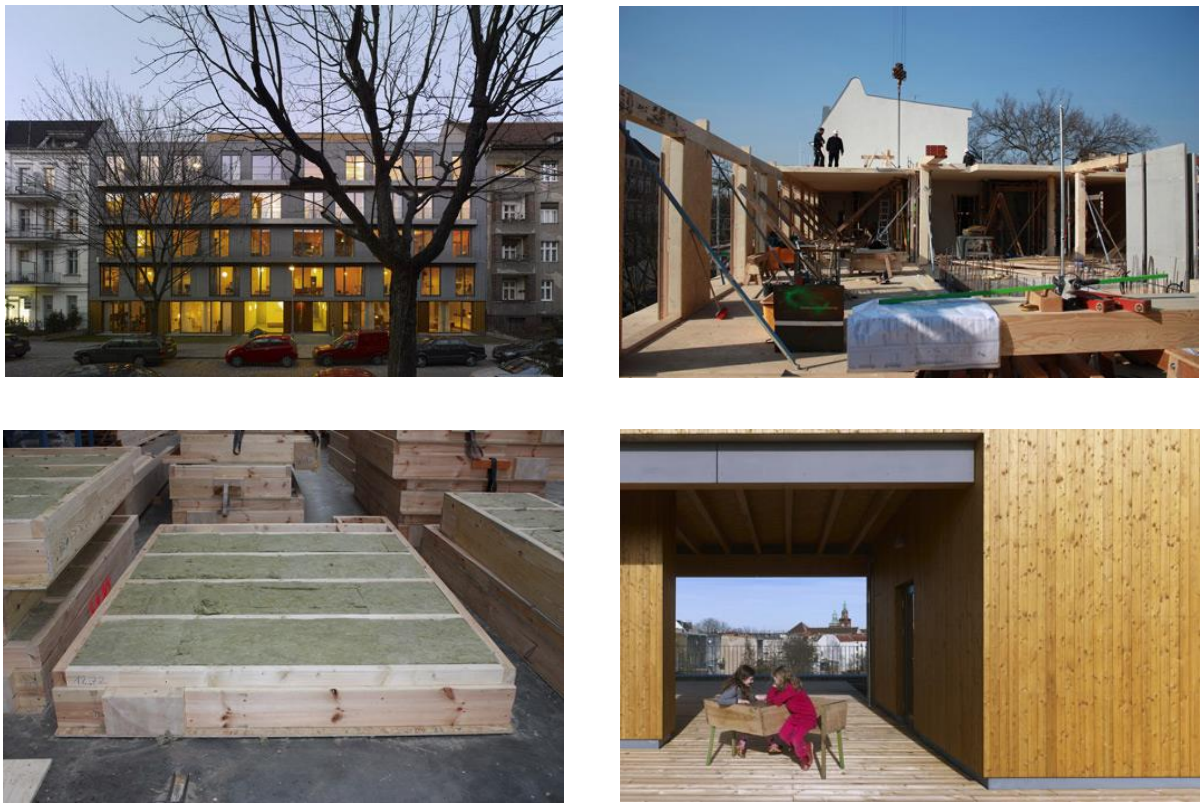


Figure 16. Timber construction and prefabricated wall assembly in the 3xGrün Baugruppe. Photos: roedig.schöp architekten.

2.2.5 Lifestyle choices

There is a lack of quantitative assessment of sustainable design choices made under collective self-organized development; instead, the supportive evidence for it as an improvement over conventional, developer-driven housing delivery is presented largely through case studies. Tummers (2016) notes that comparative mapping and measuring of outcomes in key fields such as unit density, dwelling size per person, ecological footprint per household, and frequency of shared facilities will strengthen the

discourse on CSO housing as a whole. The expectation already exists in the housing studies field that by facilitating a more cooperative lifestyle, CSO development reduces individual household footprints and allows for mutual reinforcement of sustainable practices. But further justification is necessary in the form of empirical data, to provide solid backing for planners, legislators and any others with stakes in demand management.

Nonetheless, the qualitative work completed so far is worth summarizing. The potential for more effective sustainable living as part of a like-minded community comes up frequently among interviewees as a rationale for engaging in CSO development (Benson and Hamiduddin 2017). Baugruppen, as distinct from other forms of CSO housing, typically build higher-density multifamily structures in urban areas. As indicated, they provide a clear opportunity for households seeking a customized dwelling to remain in more central locations instead of commissioning development of a single-family residence. Not only does this align with the preferences of one key Baugruppen demographic—creative, often well-educated, with an urban lifestyle—it allows for retention of this demographic within the city instead of losing it to the suburbs. This sprawl-reduction measure was a key objective of the city of Freiburg, Germany during its collaboration with a citizens' working group to implement a Baugruppen eco-district on a vacated NATO base (Eliason 2014a; see figure 18). Like Spreefeld, a squatters community had occupied the site, and together with an architect and biologist they comprised the working group that would develop this low-impact scheme from the bottom up (Thorpe, n.d.).

One of the most striking features of this eco-district is that it is car-free. Some parking is included on the perimeter of the district, but the design concept, termed a "city of short distances", separates vehicles from homes and incorporates mixed-use development where most essential services are attainable within walking or biking distance (Hamiduddin and Daseking 2014). Car-free living remains a frequent feature of German Baugruppen schemes and has also made the jump to Australia, where a midrise pilot project in Melbourne, The Commons, budgeted space for two carshares and 72 bikes instead. Resident input in this project led to the inclusion of a public ground floor, shared laundry and large communal vegetable garden on the roof deck (Cumming 2018; see figure 17).

These sustainable features are not exclusive to Baugruppen or other CSO housing models. Parking-free residential projects with shared facilities are built quite frequently by developers when supported by the zoning code and the market. If saturated by a critical mass of demand, the market may change to support even more of them. The argument here is that the reliance on speculative delivery to produce these sustainable benefits means we must wait patiently for demand to increase to the point where lenders perceive the risk to be acceptable. In other words, the unconventional must become conventional, so

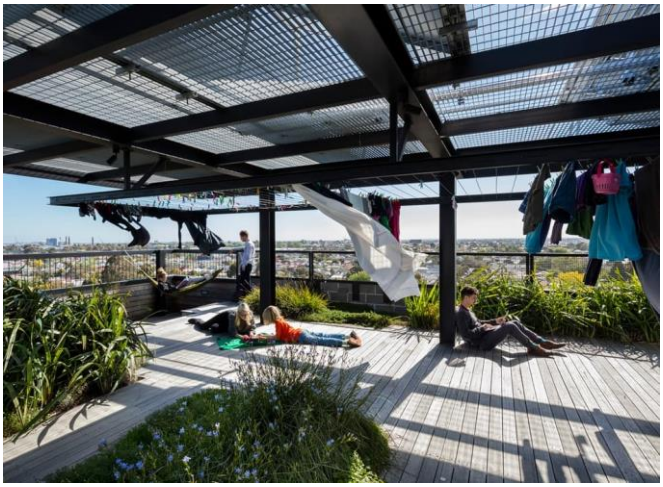


Figure 17. The Commons in Melbourne, Australia. Photo: Breathe Architecture.

Figure 18. Vauban in Freiburg, Germany. Photo: Glen Koorey.

that lenders can be sure new buildings with ostensibly "unorthodox" features will be sold or leased up upon construction completion (Sharam, Bryant, and Alves 2015). Yet the prior examples demonstrate situations in which residents, given the choice, *already* prefer such features within a dense urban setting. They are even compelled to produce the options themselves in order to remain in that urban setting. And since the choices in sustainability, whether social, financial or environmental, align quite well with contemporary objectives in municipal housing policy, a clear supporting role emerges for local authorities.

2.3 Governance and urban policy

Building groups in Germany have enjoyed support from the public sector in various forms. In Berlin, local government provided financial and institutional support after the 1984-87 *Internationale Bauausstellung* (International Building Exposition, or IBA), which piloted the self-build model known today as Baugruppen. Seen internationally as a driver of urban change, building expositions have occurred throughout Germany and Austria for over a century, and some argue similar vehicles for progress could benefit U.S. cities today (Jaegerhaus 2021). After the IBA, Berlin's *Wohnungspolitische Selbsthilfe* (Self-Help Housing Program) worked to legalize and facilitate squatting communities' renovations of over 350 tenement blocks into collaborative, sustainable developments (Droste 2015). While the program ended in 2000, new support structures have been formed at the municipal level, which section 4 will detail.

2.3.1 Municipal facilitation of group build

If government is to intervene in the housing market through support of specific project types, there are risks to be wary of. Perceived unfairness in the selection of projects to support is a major one. A comprehensive review of 18 German municipalities found that owner-based Baugruppen models received more governmental support than rental- or membership-based cohousing developments, despite the latter displaying greater social diversity and integration within projects (Krämer and Kuhn 2009). This goes to Hamiddudin and Gallent's (2016) claim that Baugruppen can act as gentrifying schemes by virtue of participant self-selection. Municipalities must then confront a dilemma: when the

organizing principles of the like-minded building group include, as many do, investing in higher-quality sustainable architecture, this necessitates a larger upfront capital investment that can be exclusionary. There is no one-size-fits-all solution to this issue, but planners should act on a case-by-case basis while being cognizant of what the free market would provide in building groups' stead. Two overarching goals for planners to consider when strategically focusing public support are (1) balancing power between project, neighborhood and the broader public, and (2) leveraging a win-win scenario by prioritizing projects that enhance neighborhood quality while also providing affordable units—thus relieving some government burden on social welfare provision (Droste 2015).

Cities are taking note of Baugruppen's role in social/architectural quality and in strategically rehabilitating urban neighborhoods or creating new districts. It is in their interest to attract homeowners with a vested interest in the place to combat increasingly empty luxury apartments in city centers (Ring 2019). When the luxury-focused urban real estate market cooled during Argentina's 2001 economic crisis, cities saw a rise in the alternative development model known as *fideicomisos:* multifamily projects collectively funded by the owners that put the architect in charge of development (Brown et al. 2013; Palmer 2018, see figure 19).

Additionally, greater top-down intervention in the Baugruppen development process has the potential to mitigate the critically important issue of land acquisition, as German municipalities have allocated plots for self-build ventures from both their existing public land holdings and in recent urban expansion plans. Comprehensive planning initiatives for new residential quarters in Freiburg, Tübingen, Berlin and Hamburg (see section 4) reserve a percentage of new plots for Baugruppen, which they typically dispense through competitions to groups with innovative and sustainable design plans. What must be stressed again is the ability for these planning efforts to ensure socially- and environmentally-sustainable new construction while placing relatively little additional demand on municipal resources (Droste 2015). It's not only municipalities that express interest in this strategy of deploying building groups as "seeders" of community in a new or rehabilitated urban quarter. Developers see value in building during the second phase of these renewal schemes, after building groups establish a sense of place and community that is marketable for speculatively built housing (Brown et al. 2013).

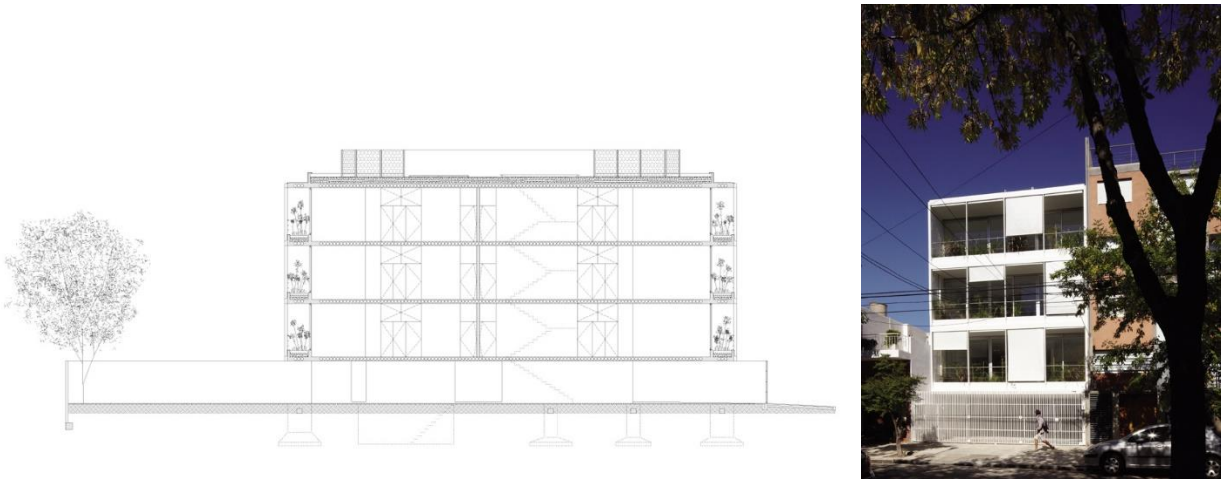


Figure 19. The 11 de Septiembre building in Buenos Aires, Argentina.
Drawing and photo by adamo-faiden architects.

2.3.2 The economic threshold of self-provision

Given the social and environmental policy objectives that increasingly guide municipal governance in Western Europe and the United States (Scheller and Thörn 2018), it stands to reason that authorities would have a vested interest in increasing support for projects that specifically advance these goals. But with resident-led, self-built collaborative housing ventures, the standard municipal practices of incentivizing development through construction subsidies, density bonuses, or development charge offsets only go so far. The existing research shows that the actual task of project management, of pushing along day-by-day the daunting process of acquisition, coordination, financing, design and construction, is a monumental task that does not easily divide between group members often working full-time in other sectors (Palmer 2017; Landenberger and Gütschow 2019).

Parvin et al. (2011) define this subset of challenges as the *economic threshold for self-provision.* If the objective is to lower the threshold, then the charge for governments is to provide a means by demands on participants' time, financial capital, social capital and knowledge capital is reduced. This represents an objective of this study going forward: to detail exactly what these demands are through three case studies, and to create linkages to the American context. As the sustainable benefits of collective self-organized housing are significant and fairly well-defined by now, it appears that recent policy shifts among local jurisdictions towards an ethos of socially and environmentally sustainable development (Scheller and Thörn 2018) are in alignment with the objectives of Baugruppen participants. In short, the positive outcomes are agreed upon. The following methods section will instead emphasize this study's focus on the group build *process*, as it remains less explored by the existing research, and it represents the more significant hurdle in transferring the model across jurisdictions.

3.0 Methods

My research methods in this study are qualitative, and center around three case cities: Berlin and Hamburg in Germany, and Melbourne, Australia. This strategy is a continuation of prior research in this field: Lang and Stoeger (2018) reviewed the effects of Austrian local institutional housing policies on collaborative development by employing a qualitative, multiple-case study design supplemented by expert interviews. The authors cite the relative newness and under-researched status of collaborative housing in general to justify their methods, and they encourage similar research conducted in the context of other localities. Scheller and Thörn (2018) also employ a case-study based approach and note that research examining the "...process that creates the conditions for everyday life" (Scheller and Thörn 2018: 918) in collaborative housing would run counter to much of the existing literature, which tends to focus on the outcomes of collaborative development; most often, the social improvements to residents' "everyday life" to which the authors refer, and which the preceding literature review has documented.

The overarching intent of this project was a knowledge exchange. I sought to learn about and describe the current state of Baugruppen development in these cities: which entities are advancing the sector, what barriers to further uptake have been identified and addressed, and how the original structure—of citizens pooling resources to develop their own housing privately—has been modified by the introduction of a network of supporting actors. The idea is, in transferring this knowledge to an American context, we need not start from scratch if we are to develop a Baugruppe pilot project or even supportive planning policy here. Interested parties, especially local authorities, architects, and nonprofit housing developers, may instead focus their support based on lessons learned from the mature German sectors and the burgeoning one in Melbourne.

I used information sessions, interviews and desk-based research to gather qualitative data about this research agenda in each case city. The transition to remote work amid the ongoing Covid-19 pandemic saw stakeholders move their Baugruppen information sessions from in-person to videoconference format. Participants noted the negative effects of this move on collaboration, though it was a bit of a silver lining from an international research perspective. With permission to attend as a guest, I participated in a live monthly session hosted by the city of Hamburg and a planning session of a building group in the Berlin region. Stakeholders in each case city recorded additional information sessions and made them publicly available.

I conducted nine interviews via videoconference; two were unstructured and seven were semi-structured. The American and Australian interviewees were purposively chosen for their expertise in what remains very niche markets for collective housing provision. The Berlin interviewees were purposively selected from project entries on the CoHousing Berlin platform (see section 2). After the live information sessions I conducted follow-up interviews with a Baugruppe member engaged in planning his future

dwelling, and a staff member of Hamburg's municipal agency for Baugruppen facilitation. My interview questions varied based on the local context of each case city and the professional role of the interviewee, but in all sessions we discussed the key barriers in the development process that interviewees perceived, as well as their opinions on the viability of an American Baugruppen sector. The language barrier represents a limitation of this study, as my knowledge of German is conversational but not fluent. For the German interviewees I prepared all interview questions in German, and the interviewees responded in a mix of German and English depending on their comfort level with the topic. With participant consent I recorded the audio and translated it to English after the fact. The Appendix contains a list of the interviews conducted and information sessions attended. Each is coded according to occupation, location and frequency of interview or session. For instance, (DM-M-01) refers to Development Manager – Melbourne – Interview #1. (LS-H-IS) refers to the organization Lawaetz-Stiftung – Hamburg – Information Session.

The desk-based research began with a review of existing research reports and policy recommendation documents. Organizations in England (Brown et al. 2013; Parvin et al. 2011), Ireland (Flynn and O'Donnell 2021d), the Czech Republic (Kopec, Doudova, and Dusek 2015) and Australia (Palmer 2020) have all conducted knowledge exchanges with German Baugruppen sectors and have made their findings publicly available. While the reports target their policy recommendations to the institutional context of each nation, the findings provided valuable information for me to confirm through interviews. I gathered additional information through the web pages of the government agencies, nonprofit organizations, and private firms detailed in section 4, along with the planning documents and web pages of specific building groups. Finally, presentation slide decks proved quite valuable. The slides were from prior Baugruppen information sessions that featured speakers from supporting professions such as planning, architecture and finance, and the host organizations happily shared them with me upon request.

4.0 Structures of Baugruppen provision

This section is the analysis portion of the study. Here I outline the typical steps involved in the Baugruppen development process. Following DiGiulio et al. (2012)[1] I use four phases in the outline: Orientation, Planning, Realization and Occupancy.

As figure 21 and figure 22 indicate, each phase has its barriers. Building groups must overcome initial hurdles in organizing themselves around a shared design concept and budget framework. Interviewees most frequently cited financing as the principal roadblock facing building groups. Financing challenges arise at each development phase. Figure 24 and figure 25 in section 4.1.6 describe the relatively complex financial structure Baugruppen typically employ for projects under owner-occupier and cooperative tenure respectively. Land acquisition also represents a challenge. Through case studies I describe the policies and practices implemented in Berlin, Hamburg and Melbourne that address each of the roadblocks identified. For additional clarity, each case study begins with an executive summary and a flowchart showing how stakeholders assemble during the development process.

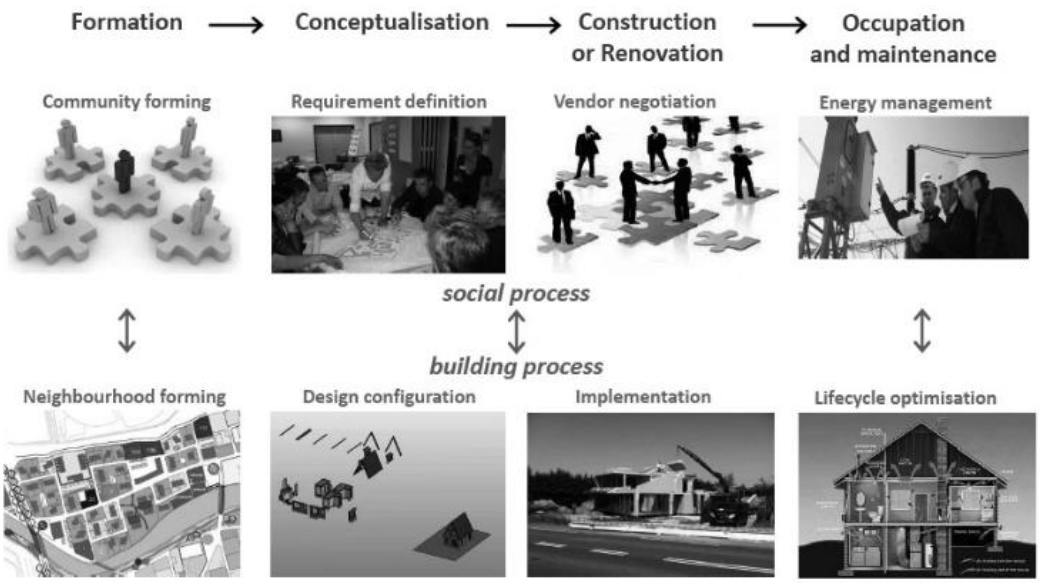


Figure 20. The four phases of collective self-organized development. From DiGiulio et al. (2012).

[1] The report from DiGiulio et al. (2012) aims to clarify development processes for collective self-organized housing so that small to medium size enterprises can enter the sector as contractors and consultants. This idea of establishing an "ecosystem" of service providers for building groups is considered in Section 5.

Figure 21. List of steps across the four phases of group build.

Orientation phase

frequent barrier

- 1. Group formation
- 2. Governance and collaborative concept development
- 3. Develop work plan and communications policy
- 4. Leverage internal and external expertise
- 5. Develop legal structure
- 6. Develop financial structure

Planning phase

- 1. Land acquisition
- 2. Project planning
- 3. Project management tasks
- 4. Financing: land acquisition and pre-development

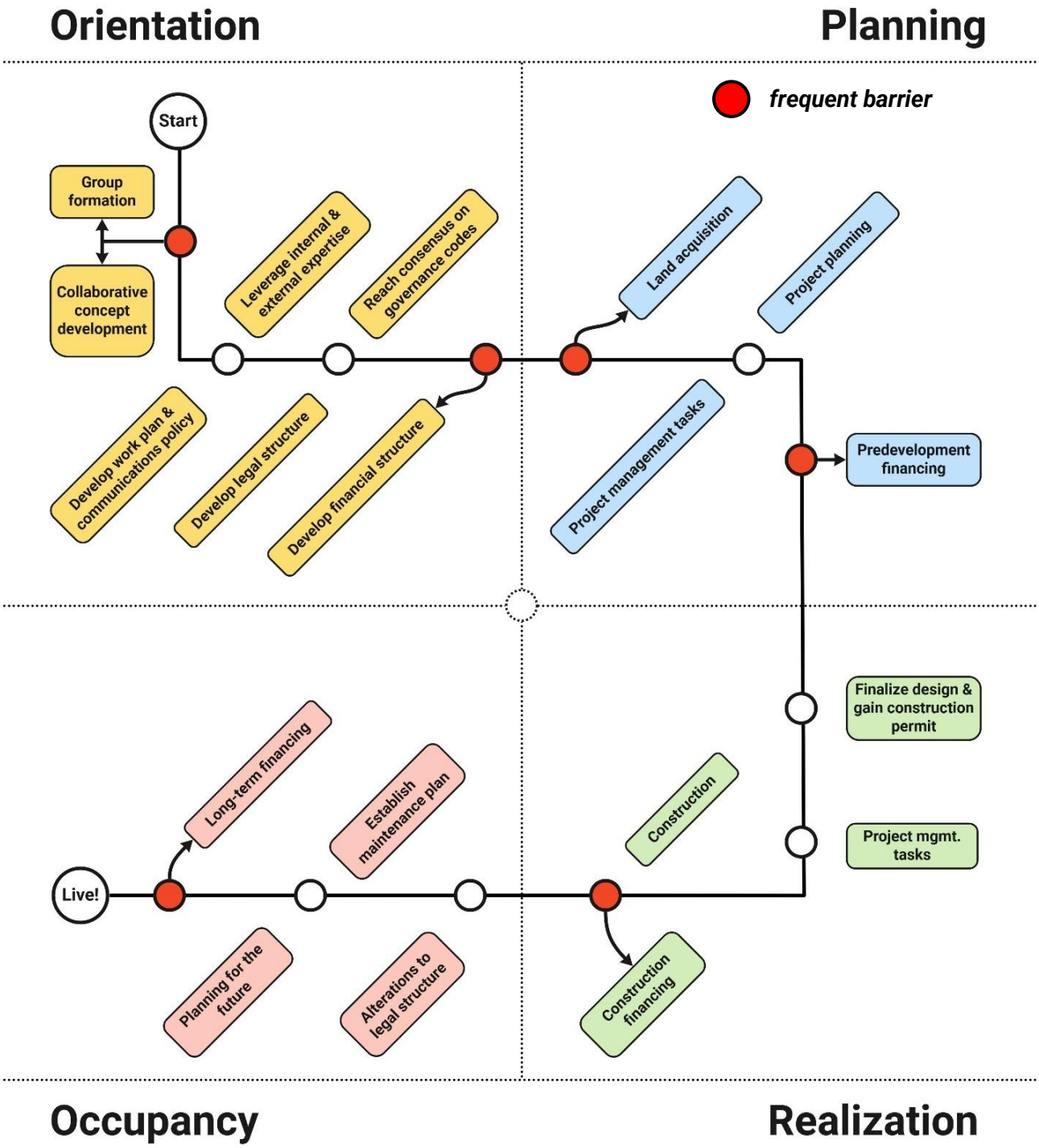
Realization phase

- 1. Finalize design and gain construction permit
- 2. Project management tasks
- 3. Construction
- 4. Construction financing

Occupancy phase

- 1. Alterations to legal structure
- 2. Establish maintenance plan
- 3. Planning for the future
- 4. Long-term financing

Figure 22. Roadmap view of the four phases of group build.



4.1 Orientation phase

4.1.1 Forming the interest group

The initial stage of the group build process is one of the most crucial, and it is no wonder that several of the German-language Baugruppe support guides instruct participants to take as much care in developing a building group as they do with developing the building itself. The creation and realization of a Baugruppe scheme requires intense personal commitments of time, organization, dialogue and capital, and participants must be aware that they are not only engaging in a shared commitment to construct a building together, but also to become neighbors upon completion. For this reason, a vision statement, or some similar outline of the central organizational principles underpinning the group's planning decisions and lifestyle outcomes, is a necessary first step in group formation.

Baugruppen have typically formed along these lines in two ways. A few acquaintances or families—or in rare cases, a single individual—forms a "core group" organically around the notion that the group build method provides the best route to a desired housing outcome, which the vision statement will communicate. As Hamiduddin and Gallent (2016) found through interviews with members of a Cologne, Germany building group, preexisting friendships between participants can act as a primary driver for choosing the group build option and can provide a sustaining force through the development process. The particular Baugruppe they interviewed, *Sülzer Freunde,* formed in a manner that is quite common: a group of tenants within an apartment block becomes close over time, and wishes to maintain their sense of community as they either transition into homeownership or navigate rising rents and displacement.

Professional leadership can also facilitate building group formation. This method has always been common throughout Germany and has been key to the rise of Baugruppen in Australia. Architects are frequently the initiators of group build schemes. They may have a specific design concept in mind, a particular site they wish to build on, or even a desire to customize their own dwelling by leading a Baugruppe. This sort of hybrid arrangement is becoming more popular, as it reduces overall time-on-task for Baugruppe members. Often the core group will assume the bulk of coordination tasks in concert with professional leadership, while remaining members engage only in a decision-making capacity (Schipkowski 2021).

4.1.2 Collaborative concept development

Whether formed professionally or organically from a core group of friends, communication of the concept is key to recruiting additional members and potential sources of investment. A vision statement communicating the group's background and priorities is an initial step towards this. Groups may then expand on the vision by hosting events for prospective members, drafting conceptual sketches of the building, or developing a project website, depending on the skills and resources at its disposal. Desired outcomes often highlighted at this stage include:

- preferred neighborhood(s) in which to build
- amount of common space and commercial space desired (if any)
- definition of affordability, and preliminary calculations for target costs
- desired forms of tenure: proportion of ownership vs. rental units
- environmental and social objectives

Groups without a preexisting plot of land or building design often encounter a particular pinch point at this stage: how many households should be included during the recruitment process? Benefits in economies of scale may be achieved as a building group expands in size, yet a group that is too large risks hamstringing itself during the collaborative decision-making process. There is ultimately no magic number of households for Baugruppen to target, as each group will naturally have a different appetite in this regard. A broad survey of cooperatives, cohousing and Baugruppen projects conducted by the Irish think tank Self-Organised Architecture found that most successful schemes incorporated between 10 – 50 households, but this did not preclude success for projects both smaller and larger in scope (Flynn and O'Donnell 2021b).

4.1.3 Develop work plan and communications policy

As participation in a building group requires a commitment of time and the willingness to collaborate, it's crucial that the group establishes a clear framework early on for member engagement in participatory workshops and administrative meetings. This commitment is not to be taken lightly: in an evaluation of Baugruppen in Landau, Germany, researchers found that projects managed by laypersons required approximately 120 total meetings over the course of development. Professionally-managed projects, by contrast, require closer to 30 meetings over this same timeframe, though groups may meet internally and informally to supplement the scheduled sessions (Landenberger and Gütschow 2019).

In early meetings, groups are encouraged to define a collective decision-making procedure. Certain procedures may be more suitable for certain decisions (e.g., agenda items in financing often require consent, while minor architectural design decisions are made by delegation). Recent groups have leveraged new software platforms such as Slack (for communication) and Loomio (for decision-making) which allow for compartmentalization of correspondence so that participants' emails are not cluttered (Flynn and O'Donnell 2021b). Provided all members are willing to use such software, they can be effective project management tools. Regardless, the group should assign member(s) the task of documenting meeting minutes. Internal reporting proves crucial once additional stakeholders become involved over a multi-year development process.

Figure 23. Common forms of collective decision-making
From Flynn and O'Donnell (2021b)

By consent: all members agree

By democratic process*:* either a percentage majority or a simple majority is required

By delegation: individuals or subcommittees are charged with decision-making in certain fields

4.1.4 Leverage internal and external expertise

A defining feature of the Baugruppen housing model is the ability for participants to define their level of engagement with the planning and realization of their own dwellings. As such, it's important for groups to assess early on the skills they can bring to the project and the potential effect on cost-savings. The core group typically conducts an informal skills audit, which measures not only the type of labor that can be performed internally, but also the availability and willingness of members to devote time and energy toward advancing the project. This skills audit influences further participant selection as well as the scheduling of external consultants to fill gaps in knowledge and skills. White-collar skills are valuable throughout project development, while blue-collar skills are mostly leveraged once construction begins and can carry into post-occupancy through building/grounds maintenance and beautification.

A key action item at this point is for the group to define the architect's scope of work. Architects have in many Baugruppen projects acted as more than designers and construction administrators—indeed, in each of the case cities, architecture firms have emerged as "full-service" facilitators of building groups, assuming the roles of project manager, participatory design leader, group mediator, and consultant coordinator. This structure, not unlike the *fideicomiso* model in Argentina (see section 2.3.1) can leverage the architect's existing relationships with consultants and local planning staff to increase project efficiency. Losses in the group's autonomy over the design may also be offset by gains from the architect's ability to rule out alternatives that would prove too costly or code-noncompliant.

4.1.5 Develop legal structure

At this stage of the orientation phase, building groups engage with counsel to determine their preferred form of legal entity. Whether the group has finalized its membership may influence its selection of legal incorporation. Though it is not always possible to compare the various legal forms available to groups across different nations, there appear to be common frameworks under which Baugruppen incorporate.

The first is a model that establishes a company with limited liability for the duration of the orientation, planning and realization phases. Members typically contribute and hold equal interest in the company's assets and cannot be pursued individually in the event of default. In Germany, this legal form is known as a *Gesellschaft bürgerlichen Rechts* (GbR), or civil law partnership. In Australia, it is a Joint Venture (JV) whereby one "corporate manager" must be designated as the owner of record. In the US this form would most closely resemble a limited liability company (LLC). Groups incorporating under this model eventually transition to either owner-occupier or cooperative tenure after construction completion (see section 4.4.1 for further detail). The second model is a *Genossenschaft (eG)*, which resembles the US cooperative legal structure. Groups intending to self-build a cooperatively-owned project may incorporate initially as an eG and remain as one through occupancy. This model is an especially good fit for groups pursuing funding opportunities conditioned upon limited-equity or affordable housing provision (Tesche and Schambach 2015).

4.1.6 Develop financial structure

First, the group should evaluate the financial situation of its members and establish a preliminary budget with some not-to-exceed cost guidelines. Members then need to make equity contributions. An initial

smaller contribution is necessary to legally incorporate as a joint venture entity and draft an internal group contract. But as the case studies will show, the group will soon need to assemble a larger investment of approximately 20 to 30 percent of total project cost. The inherent riskiness of self-developing a multifamily project makes early financing a roadblock, especially in a current climate of increasing construction costs. Yet in the case cities, rising demand for participation in Baugruppen is working to offset risk, as it's becoming easier to find a replacement household (Fin-B-01). In any event, under a GbR or JV legal partnership the project will not go under should a household default.

Then the group needs to begin organizing finances for the planning phase. Pre-development soft costs are the major line items to fund next, and the group may decide to either use their own capital or apply for a pre-development loan.

Figure 24. Typical financing sequence for Baugruppen under **owner-occupier tenure.**

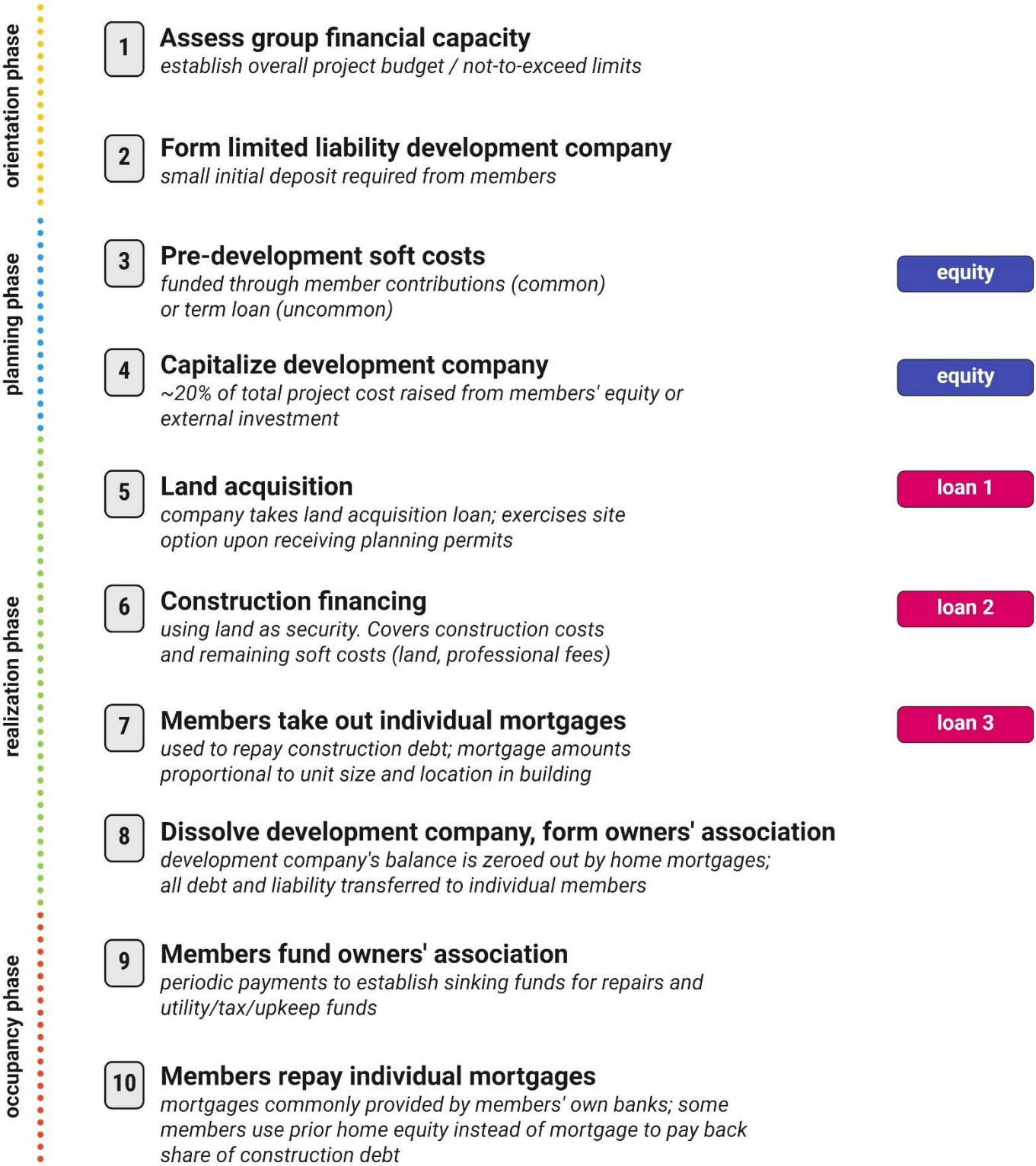
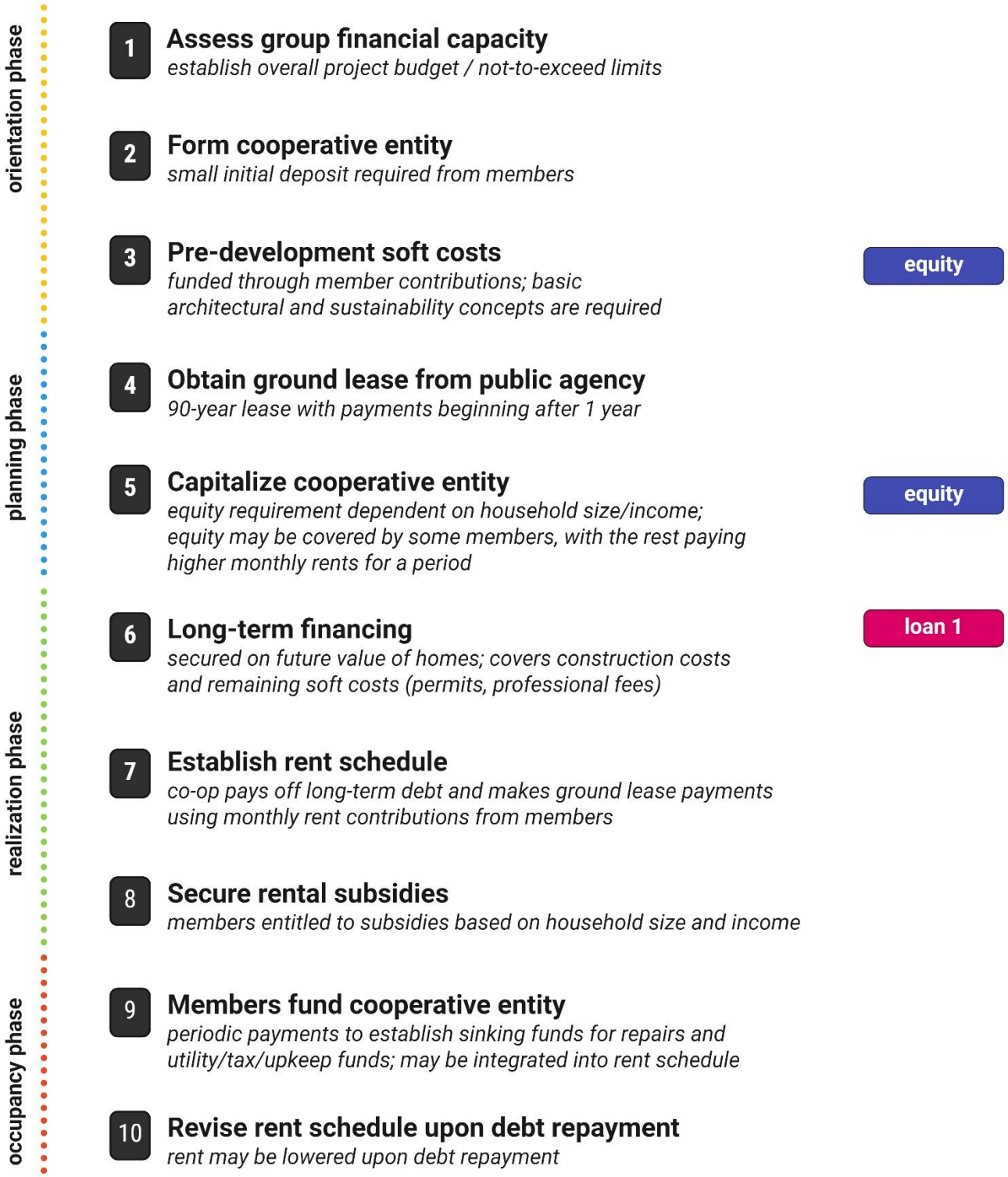


Figure 25. Typical financing sequence for Baugruppen under **cooperative tenure.**



4.2 Planning phase

4.2.1 Land acquisition

The preceding literature review identified land acquisition as one of the major challenges facing building groups. Groups are at a distinct disadvantage in the land market because they need time to recruit additional members and coalesce around a conceptual strategy. Those with a very limited number of participants with sufficient capital may be agile enough to move quickly on a site purchase option. But a central dilemma remains for most groups: although seeking additional membership can increase economies of scale in construction, it also can bring competing views about the project that can take more time to resolve. Meanwhile, the land supply for larger parcels is often lower, and the competition for those parcels is more likely to be multifamily development firms with more capital. Groups may find their residual land value calculations to be noncompetitive when factoring in sustainable or unorthodox elements that are central to their project concept.

Seemann, Jahed, and Lindenmeier (2019) found this held true in a qualitative study of Baugruppen in Freiburg, Germany, where groups became dependent on municipally-held plots with longer purchase options and fixed sale prices. A Freiburg architect felt that a 6-month option to secure land was an absolute minimum requirement; any less did not give building groups the chance to finalize membership and agree on a conceptual design. Landenberger and Gütschow (2019) add that the ability to run development cost estimates detailed enough for members to make binding commitments can only happen if architectural design can proceed while a plot remains reserved.

Many groups prefer a certain neighborhood in which to build due to commutes, schools or nearby amenities. This imposes another constraint on groups relative to speculative development, which can more easily assess the viability of a given development typology in multiple neighborhoods or even cities. And, especially in hot housing markets, available plots may be left vacant or underutilized for a reason. Concerns such as the need for soil remediation or a lack of public infrastructure capacity can sink the feasibility of a project, yet they are not readily apparent to the layperson. This strengthens the argument for building groups to recruit an architect and/or a development manager early in the process to perform due diligence on potential project sites. These stakeholders, whether incorporated as part of the group itself or contracted externally, can assist in the crucial task of aligning the project concept with the site context (or, conversely, discarding sites that would compromise the concept too much) (Landenberger and Gütschow 2019).

Despite these concerns, researchers have identified value for building groups willing to acquire marginal sites that, often because of their shape or inability to accommodate parking, prove infeasible for conventional multifamily developers (Parvin et al. 2011; Flynn and O'Donnell 2021c). There is also potential for development partnerships on larger sites, wherein a volume-builder resells a portion of

acquired land to a building group. The building group operates in the first phase of site development, and their project can be used in marketing efforts to "seed" speculative housing delivery over the remainder of the site (Brown et al. 2013).

4.2.2 Project planning

By this time the core group will likely be holding regular project meetings. Early in the planning phase, these meetings should expand to include the architect, the development manager (if applicable), and any other members who have committed to the project. Once a site is identified, the architect can begin preliminary programming, site layout and yield analysis in accordance with the group's desires. Architecture firm Roedig+Schop, which has designed and facilitated seven Baugruppe projects, approaches the planning phase by holding one group meeting in the current home of each participant. This allows each household to discuss with the architects what is and isn't working in their living situation. After the group has seen each household, the meetings transition to full-day weekend workshops in the architect's office, with sketches and notes pinned up on the wall for an evening review session (Roedig and Schop 2008).

4.2.3 Project management tasks

If a site option is secured and preliminary planning is completed, the group can refine a master project schedule to incorporate the remaining design and construction phases. Stakeholders at a forum held by Irish think tank Self Organised Architecture indicated this was no small hurdle: project management for all forms of collective self-organized development is frequently bottlenecked by difficulties in site acquisition, which alters the project schedule (Flynn and O'Donnell 2021d). While in Berlin and Hamburg there is robust policy for building groups to acquire public land, those elsewhere may have to rely on the agreeability of an existing owner of private property. Location preferences within the group may constrain choices even further.

Nevertheless, project management tasks during the planning phase will include significant coordination with engineers and consultants. The group's architect will likely have known contacts within the relevant trades, but experts noted that the architect's scope varies widely in terms of consultant coordination. Some perform prime consultant duties only in regard to design development—organizing civil, structural, and mechanical engineering subconsultants, for instance—while others manage the additional trades potentially required as part of due diligence, such as construction cost estimators, environmental consultants or surveyors. Requests for proposals and eventual contracts for each of these subconsultants must be drafted, and payments processed.

For groups with layperson knowledge and no architect-as-developer contract, there is a clear role for the external development manager to act as a consultant coordinator. The typical process is for the DM to procure multiple RFPs in each trade, as a developer might, and allow the cooperative entity to select from these. Here the facilitator's prior experience and connections can be valuable; they may offset the tendency for certain professional consultants to upcharge or deprioritize Baugruppen based on perceived project risk (Palmer 2019)

Entitlement permitting is another project management task required at this stage, and the effort required can vary widely across municipalities. Groups working in a jurisdiction without municipal support for Baugruppen permitting may hire an external planning consultant. Palmer (2019) found that in Australia—where relatively little municipal support exists—building groups engaged with all consultants earlier in the process than speculative developers did, and the early integration of a planning consultant was especially advantageous.

4.2.4 Project financing during planning phase

Early financing of soft costs with the pool of group members' own capital can become especially difficult if group membership is not complete by the planning phase. As engineering and architectural consultants begin invoicing to the project, the group can get into a situation where "five must pay for eleven," and wait for capital to be replenished as membership fills out. One interviewee expressed mild frustration at having to accumulate additional payments from fellow group members to cover soft costs, but noted that demand for joining the project was very high, and membership could essentially be filled at any time, were the group's standards for entry relaxed (Res-B-01).

The next financing hurdle is to raise funds for land acquisition. As the case studies will show, high costs for land can be mitigated to a certain extent. Though even if acquisition payments are deferred to the end of the planning phase by way of a site option, this stage still represents a roadblock, as group membership becomes solidified and budgets become fixed. Soliciting social impact investment is especially useful at this stage. If the group has developed an innovative, sustainable concept, SII may be leveraged on the front end to aid in securing debt financing on the back end (Arch-US-01).

4.3 Realization phase

4.3.1 Finalize design and gain construction permit

The threshold between the planning and realization phases can be a soft one, as timelines for securing building permits (and thus beginning construction) can vary widely depending on the quality of the drawing set and local authorities' plan review processes. Here we will assume that once the Baugruppe has reached joint consensus on the architectural design and costs, the planning phase gives way to realization. It should be noted that some projects proceed to construction with low levels of finish planned for individual dwelling units. While common areas, exterior materials, circulation and building systems need to be finalized, households often elect to self-finish certain elements of their dwelling after construction as a cost-saving measure. Employing such an incremental approach ensures for some members that they can remain in the project by stretching out required investments. It can also lower barriers to individual mortgage financing, which are discussed further in the Occupancy phase.

Once groups reach the realization phase of their projects, the process begins to more closely resemble traditional residential project delivery. The architect and engineers, who by this time will have already begun developing the drawing set for permitting, may investigate and propose to the group any final cost-saving measures before submittal.

4.3.2 Project management tasks

Roles of most group members typically recede when the group reaches a design consensus and builds a financial framework. The development manager, the architect, and often one or two designated representatives from the group jointly manage the finalization of permit documents and the building construction. Weekly or bi-weekly group meetings usually give way to monthly meetings at this stage (Kopec, Doudova, and Dusek 2015). For the working group, "…the scope for decision-making in this late phase is narrow, and the priority at this phase is not to jeopardize the progress of the project." (Landenberger and Gütschow 2019, 300). Because residents are invested emotionally and financially by this phase, there is less wiggle room for the construction working group to a) modify project objectives, and b) extend the construction timeline past the agreed-upon schedule. Most of this effort falls on the development manager, who must efficiently manage consultant and contractor scopes of work to ensure alignment and sequencing between trades.

The development manager also oversees the purchasing or leasing of property. Some building groups may already have property title by this point, especially if developing on a site owned by a group member. Most groups, however, must exercise their site option to purchase or lease upon receiving entitlement permits from the local authority. As the prior section shows, groups developing on publicly-held plots have a window of about one year to gain planning permission and financing before they must begin making

lease payments to the government. Architect-led projects in which the architecture firm proactively secures the site option follow a similar path, but more frequently involve the group entity purchasing the land outright from a private landowner (LS-H-IS).

4.3.3 Construction

Only a few differences exist in construction procurement of group build and developer-driven projects. The development manager is responsible for shopping the drawing set to contractors for tenders and comparing tenders against the agreed-upon cost target. This process may take longer for group builds. Meetings with the architect are often necessary to review options for aligning the group's standards with tenders received, and groups may come into conflict when high tenders force a choice between revising their standards or paying more.

This is one of several events that justifies a building group's investment in an external development manager. The value of neutral influence is key in getting self-interested parties to make these important decisions relatively quickly. Plus, development managers bring existing relationships with contractors and provide a familiar point-of-contact. Without them, contractors may balk at having to deal with a multi-headed clientele, and have in Germany been known to deprioritize or upcharge for the extra effort.

The other major difference lies in the coordination of individual responsibilities among group members. Sweat equity contributions are in play as potential cost-reducing mechanisms, but appetites may differ. Not every group retains a development manager throughout the construction process; in some projects, the architect assumes the sole leadership position in construction administration. Berlin architects Roedig and Schöp (2008) detail a participatory construction process that leverages blue- and white-collar sweat equity to deliver high-quality communal features at lower construction costs. Each household takes responsibility for supervising one subcontractor trade through construction, then the group jointly performs some non-structural, non-MEP tasks such as laying flooring and garden hardscaping. Though this approach is less common, it provides a good example of the varied learning experiences available to households in group building, as well as an instance where DIY construction and urban multifamily living are not mutually exclusive.

4.3.4 Construction financing

Securing a construction loan represents the next major financing hurdle for building groups. Despite the potential for reduced construction costs using innovative materials and methods (see section 2.5) and sweat equity, groups still must convince financial institutions to lend on what is commonly perceived as a risky development typology. While in Germany the collective self-organized development sector has an established track record of success, lending institutions in other Western European nations and Australia have been slower to embrace the model. Understanding and addressing their concerns will be a key step towards establishing group build projects as viable housing alternatives.

Sharam, Bryant, and Alves (2015) interviewed ten Australian residential development financiers to assess their perception of risk as it pertains to CSO housing. Overall, larger lending institutions expressed more concern over project failure, while smaller, member-owned institutions expressed greater

willingness to consider cooperatively-developed projects with objectives that align with their mission. There was consensus among all lenders on six key barriers to construction financing (figure 26).

Figure 26. Roadblocks in financing construction of collective self-organized housing projects
Adaptation by author of qualitative data in Sharam, Bryant, and Alves (2015)

R1) Demonstration of credibility
Lenders want a point-of-contact with experience in project management and building delivery

R2) Loan security
Deliberative developers may not have enough assets to use as collateral, and lenders do not want the negative publicity of evicting a family from a home put up as collateral

R3) Equity
Groups must raise between 25-40% of development costs in equity, which is a strain on middle-income households, especially those without existing property

R4) Presales
Although no presales are necessary in group build projects, lenders indicated they would consider group members as similarly risky to presales

R5) Profitability
Although a developer profit margin is not part of group build projects, lenders wanted assurance that the project would return a 20 percent profit margin if its units were hypothetically sold in the market

R6) Loan-to-value ratio
An LVR of 65 percent was considered appropriate for group build projects, contingent on “market acceptance”. As with R5, this indicates that dwelling units need to have relatively broad appeal, potentially limiting design innovation

4.4 Occupancy phase

4.4.1 Alterations to legal structure

Building groups most often incorporate as a cooperative entity for the first three development phases: in Germany, it is a civil law partnership (GbR); in Australia, a joint venture (JV). Once construction is completed and occupancy begins, the group may assume a different legal form that subdivides the single title in the company's name into individual titles for each household under an **owner-occupier tenure.** Joint ownership of common areas is retained, and liability for owners remains restricted to each individual share. Shares in this association become proportional rather than remaining equal at this point: there may be a range of unit sizes or levels of finish upon completion that would correspond to differing price points for the units. In Germany the most common legal form for Baugruppen at this stage is the *Wohnnungseigentümergemeinschaft* (WEG), or homeowners' association (AfB-H-IS). In Australia an Owners Association is formed (PC-M-IS). Both are similar to the form of condominium ownership in the United States.

Baugruppen may choose to remain in a **cooperative tenure** through occupancy. In Germany the GbR entity used through construction is dissolved and a *Genossenschaft* (eG) is formed. These cooperatives are typically governed by a constitution, and decisions are made democratically by members. The project remains the property of the cooperative entity, with each member investing equity in shares of the entity and essentially renting their units from the entity. This form can work better for groups who seek to lead a more communal lifestyle through shared spaces and programming.[2] It can also provide greater latitude in controlling future membership through the selling and purchasing of shares according to predetermined rules (AfB-H-IS). The Hamburg case study shows how government has achieved social housing targets through cooperatively-owned Baugruppe projects.

4.4.2 Establish maintenance plan

Many Baugruppe projects include some amount of shared amenity spaces, like gardens, roof decks, guest suites, or even commercial kitchens. By this phase groups must establish responsibilities for ongoing maintenance of the commons. These are most often worked into the new legal contract that takes effect upon construction completion. It is also common among larger building groups to establish a system for members to periodically reserve these spaces, not unlike contemporary condominium or student housing developments. In establishing maintenance schedules and responsibilities, groups must audit their capacity for self-maintenance and jointly determine which services to contract externally. To take one example in Berlin, the Leuchtturm Genossenschaft ("Lighthouse Cooperative"; see figure 2) holds bi-

[2] Under cooperative ownership the line between Baugruppen and the American conception of cohousing can be blurry: generally, the distinction is better understood here in terms of Baugruppen being self-developed, while a cohousing project can incorporate a developer to build a project that then becomes cooperatively-owned. Shared amenity spaces are common in both models but not an integral feature of Baugruppe projects.

weekly standing meetings and has created small working groups of households for specific tasks related to building maintenance and operations (Christopherson and Zeeb 2015).

4.4.3 Planning for the future

By the occupancy phase, external support from the development manager, the architect and local authorities is usually phased out and replaced with participatory governance by the building group (AfB-H-01). In planning to operate and live in a building together, groups must reach agreement on a few key items. Coordinating all self-finished project elements is an especially important one. As section 4.3.1 shows, group members frequently arrange to finish their own dwellings incrementally as a cost-saving measure, and some groups utilize this strategy to plan future improvements to common areas (Res-B-01). This work needs to be coordinated with all households in advance so that the project does not remain an ongoing construction site.

Groups must also develop a policy for members to sell or lease their dwelling units and a process for integrating future households into the building. The chosen tenure (cooperative vs. owner-occupier) and conditional funding for rental subsidies can each influence resale restrictions. Many permutations of resale policies exist on a spectrum from laissez-faire open market sales to tight restrictions on when a dwelling may be resold and what proportion of equity gains the household is entitled to. The same goes for incorporating new membership down the road: since Baugruppe projects differ widely with respect to common space provision, core groups may vary in their attitudes toward requiring vetting of future owners or renters. Ideally, though, the core group of households will have already reached a consensus strategy when forming its membership; by this phase it's more a matter of putting things in writing as the final legal contract is adopted. Additional considerations at this stage may include scheduling internal meetings to revisit maintenance and membership agendas, as well as events to celebrate construction completion and establish social ties within the neighborhood (Res-B-01).

4.4.4 Long-term financing

Financial considerations in the occupancy phase revolve mainly around building maintenance and loan repayment. The project's shared bank account—used previously to fund development soft costs—should be replenished with members' cash contributions to cover utility and tax payments and costs for upkeep. Similar to condominium or cooperative associations, a sinking fund for larger building repairs is necessary, too; this typically requires contributions of between 0.5 – 1 percent of property price per annum and can be integrated with or remain separate to the first fund (Kopec, Doudova, and Dusek 2015). Typically the development manager and a nominated *Geschaftsführer* (business manager) from the group retain control of the common account through construction. Once occupancy begins the development manager is removed and other households may step in to assist with accounting. Whatever the structure, transparency is an absolute necessity, and most building groups employ collaborative spreadsheet software and periodic newsletters to keep all members updated.

Households must also begin repayment on their share of project debt during this stage. The holder of construction debt is the limited-liability GbR or JV entity. Under **owner-occupier tenure,** when this entity

is dissolved upon construction completion, households purchase their dwellings individually from the entity. Unless they have cash to purchase the dwelling outright, each household will take out an individual mortgage from their own lender, using their share in the newly-constructed building as security. By this time the size of each household's dwelling unit and its location within the building is defined, so the correct share for each household may be determined. Household mortgages are then pooled to repay the construction debt along with any other debt taken on, such as a land acquisition loan.

Under **cooperative tenure** long-term financing is slightly different: since the cooperative entity retains ownership of the building, it repays construction debt over a long-term period by pooling monthly "rent" payments from households. These rent payments cover households' proportional share in the building plus a surcharge that goes toward the common utility and maintenance fund. One advantage of cooperative tenure Baugruppen is the ability for wealthier residents to cross-subsidize other group members, in what is known as a *solidarity funding* model. In the case of Spreefeld, in Berlin, more well-off households contributed extra equity upfront to secure a favorable interest rate. Those who could not contribute as much upfront were instead allowed to pay slightly higher rents to the cooperative, in order to make up the difference over time (Flynn and O'Donnell 2021a).

Berlin
case study 1

Executive summary

Architects assume a preeminent role in generating Baugruppe projects in this heated property market. They leverage robust online networking infrastructure to oversee building group formation. Projects typically feature high levels of social and environmental sustainability.

Professionalization

Experts agreed that the increasing difficulty of land acquisition in Berlin has influenced a professionalization of the group building process. A heated property market has fostered high land prices and has greatly increased competition for building plots throughout the city. It has also reduced the ability for building groups to locate in core districts and to incorporate their preferred amount of common space within their designs (Fin-B-01). As planner-turned-development manager Ulf Maaßen put it in a Deutschlandfunk radio interview, "…the original group builders were five friends or seven families getting together and looking for a plot. These projects now fail on a regular basis: there aren't any plots to be had, and the quarrels are unending. Today you need professional support." (Maaßen, in Christopherson and Zeeb 2015). The line between the orientation and planning phase for many projects has blurred as an **architect-led structure of provision** has become increasingly popular. A state-sponsored nonprofit agency has emerged to guide Baugruppe projects through the orientation phase, but their support diminishes once groups progress past formation and concept development.

Government involvement

The Berlin Senate leases publicly-owned building plots to Baugruppen under a competitive tendering procedure. The ability for building groups to proceed into the planning phase with site control relieves

some groups from the need to organize quickly to compete with developers on the open market. But these plots are in high demand, and the associated design competitions for securing plots have become capital-intensive.

Aside from this policy, government involvement in Berlin's Baugruppen sector is not as comprehensive as what is seen in Hamburg. Berlin architects have instead assumed a preeminent role in generating new projects. Many conduct internal feasibility studies on parcels and acquire rights to purchase them prior to receiving commitment from interested households. Architects then leverage Berlin's advanced networking infrastructure, the *CoHousing Berlin* online platform, to market their design and fill out remaining group membership. This business model has produced highly sustainable design outcomes and has improved cost efficiency for the future residents, who sacrifice a nominal amount of design control upfront but often retain the ability to customize their own dwellings (Arch-US-01; Fin-B-01).

New developments in Berlin

At the time of writing, the State of Berlin is proposing to leverage Baugruppen in plans for redevelopment of the former Tegel Airport. This private-public partnership will create a technology-focused research park for 20,000 employees and a residential quarter with 5,000 dwellings. The master plan calls for 40 percent of new dwellings to be developed by building groups, under low-energy, car-free, and water-sensitive design criteria with timber construction (Döll 2022; Fin-B-01) The use of Baugruppen in sustainable urban renewal projects has become an established planning strategy in the German cities of Freiburg, Tübingen and Hamburg already; refer to the Hamburg case study and section 5 for more information.

What can U.S. planners and policymakers take from Berlin's sector?

- Adaptive reuse as an entry point for Baugruppen. Through the 1990s, the Berlin government provided financial support and planning consultation to building groups who sought to convert old tenement blocks into sustainable communities. This way of "starting small" worked to seed knowledge and support infrastructures between local architects and planners (Droste 2015). Adaptive reuse under the Baugruppen framework continues today with conversions of schools, breweries and other industrial buildings.

- Clearinghouses for knowledge exchange. The Berlin Senate funds a networking and support center, *Netzwerkagentur GenerationWohnen* (Network Agency for Cross-Generational Living), which is a central point for knowledge exchange. There, cross-generational building groups form, gain access to project consultation and contractors, and take precedent from completed projects. This resource, along with the CoHousing Berlin platform for all other building groups,

has been instrumental in new project initiation. U.S. planners may determine whether similar clearinghouses could be established within city websites or buildings, or whether to support local nonprofit organizations with their formation.

- High levels of architectural innovation. Many of Berlin's Baugruppe projects have shown high levels of innovation in sustainable design and social concepts. The Senate's competitive land tendering procedure fosters some of these: land is not allocated to the highest bidder but leased to Baugruppen on the basis of fixed sustainability criteria. And the relatively high visibility of new projects in this global city—coupled with sufficient demand among residents—creates a viable route for Berlin architects to build their own brand through Baugruppen. Architects also contribute capital to projects and integrate flats or studio space for themselves (Arch-US-01; WLA-B-IS).

Orientation phase

- 1. Group formation
- 2. Governance and collaborative concept development
- 3. Develop work plan and communications policy
- 4. Leverage internal and external expertise
- 5. Develop legal structure
- 6. Develop financial structure

Nonprofit-led facilitation

Group formation: *Netzwerkagentur GenerationWohnen* (Network Agency for Cross-Generational Living), is a nonprofit advising center created in 2008 by the Berlin Senate to support all forms of collective self-organized housing that feature an intergenerational living concept. The agency is open for free appointments by videoconference, email or in-person. Additionally, it holds "Friday Café" events in which interested individuals may receive and share information about current and proposed group build projects. These are primarily networking events.

The agency functions as both a networking hub for new project generation and an information repository of completed Baugruppen projects. It conducted in 2011 a survey of projects to gather quantitative data on building group demographics, building specifications and cooperative legal arrangements, along with qualitative, experiential accounts of successes and failures within the group build process. The resulting case studies go a long way toward showing interested parties the varying possibilities in group formation. Alternative living arrangements such as women-only cooperatives, car-free site design, and significant shared facilities all work to spark ideas among interested parties. One constant among nearly all cases, however, is the relatively large share of children: the data show they make up approximately one-third of Baugruppe residents in nearly all cases surveyed. The benefits of close neighborly relationships and cross-generational settings have helped young parents perceive Baugruppen as positive environments in which to raise children (Tesche and Schambach 2015).

Governance and collaborative concept development: As intergenerational groups develop, they may participate in agency-sponsored roundtables, as well as site visits to existing Baugruppen projects, to further refine concepts for their project design and living strategy. Once groups have formed, the agency continues its role as an important third-party: it provides mediation between group members, and acts as an intermediary on behalf of the group in negotiations with private building industry firms and property owners. The nonprofit also provides free consulting in matters of architectural design, cost-effectiveness, and judicial/business proceedings.

Notably, the case studies help instill confidence in realizing large-scale and high-density projects under the Baugruppe process: multiple cases follow a core group of several households (sometimes with

expertise in project management or design) conceptualizing an initial scheme and subsequently recruiting significant additional membership on the strength of their concept. Densities within the range of 18-25 dwelling units are common among the cases (see Tesche and Schambach 2015).

Develop financial structure: *Netzwerkagentur GenerationenWohnen* advises groups on financing but does not directly provide any financing or subsidy. Members of the Berlin government have organized presentations in partnership with the nonprofit advising center to inform building group participants about available subsidies and lender connections for their projects.

Architect-led structure of provision

Group formation: Before *Netzwerkagentur GenerationenWohnen* emerged as a central contact point in Berlin, group formation occurred in a variety of ways. A 2009 survey of 150 Berlin Baugruppen households indicated that 38 percent partnered with friends or acquaintances and a further 16% were group initiators themselves. Neighborhood walks, newspapers, Internet correspondence and information stands/flyers each accounted for approximately 10 percent of group formations (Suckow 2009).

Cohousing Berlin, a participatory Internet platform developed and maintained by the nonprofit Institute for Creative Sustainability, is a go-to resource for Baugruppe formation today. The platform lists Baugruppen projects in all stages of development (see figure 29 for examples). Typical entries include

- a core group in the orientation phase, who communicates their design concept to solicit additional participants
- a group that has secured land and/or an architectural design, and requires additional membership to help the project pencil out
- public land listings to be awarded to Baugruppen via a competitive process
- completed Baugruppen projects that serve as precedents for new groups' conceptual idea formation. These listings may be modified if units become available.

The CoHousing Berlin platform has helped private architects assume a preeminent role in forming building groups in Berlin (Fin-B-01). Under this **architect-led structure of provision** an architecture firm performs the work of preliminary feasibility—typically including location analyses, building and site programming, and arranging a working group of consultants—without having yet secured a clientele. Then the architecture firm, not the joint venture entity of group members, secures an option to purchase land and prepares a project exposé.[3] Through some combination of information sessions and online listings of

[3] Project "exposés" or brochures have become a fairly typical deliverable in early project development. They could be compared to a real estate feasibility study that a development firm would produce to solicit debt and equity finance. The architect drafts the exposé after agreeing on a housing typology and preliminary floor layouts with the group, then fills in graphical representations of the broader planning context and some preliminary cost calculations per household. The result is a living document that allows each household to see their design and estimated cost relative to other households in the group, ensuring transparency and limiting future disputes.

the exposé, the architect markets the scheme to potential building group members as a ready-made alternative to beginning from the ground up (Arch-US-01; Fin-B-01).

Governance and collaborative concept development: Concerns about the loss of group autonomy under an architect-led model were largely dismissed by experts. One noted that the oft-cited savings of 20 to 30 percent over market rate housing was more consistently achieved, outweighing any losses in early participation (Christopherson and Zeeb 2015). Another commented that a fully participatory design process actually isn't suitable for many Baugruppen clientele who work full-time professional jobs and may be raising children. Rather, a "sweet spot" of participation should be targeted, where group members do feel involved in the overall decision-making process yet are not expected to pore over every decision (Fin-B-01). Again, a dwindling supply of available building plots in Berlin means that location choice is already constrained, which eliminates one of the main arguments for full group autonomy from project conception. And since a good portion of those sites will have already been deemed a no-go by speculative developers, because of irregular shape or square footage, the architect is in a better position to assess feasibility and target density before she is beholden to a building group of a certain size.

Architect-led projects still frequently incorporate concepts of social and environmental sustainability. One Baugruppen participant who joined under this structure said the architect had initially proposed certain objectives in social mixing and environmental efficiency when recruiting membership. Once a core group formed, they revised the project priorities before finalizing the internal contract:

> We have worked priorities into the contract. Our first priority is ecological. The second is that [the building] should fit in with, and bring something to, the area. Now we have to think about what's behind these priorities in the planning stage. For instance, we would like to generate our own energy via solar and draw our heating from the ground. (Res-B-01)

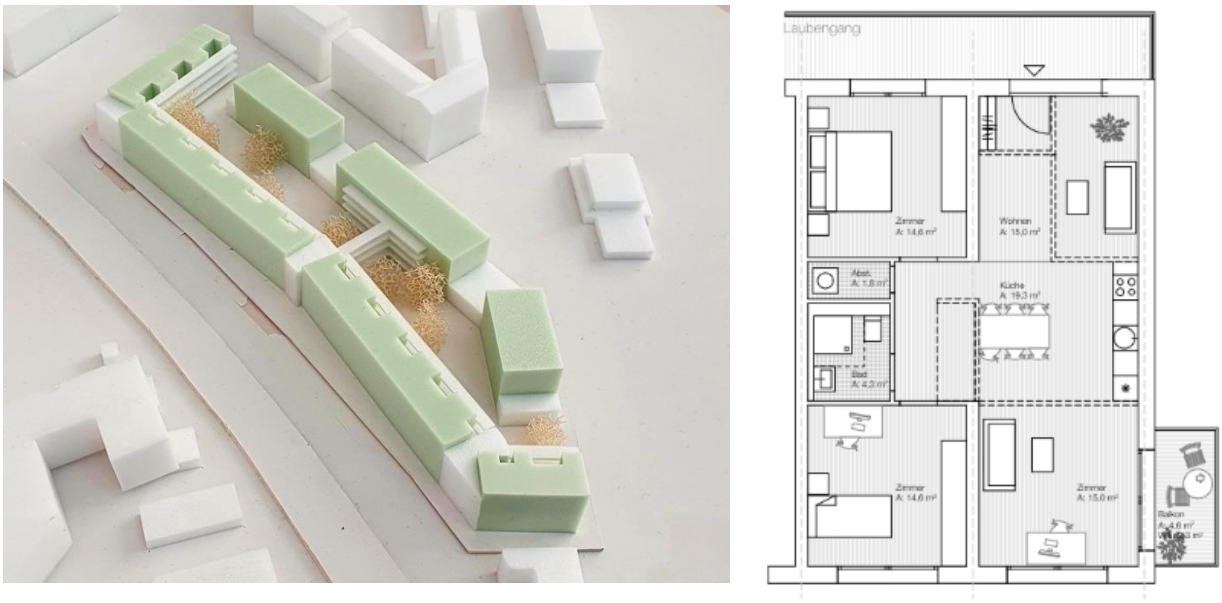


Figure 27. Site model and floor plan from project exposé of the Tannenstein Baugruppe, Berlin. Exposé by Adorable Immobilien; design by ARGE WaTa Architekten.

Develop financial structure: Under the architect-led model, potential group members will have access to the project exposé, which contains a breakdown of available dwelling units in the building and a target unit sale price. These parameters are usually developed by the architect to a basic level and are subject to refinement once a core group is formed. What is fairly standard, however, is the initial equity requirement of about 20 percent of the target sale price. Although prices can differ considerably based on dwelling size and location in the building, unequal equity investments among members rarely result in unequal voting power during group decision making (Res-B-01).

During the orientation phase, the major hurdle is capitalizing the Baugruppe cooperative entity through individual households' equity investments. The Berlin Senate in 2019 introduced a new package of subsidies aimed at low- to mid-income rental housing and cooperative housing, due in large part to ongoing privatization of social housing stock (Böttcher 2020).

Projects that remain in the *Genossenschaft* (cooperative entity) legal form post-construction, as opposed to transitioning to individual unit ownership, can access an interest-free loan for 10 percent of total project cost as an equity supplement. Conditions placed upon this loan include (1) that the project would be infeasible without this supplement, based on the group's pooled capital, and (2) that 30 percent of dwelling units are reserved for rent-stabilized affordable housing, for which the Senate provides further subsidy (Böttcher 2020). The second requirement, while stringent, does open up new possibilities for affordable housing provision through cooperatively-owned Baugruppe projects. And, according to experts interviewed, any mechanism that reduces the initial equity hurdle is likely to generate more uptake in new Baugruppen projects (AfB-H-01; DM-M-01; Prof-M-01; Arch-US-02).

Figure 28.
Typical stakeholder assembly,
architect-led structure of provision

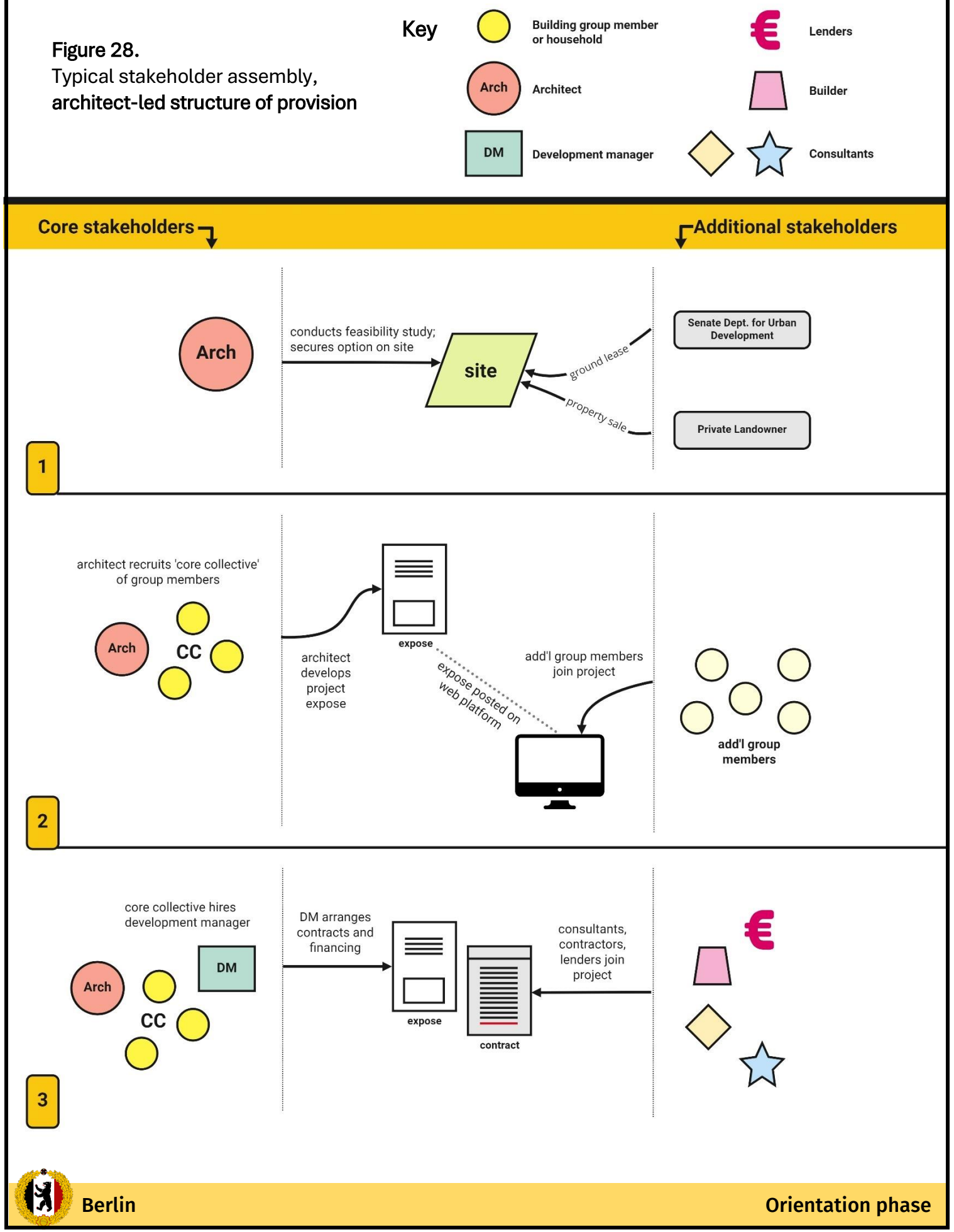


Figure 29. Three typical listings from the CoHousing Berlin platform: a Baugruppe project that has secured membership and begun construction (top), a group with land and a permitted design soliciting additional membership (middle), and, at bottom, a group with only a preliminary concept and desired neighborhood searching for Mitstreiter (comrades-in-arms).

Details

Baugemeinschaft jacobsohn-4-zehn

21. Jan 2020
24. Jan 2019

Die Baugemeinschaft jacobsohn-4-zehn GbR hat das Grundstück in der **Jacobsohnstraße 14** in **Weißensee** 2019 erworben und mit der Realisierung von insg. **11 Wohnungen** zwischen 36 m² - 163 m² begonnen.

More WE ARE NOT CURRENTLY LOOKING FOR COHOUSING PROJECT PARTIPIPANTS

Details

BG Kirch 63

20. Jan 2022
17. Sep 2021

Grünes Wohnen in Pankow-Rosenthal

Das Grundstück wurde bereits gekauft und die Baugenehmigung liegt vor: In der Kirchstr. 63 entsteht auf einem schönen Grundstück in ruhiger grüner Lage eine kleine Baugemeinschaft mit sieben Wohnungen, von denen die DG-Wohnungen schon vergeben sind. Im EG und 1.OG sind fünf Wohnungen mit vier - fünf Zimmern geplant, alle mit großen Terrassen oder Balkonen und im EG auch mit kleinem Garten.

More WE ARE STILL SEARCHING COHOUSING PROJECT PARTICIPANTS

Co

Details

BG Stadtvilla Pankow-Süd

07. Sep 2021
07. Sep 2021

Mitstreiter für neues Baugruppenprojekt für einen Neubau einer freistehenden Stadtvilla in Pankow-Süd gesucht!

In zentraler und ruhiger Pankower-Süd Lage nahe U-Bahnhof Vinetastraße und unweit der Schönhauser Allee suchen wir Mitstreiter für ein neues Baugruppenprojekt:

More WE ARE STILL SEARCHING COHOUSING PROJECT PARTICIPANTS

Planning phase

1. Land acquisition
2. Project planning
3. Project management tasks
4. Financing: land acquisition and pre-development

Land acquisition: The Berlin Senate implemented in 2013 a policy of *Transparenten Liegenschaftspolitik* (transparent land management). This policy notes the heightened competition for available building plots between projects "...aimed at the common good" versus those developed speculatively with corporate investment. High land prices in the city-state reflect the prevalence of recent luxury condominium sales. (BIM) To address this, the policy authorizes Berliner Immobilienmanagement (BIM), the public agency responsible for managing state-owned land, to allocate property to cooperatives, including Baugruppen, according to criteria outlined in the *Konzeptverfahren* (social value concept procedure). The policy establishes a competitive bidding process under which sites are individually made available and public notice is given when each site competition opens. As figure 30 shows, competitive bids are made not on monetary terms but on qualities of social value, which extend to ecological and architectural considerations.

What is particularly noteworthy about the social value concept procedure is that it's not standardized across the city-state but tailored to each project's context. When state-owned land is offered for allocation, a steering committee consisting of public officials in finance, urban development, housing, business, and district representatives is formed. The steering committee jointly determines the weights of the broad assessment criteria for each project. The committee holds neighborhood workshops to verify the criteria with existing residents for sites in historically or culturally sensitive areas. After it evaluates the proposals, the building group with the highest social value score is awarded a 90-year leasehold contract for the property. Planning staff then provide free consultation to guide the group through the permitting process (Flynn and O'Donnell 2021c).

The social value concept procedure is an inclusionary approach that answers the call from Parvin et al. (2011) for governments to prioritize the use value of housing over the exchange value. Yet not all providers of non-market housing see it as good policy. Development manager Maaßen commented that the competitive procedure placed unreasonable expectations on groups early in the design stages:

> One only begins design development in detail when one is relatively sure of getting site control of a property. But when eighty groups apply for the same property and they all have to do this procedure, with a complete architectural design, well-thought-out social and ecological ideas, and how to finance them, that's an unbelievable amount of effort that freelancers and families must undertake, and it's really an unreasonable demand.
>
> -Ulf Maaßen, development manager
> Transcript from radio interview by Christopherson and Zeeb (2015); translated by author.

Another professional involved with group formation and mediation shared the concern about the competition's demands, but clarified that her groups typically compete against eight to ten other competition entries, most of which are submitted by architecture firms (Fin-B-01). Neither facilitator discounts the social and ecological outcomes produced under state *Konzeptverfahren* policy, but they consider it more of a numbers game: as federal land is still allocated to the highest bidder, private land is becoming prohibitively expensive, while city-state land not allocated for Baugruppen is given over to municipal housing associations, who efficiently construct social housing to address the supply shortage. Soon there won't be any room left in central Berlin for more Baugruppen to innovate. When forced to purchase land on the market, many groups prioritize common space over location, seeking an area outside of central quarters to allow for feasibility of communal gardens or ground floors (Fin-B-01).

Finance: Groups usually transfer accounting responsibilities to a development manager during the planning phase. Interviewees agreed that the task of coordinating consultant invoices with group finances was the most important job for the development manager (with meeting scheduling ranking second). In projects without a development manager—again, less common nowadays—a nominated *Geschäftsführer* (managing director) of the group often takes on the accounting role (Res-B-01).

High land prices and construction costs in Berlin have seen groups leverage investor support to make projects pencil out. An interviewee commented that nearly every

Figure 30. Social value assessment criteria for allocation of state-owned land.
From website of Berliner Immobilienmanagement GmbH

Category Architectural concept, urban design and contribution to public space
Criteria* Architectural quality, urban and spatial quality, noise protection, neighborhood integration

Ecological concept
Transport and mobility, energy-efficiency, climate concept, ecological building materials and methods

Building use
Social housing provision, rent levels, security of tenure, affordable construction, concepts for social inclusion, orientation to community, integration of art or cultural groups

Ground rent at location
Used to offset the lease payment burden for certain groups seeking to build on high-value land (max 10% weight)

** criteria weights vary according to steering committee and community preferences*

Baugruppe she knows of is advertising one to three dwelling units as *Kapitalanlagen* (capital investments) to be purchased by an external party and rented out. Since communal activities are frequently optional, Baugruppen enjoy an advantage over cohousing in the feasibility of incorporating rental units (Fin-B-01). In any case, the effect of unknown renters on interpersonal dynamics was said to be minimal; in one project discussed, investors agreed to involve the group in tenant selection (Res-B-01).

Realization phase

1. Finalize design and gain construction permit
2. Project management tasks
3. Construction
4. Construction financing

Construction financing: Due in large part to an established track record of successful project delivery in Berlin, building groups have multiple sources for construction financing. Lenders' knowledge of the Baugruppen model does not necessarily eliminate the financing roadblocks, however. Banks require a demonstration of credibility by stipulating that groups retain both an architect and a development manager on the project to secure financing (Fin-B-01). Regarding loan security and equity, a building group member currently engaged in financing his group's project noted that by the time construction lending comes up, banks need to see the full membership of the project and the total financial capacity of involved households. The primary question banks asked of his group was in regard to existing home equity among the membership. Perhaps unsurprisingly, the group member commented that young families in Berlin who are looking to be first-time homeowners in a Baugruppe project are finding it especially difficult to access mortgage financing (Res-B-01).

Both interviewees associated with the Berlin Baugruppen sector said there are three banks willing to lend to Baugruppen. The first, *Umweltbank*, is a lender with an ethos of sustainability. The bank evaluates Baugruppe proposals according to predetermined ecological and social criteria and assigns one of three credit rating classes based on the sustainability of the concept. This "environmental rating" is used jointly with financial creditworthiness to determine the construction loan interest rate. At the time of writing, the terms seemed favorable: for highest-rated proposals, a fixed-rate loan at under 2 percent interest was available to building groups (Umweltbank 2022). *GLS-Bank* is another sustainably-minded lender that provides financial and advisory services to building groups. It offers fixed-rate loans with interest rates determined by the strength of the sustainability concept, though GLS determines rates according to KfW energy-efficiency standards rather than a holistic sustainability metric (GLS-Bank 2022). Anecdotally, a Berlin financial consultant to Baugruppen commented that *Umweltbank* has been more likely to finance projects with strong ecological concepts, whereas GLS prefers concepts featuring affordability and social mixing (Fin-B-01).

Both *Umweltbank* and GLS are institutions founded on ethics of sustainable development, and both have embraced support of Baugruppen as a model in particularly sharp alignment with their missions. Yet one traditional commercial bank, DSL, is now extending construction financing opportunities to building groups with a surcharge attached (AfB-H-01). This is a promising development in Berlin in terms of increasing uptake of the Baugruppen model. Despite the long-term savings residents enjoy through sustainable construction, not all groups may be able to weather the higher construction costs it can often

entail, no matter the loan terms. As a precedent, this may also bode well for Baugruppen uptake in U.S. regions not served by niche lending institutions.

Another promising development is the recent reinstitution of energy-efficiency subsidies from the *Kreditanstalt für Wiederaufbau* (KfW) federal development bank. After this funding stream was exhausted in January 2022, it was replenished with €1 billion the next month (GLS-Bank 2022). As figure 14 shows, one of the most common organizing principles among Berlin Baugruppen is an energy-efficiency target that can leverage a KfW subsidy, and for good reason: buildings designed to KfW energy standards receive a federal construction loan between €120,000 - €150,000, and a grant of 15 – 25% of the loan amount to aid in repayment (KfW 2022). For Baugruppen intending to incorporate under **owner-occupier tenure,** the energy-efficiency subsidy may be stacked on top of a KfW construction loan for €100,000 at 2.05% interest. Clearly, building groups in Germany have no shortage of lending options as the Baugruppen sector has matured. The ability to shop around, and to combine federal KfW funding with low-interest bank loans, is a testament to the model's success in realizing sustainable urban development (Arch-US-02).

Occupancy phase

1. Alterations to legal structure
2. Establish maintenance plan
3. Planning for the future
4. Long-term financing

Long-term financing: A review of the CoHousing Berlin platform for recently completed and in-progress Baugruppe projects indicates that a majority (61 percent) of building groups have adopted or plan to adopt the WEG (homeowners' association) form of **owner-occupier tenure** upon construction completion, as opposed to Genossenschaft, or **cooperative tenure**. Households under the WEG legal structure need to repay their share of project debt with their own capital or via a home mortgage against their dwelling.

Suckow's (2009) survey of Baugruppe households in Berlin provides a look into long-term financing decisions and capabilities. Of 131 households that disclosed the percentage of their equity contribution towards financing their dwelling, the average contribution was just under 45 percent equity. The mode of the distribution (the most frequent financing strategy) was to put 30 percent down on a home mortgage. Though the survey was 13 years ago, it reveals a couple of trends that still hold true today, according to those interviewed. The high end of the distribution in figure 31 (71 – 100 percent) suggests households may be leveraging equity from their prior home to pay cash for their Baugruppe dwelling. The financial consultant to Baugruppen in Berlin indicated this was a common strategy especially for (1) senior households seeking to downsize, and (2) younger households, often expecting children, seeking to upgrade from their first home purchase (Fin-B-01). A development manager in Melbourne observed the same trends (DM-M-01). Equity contributions from the parents of young Baugruppe households seem to be increasing in frequency, the financial consultant noted, but clarified that as Berlin's market has gotten tighter, millennial households have been forced to rely on family money to participate in group build projects. Millennial workers in the IT sector, however, are generally able to meet mortgage lending criteria on the strength of their incomes alone, and have recently flocked to Baugruppe projects as first-time buyers (Fin-B-01).

Since a mortgage with less than 20 percent down is rarely obtainable in Germany, the low end of the distribution (0 – 10 percent) may suggest the trend of some WEG owner-occupied projects incorporating a small percentage of rental or rent-to-own units within their building. The integration of rental tenure has implications for increased accessibility of the Baugruppen model, especially for households unable to meet the steep equity requirements for securing multiple loans across the four phases of provision. Strategies vary for incorporating rental units. Some groups split the additional unit cost between them and reserve the units as guest suites for visiting family and friends. Households may also use their Baugruppe flat as a second home and rent it out seasonally (WLA-B-IS). Or, as discussed previously, the

group may rely on equity from external investors, who purchase dwellings upfront from the group entity and rent them out. Generally, the high architectural quality of Baugruppe projects helps attract such investment. All three strategies have become common in Berlin today (Fin-B-01).

In owner-occupied projects, families with children and single parents have access to an additional subsidy. Germany's development bank KfW provides a grant *(Baukindergeld)* of €12,000 per child to parents acquiring homeownership. Like KfW's other subsidies—energy-efficiency grants and construction loans for homeownership, upon which this grant can be stacked—this funding stream is available to building groups throughout Germany (KfW 2022).

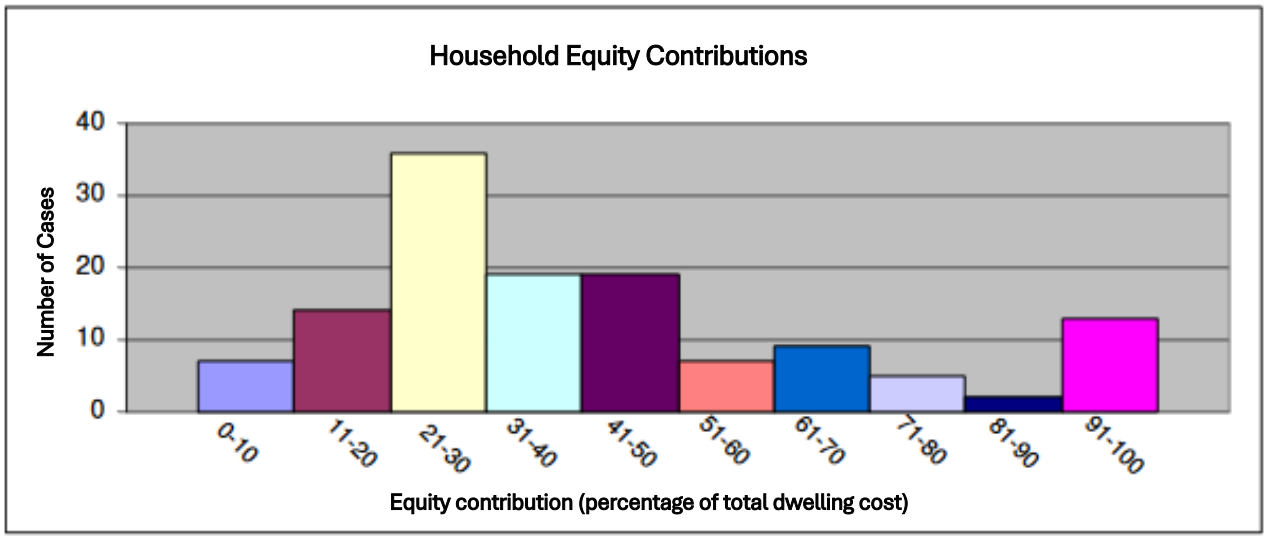


Figure 31. Households' equity contributions as a percentage of total dwelling cost.
Data and chart from Suckow (2009) translated by author.

Hamburg
case study 2

Executive summary

A high level of stakeholder coordination, combined with dedicated governmental support to building groups, allows Hamburg to leverage Baugruppen to meet objectives in affordable, sustainable urban development.

Centralized coordination

Of the three case cities, Hamburg provides Baugruppen with the greatest amount of governmental support. Growing public interest in Baugruppen throughout the 1990s led to lobbying efforts by Baugruppe architects for a centralized, "one-stop shop" for coordination. In 2003, a conservative government established the *Agentur für Baugemeinschaften* (Agency for Building Communities) with the special purpose of supporting building groups through consultation and allocation of publicly-held land. Through a competitive land tendering procedure similar to the one administered by the Berlin Senate, Hamburg's Agency effectively prioritizes groups with strong concepts in social and environmental sustainability. Stuttgart is the only other city in Germany with a government agency dedicated to supporting collective self-organized housing development (AfB-H-01; AfB-H-IS).

The Agency for Building Communities performs three key tasks that illustrate the advantages of centralized support:

- Coordinating with the Ministry of Urban Development and Housing to establish land allocation quotas for Baugruppen
- Establishing connections with smaller community and regional banks, who rely on the Agency's vetting of building groups for due diligence

- Partnering with nonprofit affordable housing foundations, who provide development management services for building groups

Baugruppen as an urban planning tool

Hamburg specifically deploys Baugruppen to meet comprehensive planning objectives. The city expects to add 100,000 residents by 2030 and lacks affordable housing to accommodate this growth. Through private-public partnerships, Hamburg is facilitating urban redevelopment at brownfield industrial sites and peripheral urban districts, and it is leasing a set percentage of publicly-owned, serviced building plots in these areas to Baugruppen (Dept. of Urban Development and the Environment 2014).

As a tool for "seeding" community in new urban quarters, results have been mixed. More centrally-located redevelopment sites, such as Wilhelmsburg, have attracted high demand from creatives and migrants, creating social mix in the area along with gentrification. New quarters on the urban periphery, such as Oberbillwerder, have seen low demand among Baugruppen at present (AfB-H-01).

Competitive land tendering policy ensures that Baugruppen fulfill comprehensive planning goals in sustainable urban development. From a sustainability perspective—including not only environmental but social and economic aims—Baugruppen have consistently shown success. They are responsible for the first Passivhaus building, the first car-free multifamily building, and the first timber-structure tall building in Hamburg (AfB-H-01).

The city has addressed a decline in direct governmental housing provision by subsidizing cooperatively-owned Baugruppen, which act as permanently affordable social housing. The Agency coordinates with city planners to determine district-by-district affordable housing needs—along with any other planning objectives, like car-free or barrier-free design—then works these needs into its selection criteria for awarding plots to building groups. Hamburg's municipal bank then provides construction subsidies and ongoing rental subsidies for low-income households in Baugruppe cooperatives (AfB-H-01).

What can U.S. planners and policymakers take from Hamburg's sector?

- Centralized support can facilitate affordability. Hamburg's land tendering policy is designed to be "low-level," and is not contingent on an advanced architectural design submission. The Agency wants to include groups such as seniors and migrants in projects, and instead prioritizes in-person interviews with potential participants (AfB-H-01). The entitlement permitting support provided by the Agency is a further measure of cost reduction, along with the availability of rental subsidies.

- Integration of nonprofit organizations. Nonprofits in Hamburg provide development management services for building groups. This is a crucial role to be filled in the U.S. by professionals with

expertise in advancing projects through construction *and* mediating between households. U.S. planners may conduct outreach to nonprofit developers or affordable housing organizations to gauge interest in similar consulting roles.

- **Stakeholder coordination and knowledge exchange.** The Agency plays an active role in advancing the Baugruppen sector. It hosts quarterly stakeholder roundtables with the nonprofit development managers, the Ministry of Urban Development and the Environment, the public land bank and the development corporations (who engage in the private-public partnerships that facilitate urban redevelopment projects). These are key to informing banks of current practices and issues for Baugruppen (AfB-H-01). Additionally, the Agency hosts monthly information sessions for the public—both online and in-person—to inform about new project opportunities and field questions or concerns. Even if U.S. city governments do not replicate Hamburg's advanced support infrastructure, roles in education, marketing and outreach seem feasible.

Figure 32. Proposed mixed-use district with 20 percent of building plots reserved for Baugruppen. From Masterplan Oberbillwerder (IBA Hamburg GmbH 2019); visualization by ADEPT ApS and Karres+Brands.

Figure 33. Development site for the new mixed-use district at Oberbillwerder. From *Masterplan Oberbillwerder* (IBA Hamburg GmbH 2019).

Orientation phase

1. Group formation
2. Governance and collaborative concept development
3. Develop work plan and communications policy
4. Leverage internal and external expertise
5. Develop legal structure
6. Develop financial structure

Group formation: Individuals seeking to participate in a Baugruppe may begin on the Agency's website, which contains a step-by-step process of navigating the orientation phase of a project and leveraging municipal support. The website features a *Kontaktbörse* (contact exchange), a map-based tool akin to Zillow or AirBNB where users can post current projects to solicit additional membership or indicate they are seeking to form a Baugruppe within a certain area of the city (figure 34).

The Agency does not assist directly with group formation by sorting members into groups based on interests. Building groups must connect and form by themselves, but when a group has at least three participating households, it becomes eligible to register with the Agency. Registration is required if the group seeks to engage in the city land allocation process for Baugruppen. Once registered, a group will conduct an initial meeting with Agency staff; here, the Agency outlines their role as a central point of contact for the group as it acquires a building plot, financing, and entitlement permitting. Groups are advised to hire an external *Baubetreuer (m.) / Baubetreuerin (f.)*, or development manager, and an architect, if members do not already possess these skills. Hamburg has conditioned building group registration (and, by extension, the ability to acquire a building plot from the city) on the group having identified a development manager and architect that they will commission (AfB-H-IS).

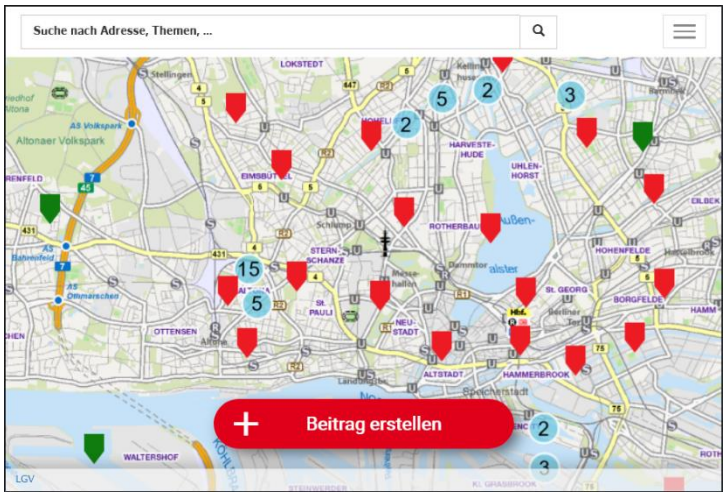


Figure 34. Hamburg's Kontaktbörse, administered by the Agentur für Baugemeinschaften. Red flags indicate users seeking to start a Baugruppe in a certain area, while green flags indicate projects underway that are seeking additional membership.

The municipal agency holds monthly information sessions that introduce attendants to the Baugruppen development process and outline the role of governmental support at each stage. Broadly speaking, the

Agency's major role in Baugruppen support occurs in the areas of group formation, land allocation, and connecting groups to financing and other government branches for entitlement permitting (AfB-H-01). Further project-specific support to building groups comes from the architect and the development manager (LS-H-IS).

Governance and collaborative concept development: In outlining the collaborative process, it's important to clarify the role of the development manager, as it may be misleading in an English context. The role of this position is very pertinent to the orientation phase, as it involves the facilitation of resident-groups through the development process, not management of the building itself. It is a project management role that functions as an intermediary between the building group members and the various public- and private-sector stakeholders involved in real estate development. As such, development managers have the capacity to assist the building group through each step of the orientation phase outlined above. They draw on prior experience to advise the group on which legal form to incorporate and provide early advice on the design concept so that the group may calibrate its personal equity contribution. They may also act as a moderator between group members by providing assistance with conflict resolution and drafting an internal group contract (Behrens et al. 2019).

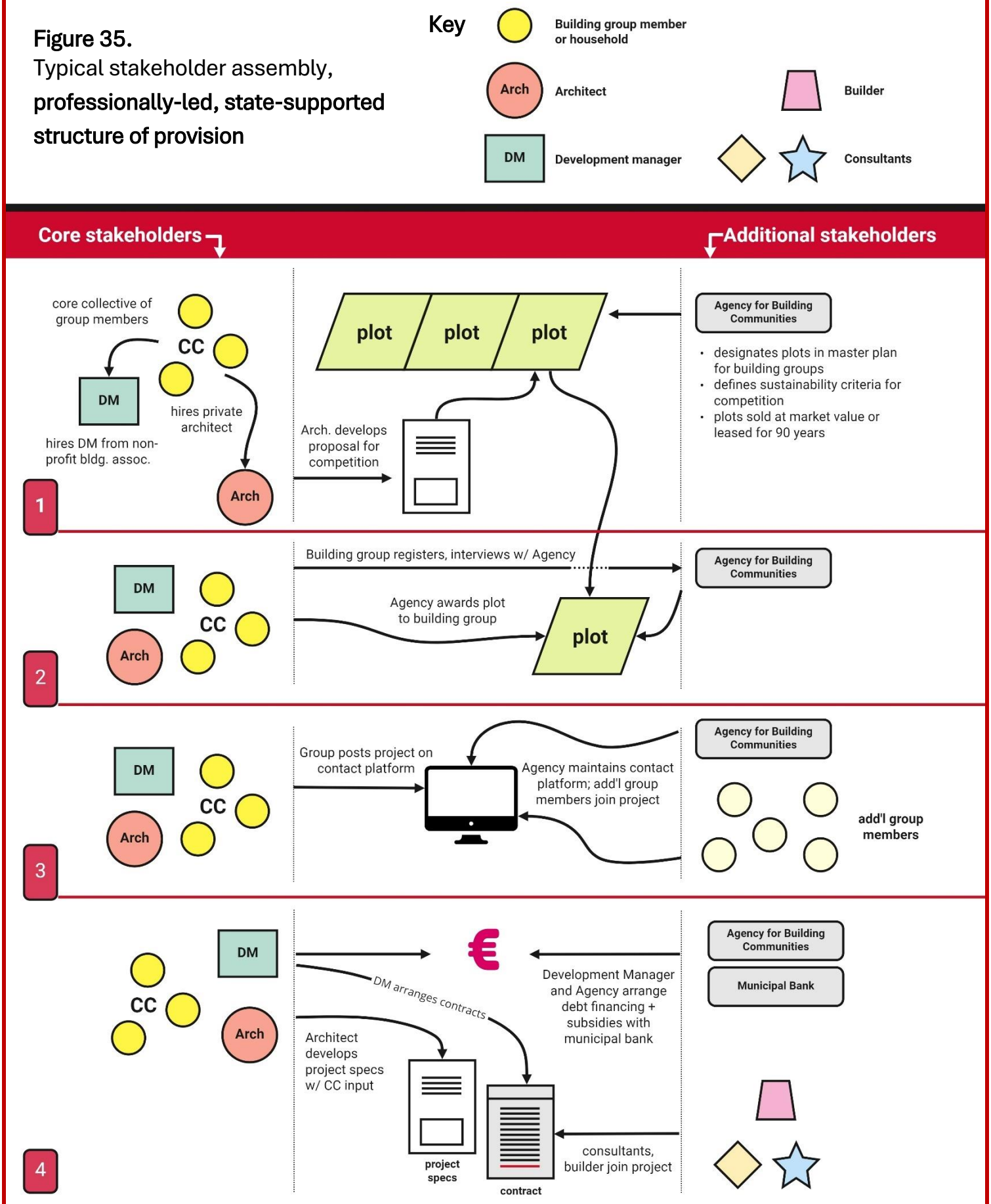
The Hamburg Agency has partnered primarily with two nonprofit organizations that provide facilitation services for Baugruppen. One organization, Lawaetz-Stiftung, was founded by the Hamburg city government in 1986 with the mission of mediating between the administrative bureaucracy and low- to mid-income citizens affected by government policies and programs. Baugruppen facilitation is one service among many the organization provides. It has a self-described approach of advancing ecologically sustainable and family-friendly design concepts so that a Baugruppe may leverage subsidies granted by the Hamburg Agency . Though Lawaetz-Stiftung is engaged in other advocacy work for low-income residents, its focus with Baugruppen is in support for owner-occupied projects mainly comprised of middle-income earners (LS-H-IS). The organization is aware that gentrification can be a byproduct of this support, but stresses at the same time the importance of self-building as a pioneering contribution to the sustainable future of housing (Scheller and Thörn 2018). The other main facilitator is Stattbau Hamburg, which formed from a coalition of radical tenant and youth associations in 1985. It originally provided support to squatters and low-income tenant groups for preserving and renovating affordable housing. Today its focus remains on affordability for Baugruppen, primarily assisting groups with limited resources in forming small cooperatives or integrating into larger cooperatives (Scheller and Thörn 2018; AfB-H-01).

These nonprofits provided crucial early advocacy and support for group building as it gained increasing prominence through the turn of the century. In Hamburg, two additional midsize private firms have begun to operate in development management. Hamburg Agency staff commented that high demand for these services is currently contributing to a bottleneck in Baugruppen development, and it has been a discussion point within government to generate more options for building groups in this realm (AfB-H-01).

As in Berlin, some architecture firms in Hamburg do provide an integrated service where the planning, design, permitting and project management are all carried out in a participatory fashion, with the architect as the chief point-of-contact in all areas. Since this structure of architect-led provision is less common in Hamburg, it is not discussed under this case study, but the process unfolds in a similar manner to the Berlin case.

Develop financial structure: At the orientation stage, financing is also similar to the Berlin case. The desired legal structure (eG: cooperative vs. WEG: condominium) can determine available funding sources, as cooperative Baugruppen very often fulfill a role in Hamburg's subsidized affordable housing provision. Groups intending to incorporate as a condominium entity upon construction completion still face the initial hurdle of capitalizing their project with approximately 20 percent of total project cost. As a result, condominium projects are almost exclusively a middle- to upper-middle-class endeavor in Hamburg, while cooperative projects have incorporated greater diversity and social mixing of late. Moderate-income participants are also the most active in forming core groups during the orientation phase, typically recruiting lower-income households once a funding stream for subsidies is secured (AfB-H-01).

Figure 35.
Typical stakeholder assembly,
professionally-led, state-supported structure of provision



Planning phase

1. Land acquisition
2. Project planning
3. Project management tasks
4. Financing: land acquisition and pre-development

Land acquisition: Like the Berlin government, Hamburg's Agency for Building Communities oversees competition-based public land allocation based on the strength of a Baugruppe concept. The Agency periodically tenders available building plots along with a set of fixed and transparent criteria by which building group entries will be judged. As in Berlin, competition winners receive the rights to a long-term ground lease of the parcel. The winning building group may exercise a 1-year site option before the ground lease begins to raise further capital, develop the design and secure entitlements (AfB-H-IS).

Differences between Hamburg and Berlin: The Hamburg Agency's competition process differs from that of Berlin in two key ways. First, while Hamburg does assemble a steering committee of local authorities and community representatives to *judge* entries, the initial criteria are set exclusively by the Agency in each competition for a parcel. The benefit of centralized criteria-making is that the Agency can better adhere to comprehensive planning objectives for the district in question. One recent competition, for instance, favored car-free Baugruppen proposals because they aligned with a long-term objective in the comprehensive plan to transition an entire district into a car-free zone. Second, the Hamburg Agency specifically delineates that proposals will be judged on the strength of the concept, not the architectural design. Groups scoring highly in the competition must proceed to interview with the steering committee rather than submit a preliminary design package. According to Agency staff this policy increases land accessibility from a socioeconomic perspective, especially for building groups featuring seniors and/or migrants (AfB-H-01).

Once the winning building group is awarded a building plot, the 1-year site option period is meant to encompass the entirety of their planning phase. The development manager is required to make periodic reports to the Agency that show how the competition criteria are being fulfilled, and Hamburg planners return with design review feedback. Altogether, entitlement permitting for most Baugruppe projects takes six months; a result of recent efforts to streamline the process on the municipal side. This relatively short timeline is helped along by the Agency's requirement that groups must commission an architect and development manager prior to the start of the planning phase (AfB-H-01). A Hamburg development manager stressed the importance of drafting *Handlungsrahmen* (framework plans) for the group early in the planning phase. This document informs groups of the Hamburg planning context, determining where in the city their project is feasible based on prior permit records and current tenders of available plots (LS-H-IS).

Financing: land acquisition and pre-development: Time is money during the planning phase, even though groups are not yet required to make lease payments on land. The Hamburg Agency has shown a willingness to advise on financial matters. The role of Agency staff as neutral observers to project teams

proves valuable in interrogating the financial basis of group decisions, by working as a counterweight against the emotional investment of members (AfB-H-01). The Agency feels it's getting a good return from this effort.

> Baugemeinschaften need a little more support with project planning, but they ideally only have to go through it once. The building groups are investing their money and livelihood into a Hamburg urban quarter. This means they are interested in developing quickly and efficiently. From the city's side, this attitude toward development should be prioritized over practices of speculation and land banking—where high lumber prices, for instance, may delay a project by months.
>
> Staff member, Hamburg Agentur für Baugemeinschaften (AfB-H-01)

Figure 36. Criteria for public land allocation
From competition for building plots at Mesterkamp Baufeld.
Criteria developed by Hamburg Agentur für Baugemeinschaften; translated by author.

Category (weight) **Group and partners (25%)**
Criteria Stability, member engagement, collaboration, innovation

Planning, construction and environment (15%)
Submission of architectural precedents, barrier-free design (for wheelchair accessibility), structural and spatial efficiency

Cooperative financing (30%)
Financial feasibility, proof of member's own capital, subsidized unit provision

Energy, Ecology and Mobility (15%)
Energy-efficiency targets, building materiality, bicycle parking provision

Special considerations (15%)
Social/cultural diversity and inclusion, innovative communal concepts

Realization phase

1. Finalize design and gain construction permit
2. Project management tasks
3. Construction
4. Construction financing

Construction financing: Typically the group's development manager will coordinate with Agency staff to secure a construction lender for the project and leverage any available subsidies. Building groups in Hamburg also have access to the three German banks financing in Berlin (Umweltbank, GLS-Bank and DSL), and may receive federal energy-efficiency grants and homeownership loans from KfW. But a few additional funding streams have opened up as a result of more direct government involvement in Baugruppen provision. Regional *Sparkassen* (community savings banks) have established ties with Hamburg's Agency for Building Communities to facilitate construction lending for Baugruppen that incorporate under **owner-occupier tenure**. Agency staff stressed the importance of their public-facing, neutral role in creating this relationship. The *Sparkassen* are able to obtain high-level information about success trends in Hamburg projects, and, because building groups register their concept with the Agency, the community banks have the government as an additional resource during customer due diligence (AfB-H-01).

Hamburg's municipal bank provides funding to Baugruppen that incorporate under a **cooperative tenure** and provide subsidized affordable units. Most often this takes the form of 2% interest construction loans, with additional grants tacked on for energy-efficient construction and socioeconomic mixing of residents. Once again, the ability to combine this funding with federal KfW subsidies makes high-quality, sustainable construction in Hamburg increasingly feasible for social housing. But if subsidies are not combined, cooperatives may apply to the municipal bank for a separate grant of between €13,500 -15,000 per dwelling unit if the building hits prescribed energy efficiency targets (IFB Hamburg 2022).

Greater government involvement in Baugruppen provision has helped coordinate affordable housing planning in the city-state. It has also allowed for an increasing amount of Hamburg's affordable housing quotas to be filled by cooperatively-owned Baugruppe projects. When the Agency releases land tenders for competition, it can coordinate with Hamburg planners to determine the need for subsidized units in the area, and subsequently work this into the selection criteria to ensure the winning project addresses that need. While it was noted that this stringent public-sector coordination between the Agency, planners and the IFB bank placed a heavy workload on Agency staff (AfB-H-01), the greater picture is one of successful affordable housing provision and income-mixing gained by leveraging private cooperatives—an especially valuable project when placed against trends of declining funding and long wait lists for traditional social housing.

Occupancy phase

1. Alterations to legal structure
2. Establish maintenance plan
3. Planning for the future
4. Long-term financing

Once groups reach the occupancy phase, support from the state *Agentur für Baugemeinschaften* drops off. Agency involvement with Baugruppen living in their building is mostly limited to occasional site visits with researchers and policymakers, as well as judging projects that enter into an annual competition in Baugemeinschaften innovation (AfB-H-01). The development manager's ongoing involvement with groups depends on the terms of the contract, but it is rare for groups to retain external project management or mediation support after moving into the building. Investment in development manager support through the first three phases tends to build up natural processes of mediation and participatory governance, such that by the occupancy phase most building groups become self-sustaining (Landenberger and Gütschow 2019).

Long-term financing: The options differ in Hamburg based on the chosen form of tenure. While cooperative projects remain more integrated into the city-state's subsidy streams—as this model has become a planning tool for affordable housing provision—projects under **owner-occupier tenure** generally consist of middle-class households who secure a private mortgage from the lender of their choice (AfB-H-01). The Agency's networking with regional *Sparkassen* has aided in establishing a roster of Baugruppen mortgage lenders. Households generally work with these community banks during planning and construction to establish qualifications; once the building is completed it acts as security for the home loan.

For projects under **cooperative tenure,** the partnership between the state Agency and the state bank (IFB) has enabled a public funding stream originally designated for social housing to be partially redirected towards Baugruppe subsidization. An increasingly common strategy for Baugruppe cooperatives, especially larger ones of 30-50 dwellings, is for a percentage of households to self-finance their share in the cooperative via existing home equity or a share loan. The idea is to demonstrate enough financial capacity among the membership to secure a ground lease from the Agency and favorable terms for development finance. The remaining dwelling units in the project then act as income-restricted affordable housing. Households occupying these units are eligible to receive subsidies from IFB to cover the gap between a designated percentage of their income and their monthly rent payment to the cooperative entity. This strategy—although influenced by the Agency's selection criteria for awarding plots to groups—has been utilized frequently in Hamburg's urban renewal projects of late, to the point where finding and recruiting low-income households has actually become difficult (AfB-H-01).

Melbourne
case study 3

Executive summary

Two initiatives, led by private sector professionals, adapt the Baugruppen model to create low- to medium-density urban infill. Projects are ownership-based with high design quality, and have attracted significant demand.

Private sector initiative

Relatively little centralized support for building groups exists in Melbourne, yet industry professionals and community members are taking the initiative to advance non-market multi-unit development projects in this currently nascent sector. Much like in the German cases, group formation processes include self-formed groups and groups led by architects or development industry professionals. Self-formed groups to date have engaged primarily in delivering cohousing and eco-village projects in the greater Melbourne area, while two professional-led initiatives more closely resemble the Baugruppen structure of provision.

- The first is an **advisor-led structure of provision,** under which a private firm offers a preexisting legal and financial structure to households that participate in joint venture development projects. The firm, Property Collectives, is a Melbourne-based group of development managers and advisors with prior experience across real estate, finance and design disciplines. The advisory firm acts as development manager for households from the orientation phase through realization of the building. Households assume risk and primary design control of the project (Property Collectives 2022).

- The second is an **architect-led structure of provision,** under which an architect gains licensure from a not-for-profit development entity to draft a preliminary building design that follows sustainable social, ecological and financial principles. The not-for-profit entity, Nightingale

Housing, then solicits future residents and outside equity investment for the development. The architect and investors assume risk, and the architect retains primary design control of the project (Nightingale Housing 2022a).

Affordability

Both the advisor-led and architect-led structures seek to deliver dwellings that participants purchase "at cost" rather than at market-rate. Projects under both models require no budget allocation for display suites or marketing, and there is no traditional developer seeking a profit margin. The **advisor-led structure** targets a 15% savings for future owners compared to a market purchase. The advisory firm has found a niche in doing urban townhomes; they are developed under a joint venture legal entity that transitions to individual household ownership upon construction completion (PC-M-IS).

Steep equity contributions required of group members influence who can participate: for instance, a $1 million townhome (with a market value of $1.15 million) would require approximately 30 percent, or $300,000, in equity contributions over the development timeline for the future owner. Most participants to date have been single-family homeowners seeking to downsize or upgrade from their first home purchase (DM-M-01).

The **architect-led structure** is governed by a not-for-profit entity that secures equity investment. Future homeowners are responsible for an initial deposit of 10 percent of dwelling cost, and then must self-finance their dwelling via a mortgage or own capital. The multifamily designs typically include a range of unit sizes at varying price points, and all tend to come in below-market-rate. This structure is more accessible for first-time homebuyers and requires less commitment of all group members' time and resources over the project duration. But demand is currently outstripping supply, and there is a long wait list to participate. The not-for-profit typically reserves a share of units in each building for low-income residents with rental subsidies, and an additional share for essential workers (NH-M-IS).

Land acquisition has been a greater challenge for the architect-led structure. With more emphasis on affordable homeownership in mixed-use buildings, the architect needs larger, appropriately-zoned urban sites. The budget flexibility and townhome typology of the advisor-led structure allows for greater choice when acquiring land. Taking advantage of Melbourne's medium-density "General Residential" zoning designation, advisor-led groups often elect to replace existing single-family homes on large urban lots in the neighborhood of their choice (DM-M-01).

Sustainability

The advisor-led and architect-led structures have each delivered projects under sustainable design frameworks. Both typically site projects in centrally-located Melbourne neighborhoods with high walkability, and both place premiums on efficient building orientation and site layout. Group members heavily influence the design concept in the advisor-led structure; as such, they have generally centered the importance of the building's lifecycle costs. By targeting longevity through the use of high-quality building materials, the future owner-occupiers make upfront investments in energy efficiency and long-

term property value. Recent advisor-led projects currently in the design stages are targeting high environmental performance ratings, which have generated interest from Australian banks (PC-M-IS).

Among other sustainability objectives, high energy-efficiency targets, carsharing, and carbon-neutral operations are baked into the architect-led structure of provision. Designs typically include shared rooftop gardens, laundry rooms and ground floor commercial space to encourage social interaction (Nightingale Housing 2022a). The not-for-profit entity overseeing the projects has been able to generate equity investment from socially-conscious financiers on the basis of these principles (NH-M-IS).

What can U.S. planners and policymakers take from Melbourne's sector?

If Berlin and Hamburg show the possibilities of a mature sector, Melbourne provides good templates for getting one off the ground. The Australian "two-pronged approach" to housing policy—focusing on subsidized low-income housing along with market-rate provision—resembles the American structure. With government support for Baugruppe projects limited to one-off, discretionary decisions like waving parking requirements, we see in Melbourne a confluence of high citizen demand and private-sector initiative to generate non-market housing. There are a few key takeaways that planners and policymakers should note.

- Close-knit professional networks: Like the German cases, both Melbourne initiatives emerged from professional collaboration within the local design and development community. Practitioners who were dissatisfied with the quality of Melbourne's speculatively-built housing stock developed pilot projects to demonstrate their ideas for improvement. These attracted consumer demand and solidified core professional networks for future developments. The architect-led model was borne from a partnership between six Melbourne architecture firms (Feagins 2018), and the advisor-led model began with a speculative developer, an architect, and a few friends developing a townhome project for themselves (DM-M-01). **Local authorities and planners especially could advance private-sector initiation of non-market housing through outreach, and potentially through support of a pilot project.**

- The need for professional service provision: Melbourne's initiatives show the value of a professional development management service in creating replicable processes of Baugruppen provision. Both architects and developers provide this service, and the cohousing community has supported them by sharing lessons learned in mediation and participatory design (PC-M-IS). **Planners may build on the research started in this report to help bring together the finance, governance and design acumen in these fields.**

- Establishing lender connections: The sustainable social and environmental outcomes generated under these models have generated interest from equity investors and banks. The architect-led structure depends on private equity as a limited partner, while the advisor-led structure requires high capital contributions from households—a key barrier preventing broader affordability and

uptake. **Municipal or non-profit housing agencies may consider providing soft loans as initial cash injections into projects that align with planning objectives in sustainability.** The advisory firm is currently exploring additional options to reduce the equity barrier, through shared-equity schemes, external social impact investment, and a revolving fund with capital contributions from prior joint venture participants (DM-M-01).

- **Good examples for promoting land-use reform:** In contrast to Berlin and Hamburg, where multi-story construction is prevalent throughout, **Melbourne's models show that Baugruppen can work as low- to medium-density townhomes and condominiums in former single-family zones.** Economies of scale factor in, so the denser the better for affordability. Yet low-density projects on rezoned single-family parcels may be able to leverage the home equity and land of the existing homeowner. Since the future residents will be known, this could work to allay oft-raised homeowner concerns about increased traffic, loss of neighborhood character, or speculative developers profiting from policy changes.

Orientation phase

1. Group formation
2. Governance and collaborative concept development
3. Develop work plan and communications policy
4. Leverage internal and external expertise
5. Develop legal structure
6. Develop financial structure

Advisor-led structure of provision

Group formation: The private advisory firm initially assembles groups of like-minded individuals through a selection process and guides them through the development and construction of owner-occupied dwellings. It solicits interest in membership through online and in-person information sessions, surveys and newsletters. The most recent survey results indicate demand is high: the group received 96 household responses representing 190 potential residents for a proposed Baugruppe in Melbourne. A majority of respondents were from the Melbourne suburbs, and half of all respondents were first-time buyers. Of all respondents, 12% indicated their willingness to commit to a group immediately, while 43% were willing to commit within six months. In total, assembling groups and negotiating land acquisition has taken approximately one year for prior projects (PC-M-IS).

Governance and collaborative concept development: Group members indicate their preferred design and lifestyle concepts for the project upon their admission. The firm then drafts a design brief that outlines the project's scope and vision. As demand for social and ecological sustainability is high among participants, the firm incorporates into the design brief principles of passive house design, locally-sourced and sustainable materials, modular repetition of elements, and shared or adaptable spaces (PC-M-IS).

Group members meet monthly or bi-monthly with the advisory firm and employ a collective decision-making process during meetings. Each member of the newly-formed Joint Venture entity retains one vote, and decisions are made by majority or supermajority. The firm has established a series of milestones throughout the development process that require collective endorsement from the group to proceed. At the end of the orientation phase, endorsement of household membership and the firm's design brief allow the group to proceed to the planning phase (PC-M-IS).

Develop financial structure: Prior to acquiring a site, the firm will develop a proforma and cash flow model for members to approve. As in Germany, members must bring their own equity to capitalize the Joint Venture initially. The firm estimates that members' equity contributions should collectively represent approximately 30% of total project cost over the duration of a 3 ½ -year development process, to cover soft costs, requirements for debt financing, and project contingency (DM-M-01).

Architect-led structure of provision

Group formation: The not-for-profit entity overseeing projects developed under this model maintains a list of interested future members, and contacts members when a project begins in an area of Melbourne that they have expressed interest in living. The not-for-profit then conducts information sessions about the specific project and employs a balloting procedure to select residents. Those who want to commit to purchasing a dwelling unit enter a ballot and have an equal chance among all entries at being selected.

Additionally, the not-for-profit allocates 20% of dwelling units in each project for a separate ballot draw, which is restricted to entries from essential workers, individuals with disabilities or their caretakers, Indigenous Australians, and existing residents of other buildings under the not-for-profit's purview. This policy works to ensure diversity and inclusion among the membership of each project (Nightingale Housing 2022b).

Governance and collaborative concept development: Under this model, the architect, working in partnership with a development manager, will have already completed a feasibility study and conceptual design by the time groups are formed. Members may converse with the architect during the information sessions or by email, but there is little chance for residents to influence the design before committing to purchase a dwelling unit. However, the not-for-profit adheres to transparent sustainability criteria in the design and siting of buildings (listed in the Planning Phase), so residents are assured that certain standards will be met (NH-M-IS).

Develop financial structure: At this stage future residents are responsible only for a commitment fee, which forms part of a later deposit. Rather than residents supplying equity for pre-development and future debt financing, the not-for-profit entity raises equity investment from partners who remain external to the project. Social impact investment (SII) from Australian banks and private equity firms have arisen as key contributors to the model. The lack of settlement risk (as projects are 100% pre-sold under the balloting procedure), high build quality and strong community support for each project have contributed to lending support (Frew 2019). External investors do not play an influential role in developing the design concept, however.

Figure 37.
Typical stakeholder assembly,
advisor-led structure of provision

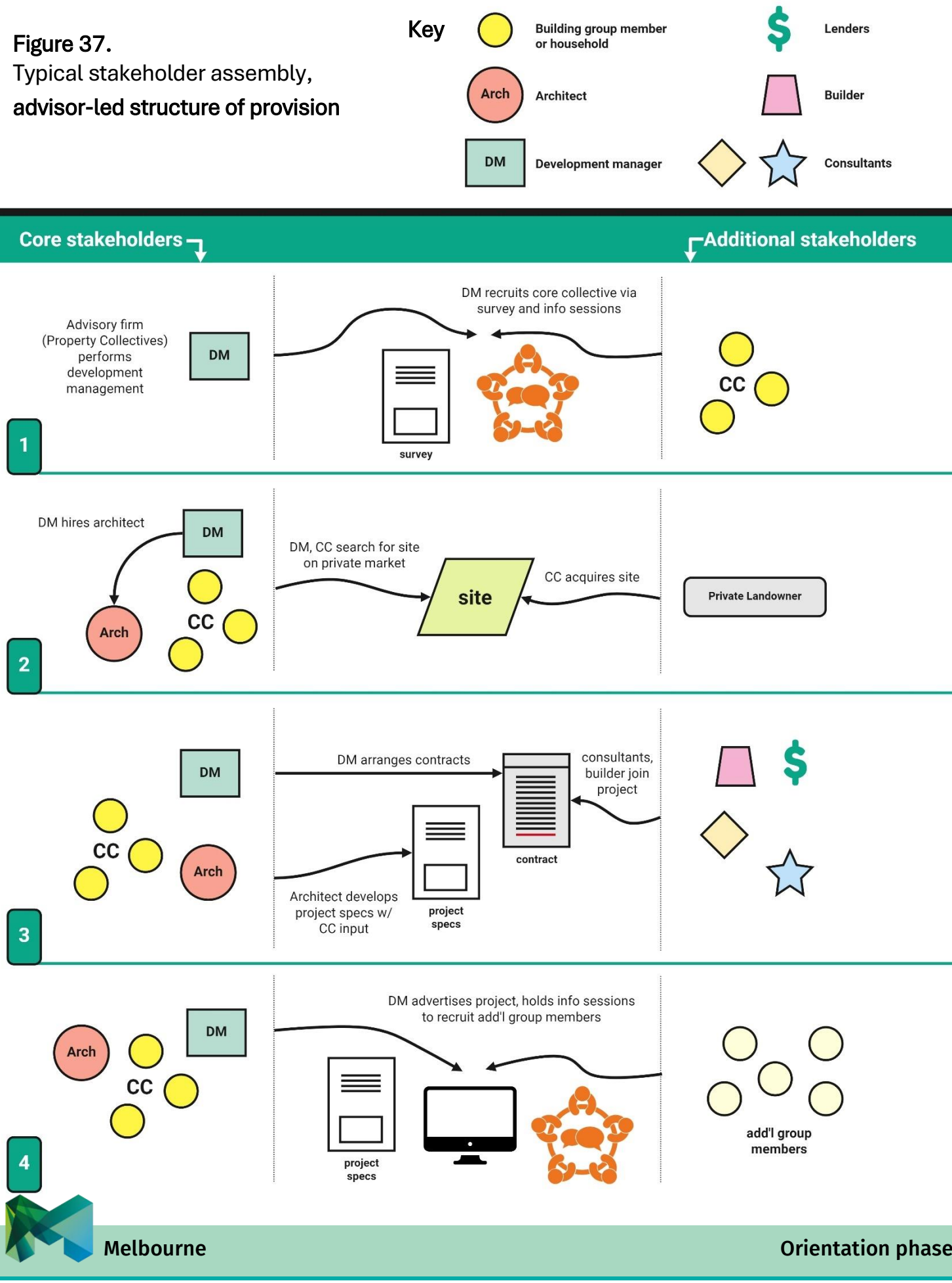
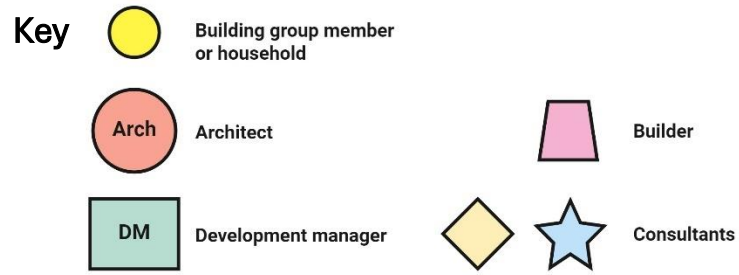
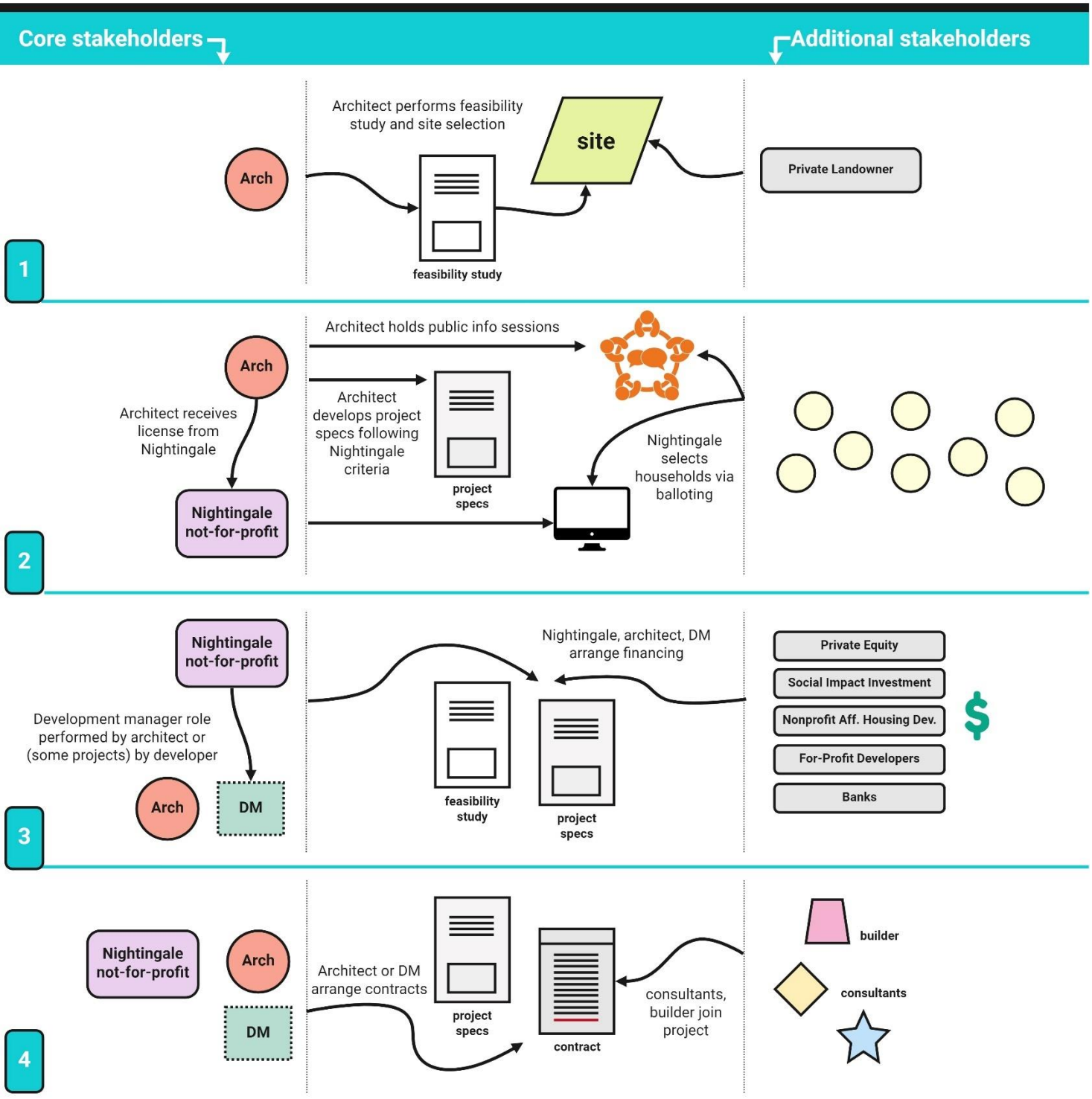


Figure 38.
Typical stakeholder assembly,
architect-led structure of provision





Planning phase

1. Land acquisition
2. Project planning
3. Project management tasks
4. Financing: land acquisition and pre-development

Advisor-led structure of provision

Land acquisition: In contrast to the German cases, there is no public-sector involvement for collective development groups. Local councils in the greater Melbourne area have thus far made no ground-lease or site option arrangements to building groups, so groups must organize their funds to acquire land on the private market. The acquisition strategy under the advisor-led model is to recruit one-third to one-half of the final project membership *before* beginning a search for building sites. This allows this "core collective" of households to dictate the budgetary constraints of the project going forward: which sites are in play for purchasing, and what the overall development typology and levels of finish will be. So far, groups have tended to choose sites within 7km of the city center, and the most feasible development strategy has been to purchase and replace old single-family houses on larger urban parcels (DM-M-01).

When asked about this policy's potential to exclude future members from participatory processes, an advisor indicated that the agility of the smaller core membership was necessary at this early stage to organize and move quickly on a purchase. Plus, the core collective is rewarded for putting equity investments up early with the chance to shape the project outcome. Households joining later in the process are effectively subscribing to the project vision. Like in the German cases, having a site and a base scheme in place can aid in filling out the remaining membership (DM-M-01).

Pre-development financing: Melbourne's heated property market has influenced the financial models of recent projects. Where in Germany, valuation gaps are commonly cited at 20 to 30 percent, the Melbourne advisory firm targets a 15 percent valuation gap[4], due in part to rapidly-rising land prices and construction costs.

Pre-development soft costs including professionals' fees are covered by group members' own equity investments. Once a site is selected, the collective joint venture entity is responsible for taking out its first commercial loan for land acquisition. Unlike Germany, there aren't any go-to lenders for cooperative development, but the advisory firm has developed relationships with a few banks of local and national scope. While prior projects secured loan-to-value ratios up to 60 percent, the advisors' most recent project secured a 70 percent LVR from Bank Australia, which proved crucial to its success (PC-M-IS).

[4] This is the difference between the appraised value of the dwelling and what the owners actually pay to construct it. Seen another way, this 15 percent represents what would have been the speculative developer's profit margin.

Although the lending criteria was not given, this upward trend in LVRs is a positive development for feasibility and affordability going forward.

Architect-led structure of provision

Under this structure, the architect performs feasibility and site selection prior to the recruitment of group members. The architect then applies for a license under the not-for-profit's development model. When this is granted and the future purchasers of the dwellings are selected from the not-for-profit's balloting procedure, the architect gains control of the project for delivery (Cumming 2018). Land acquisition is a barrier, as the architect must ensure development feasibility at a particular site given constraints imposed by the not-for-profit. There are several overarching design principles that the architect must adhere to when securing the not-for-profit's license (Nightingale Housing 2022a). These include

- Siting projects in urban areas with transit access and providing bicycle parking
- High energy-efficiency ratings for the building (a 7.5-star rating under the Australian system, where code requires 6-stars)
- 100 percent carbon-neutral operations
- 100 percent electric power and rooftop solar panels
- Passive ventilation, high thermal insulation, and solar shading

Pre-development financing: According to the business manager of the not-for-profit, land acquisition represents one of the main limiting factors in scaling up this structure of provision. The not-for-profit relies on external investment to provide pre-development funding, and Melbourne projects have had to piece together lending syndicates from the arenas of social impact investment, private equity, nonprofit affordable housing developers and banks (Alexander 2021). Lenders were generally wary of the unorthodox projects at first, but the difference between what the development looks like on paper—where they require a number of exceptions to finance rules—versus in-person proved key to bringing investment into subsequent projects. Lenders cited the build quality, the sense of community generated by the design and the lack of settlement risk as important factors leading to their decision to back projects (Frew 2019). In Sydney, where land costs are even higher than Melbourne, the not-for-profit licensed its first project in the city by partnering with a church group, who contributed land and equity investment (Alexander 2021).

To enhance affordability, some projects under this model contain efficiency dwelling units (figure 39) that are cross-subsidized by larger two- and three-bedroom units within the building. These efficiency units are restricted to low-income or first-time homebuyers (Nightingale 2021).

Figure 39. Efficiency dwelling unit for low-income or first-time homebuyers. Photo: Meche Studio

Realization phase

1. Finalize design and gain construction permit
2. Project management tasks
3. Construction
4. Construction financing

Advisor-led structure of provision

Construction financing: In this model, the group joint venture entity owns both the land and the building. The real estate advisory firm responsible for developing this model has secured support from local and national banks in prior projects. Advisors' backgrounds are in marketing, development, finance, architecture and urban design (Property Collectives 2022).

For a Baugruppe project currently in development, Bank Australia has expressed willingness to provide a commercial loan for construction, contingent upon each joint venture household completing a financial assessment. The bank has agreed to a loan-to-value ratio of 70 percent, with 4 to 5 percent interest, for the construction loan. Additionally, the bank will sever liability so that each household is only responsible for their share of construction debt. To meet the equity requirement for construction financing, each household may take out a home mortgage against their future dwelling (PC-M-IS).

While participating households have significant input into the building and site design, the advisory firm lays some initial groundwork to help ensure property valuations are retained. The advisors' design framework does not target *luxury* construction in order to better insulate against future market shocks. Yet it does target *longevity* by incorporating high-quality, sustainable building materials and adaptive interior spaces. During the realization phase the advisors obtain multiple valuations for each unit and make these transparent to all members, with the objective of achieving the targeted 15 percent valuation gap between TPC and market value (PC-M-IS).

Architect-led structure of provision

Construction financing: The head of the not-for-profit met with 34 lenders before securing equity investment for their first project, Nightingale 1 in Brunswick. Then Bank Australia joined the project as part of a lending syndicate to finance predevelopment and construction. The not-for-profit secured financing at just under 70 percent loan-to-value with a 6.5 percent interest rate (Frew 2019). Subsequent projects have also struggled in acquiring senior debt and have seen the not-for-profit's founding members take on significant personal financial risk, but they have also gained experience in sourcing finance for future proposals (Perinotto 2021). These are seeing high demand among interested home buyers and larger social impact investment firms, which has reduced the not-for-profit's reliance on mezzanine lending going forward (Frew 2019).

Occupancy phase

1. Alterations to legal structure
2. Establish maintenance plan
3. Planning for the future
4. Long-term financing

Advisor-led structure of provision

Similar to owner-occupier Baugruppen in Germany, groups working under the advisor-led structure dissolve the joint venture entity upon construction completion and form an Owners Corporation. An individual title to a dwelling unit is issued to each household. The advisory firm's role tapers off at this point and the group begins to function as a homeowners' association (DM-M-01).

Long-term financing: One of the final advisory steps, which can occur as early as six months before construction completion, is to consult households in obtaining long-term financing. At this point the group will have outstanding commercial construction debt and possibly additional debt from land acquisition and pre-development. Here the advisory firm's established relationships with several Australian banks prove helpful in finding willing lenders, although the financial situation of the households still mainly influence the loan-to-value terms for financing (PC-M-IS). An advisor indicated the majority of households take out a home mortgage against the new dwelling and use the proceeds to pay off their share of construction debt. Some use savings or leverage equity from other property to meet debt obligations. The newly-formed Owners Corporation is responsible for establishing resale and renting procedures for its membership; the advisory firm does not set any restrictions in this regard. Unless households self-impose restrictions for their building, they are free to sell their dwelling unit on the market or utilize it as an investment to lease out (PC-M-IS).

Architect-led structure of provision

Long-term financing: Under this structure, households purchase their dwelling unit from the external not-for-profit organization when the occupancy phase begins. Up to this point, households were only responsible for a deposit of 10 percent of the dwelling sale price, which reflects the cost to realize each dwelling rather than its going market price. Households are responsible for obtaining personal mortgages or providing own capital to cover the purchase price (Nightingale 2021).

This structure forms an Owners Corporation of the households in each building, which sets protocols for common area management and collects household dues for utility, repair and insurance charges. Like the advisor-led structure, there are no restrictions on households leasing out dwellings. But this structure does employ resale restrictions to discourage speculation, since residents purchase the dwelling at cost and not market-rate. Upon resale, households are entitled to their original purchase price, plus the value of any improvements made, plus the average appreciation rate of the district housing market. This

limited-equity caveat ensures preservation of structure's original intent to provide below-market-rate homeownership opportunities. Households perform the sale themselves, but the not-for-profit entity maintains a database to match reselling households with interested buyers (Nightingale 2021).

5.0 Discussion

This study has attempted to outline and clarify the complex process of self-developing a multifamily building under the Baugruppen structure. It has shown how in each case city—Berlin, Hamburg and Melbourne—different stakeholders from the private, public and nonprofit sector have emerged to create and influence certain structures of Baugruppen provision. These structures don't seek to create standardized physical forms or typologies of multifamily buildings. Rather, they provide replicable processes of project delivery with some level of professional guidance, and they assist participants of building groups in overcoming the significant knowledge barriers and resource commitments inherent to this housing model.

5.1 Key takeaways from case studies

Seven key takeaways represent points of consensus among the stakeholders interviewed in all three case cities. These intend to paint a picture of where the Baugruppen sector currently stands.

1 **Rising development costs have led to professionalization within the sectors, which has also increased uptake.**

There was broad agreement among experts interviewed that the Baugruppen structure of provision prevalent through the 1990s and early 2000s—where groups of citizens, organized around a common idea and usually including an architect as a member, would realize a multifamily project relatively independently—is no longer the leading model. Rising land prices and high levels of speculation in the German case cities have excluded building groups from competing on the open market. Now, professionals in architecture and real estate development take leading roles in project initiation and are more likely to be the only full-time members on the project team. The model has undergone a degree of professionalization. While some architects still manage projects as group members and future owner-occupiers, most work on a fee-for-service basis, and many take the initiative to secure a building site upfront before assembling the membership of the building group. In Melbourne—another tight property market—emerging Baugruppen developments follow similar professionally-led structures.

As a result, Baugruppen today are further from their original conception as one-off, bespoke projects. They have typically retained their sustainable urban development ambitions, but the professionalized process led by external consultants has added a dimension of replicability. Baugruppen are more accessible to citizens outside the design and development professions, and they require a lower commitment of group members' time. The professional experience now integrated into project teams has increased the financial sector's willingness to support projects that had once been considered niche or unorthodox from a lending perspective (Stevens 2017). And the existence of professional Baugruppe consulting allows for greater knowledge exchange, as stakeholder roundtables and information sessions are key to informing banks of current practices and barriers within the sector.

2 Consulting a unique clientele has created new professional opportunities and has redefined existing roles.

Baugruppen seek to build their own multifamily building without a developer. Yet there are numerous roles traditionally filled by the developer that building groups need to reallocate. As each sector has become professionalized, we see the rise of a new role in Baugruppen development management. The development manager *(German: Baubetreuerin (f.) / Baubetreur (m.))* typically joins the project early in the orientation phase and remains through construction, working on a fee-for-service basis. Their role varies according to the skills and time-on-task that households can contribute, but typically their scope of work includes:

- Mediating between households, and representing the interests of households while coordinating with external stakeholders.
- Arranging consultant contracts, and acting as the project's point-of-contact
- Developing the project budget, and managing the shared finances of group members
- Organizing group meetings, and documenting project decisions and progress
- Securing entitlement permits from the government

Interviewees agreed that external development management has been crucial to recent uptake of the Baugruppen model in Melbourne, as well as its continued growth in Germany. High demand for these services, which a limited number of nonprofit building associations and private consulting firms provide, is contributing to bottlenecks in Baugruppe initiation and delivery.

In the U.S., nonprofit housing associations, for-profit developers, architects, or those with cohousing experience could provide a similar service. An amount of skills training will be necessary, especially in mediation; both architects and developers will need to reckon with the high level of financial and

emotional involvement of the future owner-occupiers, and the differing opinions that are bound to surface among a multi-headed clientele. The three case cities feature strong internal communities of architects, development managers, and residents of collective housing that share tips and best practices. As more European municipalities begin to adopt planning programs to support Baugruppen, there has been a recent rise in seminars and workshops on building group facilitation. Interested parties in the U.S. should look to these for a starting point, while bearing in mind that contextual differences will certainly apply.

3 A 'core collective' of participants aligned around a common objective is crucial.

This report analyzes four structures of Baugruppen provision across three cities. All except for the architect-led structure under the Nightingale model rely heavily on approximately one-fourth to one-half of total participating households to advance the project in its early stages. This core collective of participants develops a strong, agreed-upon design concept in tandem with the architect, and it has outsized influence on the budgetary capacity of the project going forward. Members of the core collective make upfront contributions of their own equity and may be required to cover costs that future members repay. Yet they are the ones driving the innovations in sustainable design that Baugruppen are known for.

Core collectives are formed through friend and professional networks, by neighboring tenants looking to transition into homeownership (Berlin), or even by parents of primary-school children that wish to share childcare responsibilities (Hamburg). They may be united by the goal of living in a specific neighborhood, or by the desire for car-free or Passivhaus living (see figure 14). Sustainable concepts like these are eligible for significant subsidies in Germany, and building groups are unlikely to value-engineer them out of the project at a later stage.

Essentially, the design concept, the initial equity, and the professional support are enough to get projects going. Building groups frequently proceed into land acquisition, permitting and schematic design, then market the project to recruit the remaining households, often leaving them the choice on how they will finish the interior of their flat. Interviewees agreed that this structure was easier on all parties involved; it allows groups to navigate the difficult phases of project conception and pre-development with fewer competing views.

4 Steep upfront equity requirements influence Baugruppen demographics and accessibility.

The tandem of professional support from the project's architect and development manager relieves households of the daunting time commitment required for Baugruppen. The major hurdle that remains is the upfront contribution of members' equity. As section 4 shows, financing self-developed projects is a hurdle at every step of the process. Yet consensus formed among interviewees that the initial equity requirements—often approaching 20 percent of total project cost or higher—represented the greatest barrier to participation. It's this factor that makes owner-occupier Baugruppe projects a predominately middle and upper middle-class endeavor, and it restricts participation for those without existing home equity or financial support from family.

The equity hurdle was cited as a key reason why Baugruppen remain a niche product even in German markets. U.S. planners should consider this when evaluating Baugruppen as a tool for affordable housing provision: currently, owner-occupier projects fulfill planning objectives in sustainable urban development very well, but accessibility to the model remains limited. Of the case cities examined, Hamburg is making the greatest inroads in reducing the equity hurdle for Baugruppen incorporating under cooperative tenure. Coordination between the Agency for Building Communities and the municipal bank has aided in the establishment of funding streams for cooperatives specifically. These include initial capital grants of up to €15,000 per dwelling unit along with rent subsidies for lower-income members (IFB Hamburg 2022), who may then put a lower share of their monthly income towards debt repayment for the whole project. Using these financial products, the Agency is promoting mixed-income Baugruppen under a *solidarity funding* model in which several higher-income members contribute more equity and receive more cooperative shares, and the remaining membership is filled by subsidized lower-income households. According to Agency staff, this mixed-income model has been an effective way to include more seniors, young families and migrants in building groups (AfB-H-01).

5 Baugruppen continue to act as an innovative motor in multifamily development.

Stakeholders across Berlin, Hamburg and Melbourne agreed that their city's Baugruppen sectors – while relatively small – play an outsize role in sustainable innovation. This has remained constant throughout the short history of Baugruppen even amidst the trend toward professionalization. The first multifamily Passivhaus building in Germany was a Baugruppe built in 1995 (Arch-US-02). The first Passivhaus, the

first car-free building, and the first tall timber building in Hamburg came from Baugruppen (AfB-H-01). And the pilot Nightingale project contributed to planning policy changes in Melbourne by demonstrating that minimum parking requirements were unnecessary (Prof-M-01).

Three reasons best summarize why many Baugruppe projects remain on the cutting edge of sustainable multifamily design:

- **The motivation of Baugruppe architects,** who work through conceptual design and planning in tandem with the core collective of future residents. Residents will know their future neighbors intimately, and they will have to share ongoing energy and maintenance costs. This is a natural incentive for the group to co-design high-performance buildings with shared amenities. In each case city, there is a cohort of architects who welcomes these opportunities for diversifying their skill set. These practitioners view roles in group mediation and project management as natural extensions of their profession, and typically relish the chance to design in a context where lifestyle and lifecycle considerations supplant the profit motive.

- **Accessible bank subsidies with clearly-defined sustainability targets.** Germany's federal development bank (KfW), and sustainability-focused banks, (GLS and Umweltbank) have predetermined criteria for Baugruppen social and environmental performance, and they provide significant grants and low-interest loans that may all be stacked. Building groups can, from the start, organize their design concepts and financial models around hitting these targets. In Melbourne this financial infrastructure is less developed, but groups have garnered equity and debt financing on the strength of their sustainability concepts. The result is that many Baugruppe projects depend on these subsidies for feasibility, so they are unlikely to value-engineer their innovative concepts out at a later stage.

- **Public policy.** In awarding public land to Baugruppen, Berlin and Hamburg each employ a competitive "social value concept procedure" that selects groups based on the strength of their sustainable design strategies. Again, the competition criteria are predetermined, and groups may organize around hitting these targets.

Planners should take note of the high level of sustainable innovation occurring in these Baugruppen sectors (refer to section 2.2). **Even if affordability and accessibility remain the greater hurdles, there is a clear value-add for municipalities in the realm of environmental sustainability**. It should be noted that this innovation occurs in a social context, too. Whether projects bring together people of like interests—as in, strangers becoming collaborators and future neighbors—or whether they involve familiar households making the jump toward living together, Baugruppen facilitate the creation of tight-knit social networks.

6 Step One is a pilot project; Step Two is establishing stakeholder connections.

American subject experts interviewed said that despite the increasing interest in Baugruppen around the West, and despite their well-documented benefits in sustainability, not enough stakeholders Stateside know what it is. It's equally as important to show what it *isn't*. The distinctly urban, multi-story character of Baugruppen buildings separates them from the bulk of cohousing projects realized in the U.S. They can be *a form* of cohousing, if the group elects to organize cooperatively and share amenities or tasks. But they can just as well turn out as condominiums or as building cooperatives in the end, and we do have plenty of precedent here in this regard. The keys are the self-financing of the development by the future residents, and their participation throughout the design and development process.

All interviewees agreed on the importance of a pilot project in an urban area that shows these distinctions. From a lending perspective, a built example in the local context will go a lot further toward securing financing for future projects than international precedents on paper will. **The architecture profession is best equipped to take on this initial task, just as they did in the German cities.** It may require collaboration between a small local or regional syndicate of interested architects, who could then consult with contacts in real estate, cohousing, and sustainability consultation for best practices in financing, group mediation and project specification, respectively. The important thing is that a tight local ecosystem is created, in order to ensure the process can be replicated.

This ecosystem must also address the demand side by informing the public about joint venture opportunities. A variety of precedents for outreach exist from the case studies. In Berlin, real estate consultants inform their clientele of Baugruppen opportunities (Fin-B-01), and the *Netzwerkagentur GenerationWohnen* and CoHousing Berlin are two nonprofit-established clearinghouses for information. Marketing at primary schools worked wonders in Hamburg, where planners found a willing cohort in young parents who were already used to looking after one another's kids and had a stake in their neighborhood (AfB-H-01). In Melbourne, simply posting a sign at the pilot project's jobsite was enough to attract demand for the next project (DM-M-01).

7 Local authorities may support Baugruppen development through a range of policy and programmatic interventions.

Of the case cities studied, the level of public-sector support exists on a spectrum from almost none[5] (Melbourne) to comprehensive, cross-departmental facilitation (Hamburg). With the tacit knowledge that Hamburg's leveraging of Baugruppen to meet social housing and district planning objectives is the result of thirty years of integrated State support (AfB-H-01), planners and policymakers in the United States likely need to start smaller. Here are a few areas in which they can make inroads, roughly arranged from least- to most-extensive.

- **Startup support for group build** could come from economic development offices in the form of project consultation and links to financial capital sources. The connection between small local businesspeople and group builders is a strong one, as they share a commitment to investing in and improving their communities.

- **Revising building codes** to permit taller multifamily structures to be served by a single stair. This idea is well-established internationally and could tip group build projects into feasibility without a reduction in life safety measures. See Michael Eliason's (2021) report for the City of Vancouver for a thorough discussion of the benefits of this code revision.

- **Progressive regulatory reforms,** like reducing single-family zoned areas, streamlining the entitlement permitting process, and incorporating green building subsidies, will indirectly work to support future Baugruppen in a jurisdiction.

- **A proactive role in stakeholder coordination** or in enacting a pilot project (see takeaway #6) could jumpstart Baugruppe development in a jurisdiction. U.S. planners may coordinate a knowledge exchange with peers in Western European city or state governments—who themselves already conduct such exchanges between nations. They may in turn use best practices and lessons learned to educate architects, who are best positioned to initiate early projects independent of more comprehensive government support.

- **A database of vacant and underutilized parcels** that is publicly-accessible. This may include public or private land, or both. The benefit here is that potential group members may be able to organize around the idea of living in a specific location or neighborhood. Plus, irregularly-shaped parcels or brownfields that developers pass over may be put in play for building groups.

[5] In Melbourne, local councils have granted variances to individual projects, but there is no city-wide policy or preferential treatment in support of building groups (Prof-M-01; DM-M-01).

- **Allocating surplus public land to building groups.** This is a current policy trend that is spreading in Western Europe and is largely occurring through long-term ground leases. The potential for a win-win scenario is in play: groups typically struggle with front-end financing, and any reduction in land acquisition costs would make a difference. And, anecdotally, group members may be more comfortable making periodic land rent payments over a lease term, rather than fronting a large sum of money prior to construction. The allocating authority could condition the ground lease on the group meeting social or environmental sustainability objectives. Because sustainability is a shared interest between building group and government, a land allocation strategy could even work in lieu of green building subsidies, which could be necessary to incentivize such outcomes for speculative developers.

- **Establishing new lending infrastructure** for cooperative development, such as a development bank, municipal bank or cooperative bank, would probably be the most onerous government intervention, but would likely have the highest impact on future scalability. As Baugruppe projects may not fit the funding criteria of established U.S. lenders, a new ethos in development finance may be necessary. Examples from Hamburg and Berlin show that groups rely heavily on subsidies for sustainable construction from the KfW development bank (see takeaway #5), and Hamburg's municipal bank provides a funding stream for projects to incorporate affordable housing units. Bank Australia, formed through a merger of credit unions and cooperatives, has funded group build projects in Melbourne under each structure of provision.

5.2 Areas for further research

A few points came up during my discussions that might provide a research agenda for further academic study:

- **Baugruppen and gentrification:** The topic of gentrification came up among experts in each of the three case cities. Owner-occupied Baugruppe projects largely remain a middle-class endeavor, and group formation can be exclusionary. Hamiduddin and Gallent (2016) and Urban (2018) provide a starting point for this topic of whether building groups end up becoming "gated communities". It's worth noting that experts in Hamburg and Berlin, when discussing the role of Baugruppen in generating community at post-industrial sites, considered them a force of positive gentrification, as opposed to the status quo of developer speculation at these sites.

- **Baugruppen in smaller / cooler markets:** This research is limited to three case cities experiencing rapid population growth and rising land costs. Yet Baugruppen exist in smaller markets throughout Germany, sometimes with municipal support. The model is not inherently geared toward one type of market; it's probably better considered as a mediator between them. In hotter markets, Baugruppen can bypass inflated market prices; in cooler markets, they may access cheaper land and construction costs.

- **Individual project case studies:** This could provide an additional level of detail. I've attempted to outline a "typical" Baugruppen development process with the tacit knowledge that all projects are atypical in some way. Including failed Baugruppe projects into case study research would provide valuable lessons going forward.

- **Uptake of niche housing models:** There is a small body of literature on how niche housing models interact with mainstream development, including Helamaa (2019), Berry, Davidson, and Saman (2013) and Moore and Doyon (2019). Analyzing the effects of Baugruppen projects on the wider speculative development industry—especially in terms of influencing sustainable building practice, and matching housing demand to supply (Sharam and Bryant 2017)—would be a valuable contribution.

- **Quantitative analysis:** Broad survey data and analysis of Baugruppe households would be useful to get a clearer picture of demographics and financing strategies especially. Christine Suckow's (2009: in German) study of household characteristics in Berlin is the most recent such effort.

- **Assessing demand for group build:** There is only so much that government and professional stakeholders can do to jumpstart a group building sector. Determining whether there is an appetite among households to embark on a multi-year development process will be a critical next step. This assessment could pair with a demographic analysis, and would ideally include motivating factors for households (cross-generational living, economies of scale, shared childcare duties, net-zero energy consumption, etc.)

6.0 Conclusion

I conducted this research primarily to help start a conversation in planning, architecture and development circles about implementing Baugruppen in a U.S. context. My motivation came from early exploratory research beginning with a 2012 site visit to the Quartier Vauban in Freiburg. Then, as now, I was impressed by the drive of seemingly ordinary citizens to spend significant amounts of their time, money and energy in the service of collectively reshaping their built environment, and the equally strong drive of local planners, architects and community members who support them.

It's my belief that this drive exists here in the United States too. Our planning objectives in sustainable urban development—namely, encouraging the supply of a diversity of housing types, and transitioning to a more energy-efficient building stock—align well with those of group builders, who are naturally incentivized to produce such outcomes by virtue of their inclusion in the development process from the beginning. The focus of this research was on this development process: the stakeholders involved, the many tasks of the real estate developer that must be redistributed, the major barriers facing building groups, and how these barriers have been overcome in select cities. This was in effort to provide local authorities and professionals with a roadmap toward implementing a pilot project at least, and a replicable model of non-market housing provision at best.

It was also my aim to communicate that we in the U.S. can leverage experience from other countries to jumpstart group building here. The policy and legal barriers are minimal, and the major hurdles identified in land acquisition, project management and financing (especially equity-raising) are ones developers face every day. We need strategies to lower these hurdles, certainly, for groups of small-scale citizen developers; whom, over the course of this research, I've come to consider as not so different from small, local businesses with a desire to invest in and give back to their communities. Small businesses typically have the verbal support of any mayoral administration and departmental support from planning and economic development offices alike, so extending a hand to group builders isn't a huge stretch.

But while policy levers move, we in the U.S. can focus our efforts on raising awareness of the group building practice and beginning professional training. We need online platforms, or public forums: places where citizens can connect, work out their concepts collectively, match these ideas to viable building sites, and access professional support—similar to crowdfunding. Whether from architecture, real estate development, business development or cohousing, we need professionals to go beyond the scope of this study and conduct further knowledge exchanges with peers in mature group building sectors. Perhaps the most electrifying statement to hear from German experts was that American professionals of the built environment will find not only new business opportunities in their cities, but also readily available support and continued advocacy from a network of peers across the pond.

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Icons in structure of provision flowcharts designed by PikPNG.

Appendix

Interviews conducted. Research timeframe: Fall 2021 – Spring 2022.

Code	Date	Name	Occupation	Location	Type	Duration	Notes
Co-op-US-01	10/14/21	Keefe, D.	Cooperative development consultant, subject expert	Somerville, MA	Unstructured	60’	English: notes taken
Arch-US-01	12/15/21	Eliason, M.	Architect, subject expert	Seattle, WA	Unstructured	45’	English: notes taken
Res-B-01	2/7/22	Name withheld	Baugruppe participant / future resident	Berlin-Brandenburg region	Semistructured	75’	English / German: audio recorded + translated by author
Fin-B-01	2/18/22	Hömberg, S.	Financial consultant + mediator to Baugruppen	Berlin, DE	Semistructured	45’	German: audio recorded + translated by author
AfB-H-01	2/24/22	Bürgener, B.	Agentur für Baugemeinschaften	Hamburg, DE	Semistructured	90’	English: audio recorded
DM-M-01	3/18/22	Riley, T.	Development Manager	Melbourne, AUS	Semistructured	60’	English: audio recorded
Co-op-US-02	3/30/22	Keefe, D.	Cooperative development consultant, subject expert	Somerville, MA	Semistructured	90’	English: audio recorded
Arch-US-02	4/7/22	Eliason, M.	Architect, subject expert	Seattle, WA	Semistructured	60’	English: audio recorded
Prof-M-01	4/21/22	Dovey, K.	Professor, Architecture & Urban Design	Melbourne, AUS	Semistructured	45’	English: audio recorded

Appendix

Information sessions attended. Research timeframe: Fall 2021 – Spring 2022.

Code	Date	Name	Organization	Location	Type	Duration	Notes
AfB-H-IS	1/11/22	Bürgener, B.	Agentür für Baugemeinschaften	Hamburg, DE	Government-sponsored information session	90’	German: notes taken + translated by author
WLA-B-IS	2/1/22	Lemme, W. (organizer) + Baugruppe participants	Wiebke Lemme Architekten	Berlin-Brandenburg region	Planning meeting for a building group	90’	German: notes taken + translated by author
PC-M-IS	5/7/21	Riley, T., Palmer, J., Fergus, A.	Property Collectives	Melbourne, AUS	Information session for a proposed building group	75’	English: prerecorded session
LS-H-IS	8/5/20	Vogelsang, S., Lange, R.	Lawaetz-Stiftung	Hamburg, DE	Information session for development managers	60’	German: prerecorded session. Translated by author
NH-M-IS	7/31/19	McLeod, J.	Nightingale Housing	Melbourne, AUS	Information session	90’	English: prerecorded session